

WHICH TWO HEADS ARE BETTER THAN ONE?

HOW DIVERSE TEAMS
CREATE BREAKTHROUGH IDEAS
AND MAKE SMARTER DECISIONS

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Deloitte

AUSTRALIAN INSTITUTE
of COMPANY DIRECTORS

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Foreword

In *Which Two Heads are Better than One?*, Juliet Bourke has written a thoroughly engaging book, and issued a challenge to all boards and executive teams to think differently, and in a more disciplined way, about how they deal with innovation and the demands that they face every day.

Juliet demonstrates why diversity matters; she rightly focuses on every aspect of diversity, not just gender. She asks the question “is there a dependable formula to help groups make smarter decisions and generate breakthrough insights?” and demonstrates that there is such a formula. Her key insight is that this requires diversity of group composition, disciplined not random conversations, being open about our biases, and a new style of leadership (“leading from the middle of the circle”).

This book prompts significant reflections for all boards, in particular: Are we diverse enough? Do we have the right leadership? How disciplined are we in different approaches to solving problems? Do we have the humility to consider new ways of working together? Do we have any choice given the complex, multi-dimensional issues we confront regularly?

I commend this book to all boards and executive teams. It will confront how you think about all aspects of the way we work, and that is both a challenge and an opportunity.

Elizabeth Proust AO FAICD

Chairman

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Introduction

Increasingly, diversity of thinking is being touted as a panacea to improve organisational performance and protect against organisational risk. But there's little that comes after this headline of an idea – beyond anecdotes like this:

Several years ago, Pacific Power and Light (PP&L), which serves customers in the American Cascade Mountains, had a problem with ice building up on its power transmission lines. To stop the lines from breaking, especially after a blizzard, linesmen were sent deep into the forest to climb the towers, tug on the lines and remove the ice. The job was unpleasant and dangerous. Even though the problem was predictable – after all, winter happens every year – a safer solution continued to elude PP&L.

One year, PP&L decided to host yet another “brainstorming” workshop, this time with the linesmen, their supervisors, an accountant and a secretary.

The workshop didn't start well. Several hours had already passed and the group was nowhere nearer finding a solution than the previous brainstorming groups. During the morning tea break, one of the linesmen was overheard saying, *“I really hate this job. Just last week I was coming down from a pole only to find I was looking at one of the biggest, meanest black bears I've ever seen”.*

Seeking to motivate participants, the workshop leader retold the linesman's tale to the rest of the group, leading to a stream of consciousness....

“We should train the bears to climb the poles. Their weight would probably be enough to shake the wires and knock the ice off,” quipped one of the linesmen.

Someone scoffed, *“Sure, but how are you going to entice them to do that? And do it straight after a blizzard?”*

“We'll put honey pots on top of the poles!” laughed the linesman.

“And, we'll ‘borrow’ the CEO's helicopter to fly them in!” added another, bringing to mind images of honey pots attached by long wires being lowered over the electrical poles.

When the laughter died down, the secretary spoke up for the first time, *“When I was a nurse in Vietnam, the injured soldiers arrived at our field hospital by helicopter. The downwash from the helicopter blades was amazing. Dust would fly everywhere. I wonder if we just flew the helicopter over the power lines at a low altitude, would the downwash from those blades be enough to shake the lines and knock the ice off?”*

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This time there was no laughter – just silence. The secretary had come up with the answer. Today, it is said, PP&L still flies helicopters over the power transmission lines after ice storms.¹

Proponents of this story believe it's a poster-child for diverse thinking. They point to the importance of including outsiders (the secretary and accountant). They invoke the brainstorming mantra: "there's no such thing as a stupid idea."

We take a different view. In fact, we believe this story points to almost everything that's wrong with the standard approach to harnessing diversity of thinking – and the reason for this book.

Our view is that generating diversity of thinking requires more diligence than simply assembling a disparate group of people, encouraging random brainstorming and crossing one's fingers. That approach might work... sometimes... and apparently it worked for PP&L on this occasion. But only because they got lucky. The truth is, if the workshop leader had not overheard that linesman, if a different secretary had been included in the group, or if the secretary had not spoken up, linesmen would probably still be out in the mountains risking their lives.

Taking the PP&L story one step further, and into the hearts of senior level groups such as boards, executive teams and cabinets, it doesn't take much effort to wonder if the value of diversity of thinking is similarly a bit 'hit and miss' in these settings? If that's so, then given the onerous responsibilities of these small groups and the cascading impact of their strategic decisions, the consequences – and the opportunities – are profound.

If the PP&L story does not demonstrate a reliable model for problem-solving, one that creates and then uses diversity of thinking, why does it have such a powerful resonance? The first answer is familiarity; the second is belief.

PP&L put into play an idea and a process that everyone is *familiar* with, particularly in western organisations. Every day, people work in small teams and discuss ideas via some sort of brainstorming process. Each volunteers their opinion, sometimes in turns, other times in a cacophony of voices, but all comfortable

¹ Camper, E., (1993) *The honey pot. A lesson in creativity and diversity*, <http://www.insulators.info/articles/ppl.htm> retrieved 16 March 2014.

that this free-flowing and seemingly democratic process will result in quality idea generation and debate. Certainly it feels better than an autocratic process in which a leader speaks and followers only listen.

As for belief, boards, executive teams, working groups and sub-committees, as well as their thoughtful leaders, *believe* in the inherent value of collective intelligence. They recognise that no one person, however smart, can have the breadth and depth of perspective necessary to make the ‘best’ decision, especially in a VUCA world: Volatile, Unstable, Complex and Ambiguous. They understand the inherent weakness of a decision-making team comprising people who are more similar than different, who are, in effect, a leader’s clones. They worry about personal and group blind-spots and biases.

As Alan Joyce, CEO of Qantas explains “*I believe diversity makes you stronger, gives you better understanding of risks in planning. For example, the way we are set up in Jetstar. I wanted to make sure we could see what other people were doing, that we could share experiences. I’m a big believer in cross-fertilising ideas*”². Intuitively seeking to quantify the value of that diversity, Australian Chief of Army, Lieutenant General Angus Campbell adds “*You are going to get that extra 20% from the others. No one person is going to produce the best solution. . . and ultimately, in a business context or in a competitive environment, the 80% wave is the wave to obsolescence, not to next opportunity.*”³

Such thinking is underpinned by a stream of best-sellers focusing on collective intelligence, diversity, decision-making and bias. Books like Jim Surowiecki’s (2004) *Wisdom of Crowds: Why the many are smarter than the few and how collective wisdom shapes business, economies and nations*⁴; Scott Page’s (2007) *The Difference: How the power of diversity creates better groups, firms, schools and societies*⁵; Dan Ariely’s (2008) *Predictably Irrational: The hidden forces that shape our decisions*⁶; Malcolm Gladwell’s *Blink: The power of thinking without thinking* (2007)⁷ and *Outliers: The story of success* (2008)⁸; or Daniel Kahneman’s (2011) epic *Thinking, Fast and*

2 Interview Juliet Bourke and Alan Joyce, 11 July 2014.

3 Bourke, J., and Dillon, B., (2015) *Fast forward: Leading in a brave new world of diversity (customers, ideas and talent)*, Future Inc, Chartered Accountants Australia and New Zealand, p. 25.

4 Surowiecki, J., (2005) *Wisdom of crowds: Why the many are smarter than the few and how collective wisdom shapes business, economies and nations*, Knopf Doubleday Publishing Group.

5 Page, S. E., (2007) *The difference: How the power of diversity creates better groups, firms, schools and societies*, Princeton University Press.

6 Ariely, D., (2008) *Predictably irrational: The hidden forces that shape our decisions*, Harper Collins.

7 Gladwell, M., (2007) *Blink: The power of thinking without thinking*, Back Bay Books.

8 Gladwell, M., (2008) *Outliers: The story of success*, Little, Brown and Company.

*Slow*⁹. Books that also picked apart the slew of corporate failures (like Enron) or disasters (like BP) as mesmerizingly catalogued by Margaret Heffernan's (2011) *Wilful Blindness: Why we ignore the obvious at our peril*¹⁰.

Unfortunately, these widely read and intensely thought-provoking books raise more questions than they answer. They are fascinating and compelling, yet deeply troubling. They point to a yawning gap between *what could be*, if our decision-making groups consistently tapped into the potential of diversity of thinking and collective intelligence, and *what occurs far too often*: flawed decisions and compromised organisational performance.

Why the gap? Because while many might agree at an intellectual level that diversity of thinking enhances group performance, very few can put their finger on why it works or how to achieve it with any degree of specificity. Indeed few can even agree on what creates diversity of thinking – is it a maverick in a group? Is it people from minorities? Is it, as touted by books and films about the Enigma codebreakers of Bletchley Park, the coming together of team members from different educational disciplines or backgrounds? This knowledge gap means choices about group composition are often guided by hunches and feelings – a less than rigorous selection process.

And circling back to a group's discussion process, there's a trove of research questioning the value of random group brainstorming activities. Indeed, after reviewing 20 of these studies conducted over a period of 25 years, Syracuse University Professor Brian Mullen and his colleagues concluded,

“It appears to be particularly difficult to justify brainstorming techniques in terms of any performance outcomes, and the long-lived popularity of brainstorming techniques is unequivocally and substantively misguided.”¹¹

Nevertheless, there doesn't seem to be a viable alternative group discussion process. As a result, well-intentioned efforts to catalyse diversity of thinking are at risk of falling short or, like PP&L, only succeeding through luck. There is no proven, repeatable process to guarantee that groups consistently generate the highest quality of thinking;

9 Kahneman, D., (2011) *Thinking, fast and slow*, Farrar, Straus and Giroux.

10 Heffernan, M., (2011) *Wilful blindness: Why we ignore the obvious at our peril*, Walker & Company.

11 Mullen, B., Johnson, C., and Salas, E., (1991) Productivity loss in brainstorming groups; A meta-analytic integration. *Basic and Applied Social Psychology* Vol 12(1) pp. 3-23.

no proven method to ensure, as Lieutenant General Angus Campbell put it, that they generate the extra 20%; no reliable way to create a disruptive idea – the breakthrough insight that leads to a new way of operating, service, product or market.

This book chronicles our search for such methods, looking for the answers as to who, what and how. In particular, we wanted to identify whether there is a dependable formula to help groups make smarter decisions and generate breakthrough insights.

In our search, we considered the assumptions most leaders make about diversity of thinking and tested them against rigorous research to identify the factors that actually improve decision-making and the reasons why. And then we asked: “what other elements are required?”

This led us to identify four enablers of diversity of thinking.

First, paying attention to group composition in terms of ‘surface level diversity’ – that is, race, gender, functional roles and educational disciplines – gives a group a much better chance of seeing a scenario broadly and debating vigorously. *It’s all about who is in the group.*

Second, individuals differ in their ‘deep level diversity’, that is, the mental frameworks they use to solve problems. It is the *combination* of these frameworks which creates a robust solution. Worryingly, we also found that senior teams tend to hold similar mental frameworks, thus narrowing group debate and giving rise to blind spots. Making those frameworks transparent, and introducing a process to consider each framework separately, provides a more effective discussion process. *It’s about the disciplined process the diverse group uses to think and debate.*

Third, notwithstanding attention to surface level diversity and deep level diversity, unconscious biases can interfere with individual relationships and group behaviours, as well as levels of attention to diverse ideas. These biases influence the composition of a group and manner of group debate. Awareness of these biases, together with the application of practical mitigation strategies, is key to being open to, and integrating, diverse thinking. *It’s about mitigating biases that pull towards maintenance of the status quo.*

Fourth, we found that *a diverse group functions best with a highly inclusive leader – a leader who role-models what it means to behave inclusively and creates an environment in which diversity is respected and valued.* As Bruce Stewart, Director of Strategic Initiatives, US Office of Personnel Management told us,

“The old IQ was focused around individual intelligence. The new IQ is based on more of a group intelligence. The old IQ is about how smart you are; the new IQ is about how smart you make your team. . . . Instead of a leader leading from the top of the pyramid, they lead from the middle of the circle.”¹²

The importance of inclusive leadership is a clarion call for board chairs, CEOs and team leaders.

Much of the credit for our conclusions goes to academic researchers from multiple disciplines – psychology, law, business and economics – who have conducted studies over the decades into the many different elements that create diversity of thinking. But, more than just curate existing studies, we also conducted our own empirical research and tested our ideas through a crucible of field studies with global leaders and their teams in a diverse set of organisations. Our job was then to pull together all of these findings and identify how teams can apply this evidence in a practical way to solve complex problems.

It has been a process in which we learned humility – making diversity of thinking real in a reliable, dependable and repeatable way is really hard. Each time we tested an idea, we found aspects that worked and others that we could discard. Setting one more part of the puzzle into place only made us aware that more was to be done. We should have realised at the get-go that if this journey was going to be easy, and the answers simple, the discussion would be over by now. There’s still more to know, but what we have learned so far will help leaders and teams to close the gap between what’s currently happening and what’s possible.

Diversity of thinking enablers

1. **Composition:** a focus on specific aspects of group composition in terms of visible and invisible diversity
2. **Conversation:** disciplined debating and thinking processes instead of random brainstorming
3. **Bias mitigation:** mitigating biases that pull individuals and the group back to homogeneity and the status quo
4. **Inclusive leadership:** a mindset and set of behaviours that enables leaders to role-model what it means to be, and create an environment that is, highly inclusive of diversity.

¹² Bourke, J., and Dillon, B., (2015) *ibid* p. 33.

About this book

This is a book of surprises. We disrupt several mainstream assumptions about diversity of thinking, and replace them with evidence that will help leaders understand how diversity of thinking works and be more deliberate and effective in using diversity of thinking to make better decisions.

Inside this book is an holistic view about diversity of thinking, as well as practical ideas about how to improve decision-making through applying insights about diversity, bias and collaboration in teams. Simply put, our focus is on getting to the truth about:

Who: The composition of a decision-making group to ensure those *who* are present have a breadth of perspective – beyond ensuring team members have the requisite level of knowledge, experience and skills to be part of the decision-making group.

What: The thinking and debating processes used by the group to explore diverse approaches to problem-solving and mitigate bias, that is, *what* individuals and the group talk about.

How: *How* the diverse group is led so as to ensure individuals feel respected and valued, and work together collaboratively to identify risks and generate breakthrough ideas.

Our goal is to offer ideas about how to be more purposeful and effective when selecting team members, facilitating group thinking processes and creating a sense of team. These insights are critical for anyone who regularly works in small group settings and wants to generate higher levels of team performance, but especially for those playing a leadership role.

Moreover, as a consequence of discussing who, what and how, we also provide ideas about how leadership groups, such as boards and executive teams, can help to influence those who report to them. The powerful questions that leadership groups ask of others, as well as the processes they use to make a decision, will cascade – from boards to executives, executives to senior leaders, senior leaders to middle managers – to help ensure that higher quality decision-making is the organisational norm. These

ideas and questions are not intended to replace existing good models of governance, but to enhance them by identifying and addressing potential weaknesses.

Part 1: Clarity of thinking clarifies the nature of diversity of thinking: how diversity of thinking is generated and operates in the context of decision-making. We know from our work with thousands of leaders in different organisations and across multiple countries, that those outside a leadership team intuitively assess whether the group is ‘diverse’ by looking at visible indicators such as differences in race/culture, gender and functional role. It turns out this intuition is correct, albeit for unexpected reasons. But there’s something more than visible diversity that enables diversity of thinking.

‘Deep level’ diversity refers to the ways people tend to approach problem-solving – their mental frameworks. Our research reveals that *individuals* are biased to use one or two of six possible problem-solving approaches. Good decision-making requires consideration of all these six approaches. *Groups*, however, can become dominated by the preferred approach of the group’s leader or by a voting block, particularly at senior levels. Frequently, we observed a bias in *senior teams* to apply a narrow range of problem-solving approaches. We also share our field work on helping small teams use all six different approaches, in a deliberate way, to think through problems and generate innovative ideas and robust solutions.

Finally, in this part, we look at the issue of style preferences (for example, introvert/extrovert) concluding, perhaps controversially, that diversity of thinking is *not* created by ensuring a group comprises people with different personality styles.

Collectively, this information will help groups to be more disciplined in the way they think about diversity, select team members to truly provide diversity of perspective and approach, and help themselves and team members to adapt to others’ problem-solving approaches.

Part 2: Biases and behaviours goes on to explain that even if a group has been selected with attention to visible and invisible diversity, and leaders have applied disciplined processes for group debate, biases can still pull a group towards sameness of thinking – and away from diversity. Weaving in lessons from the demise of the Enron board and the Mayfield bombing case, Part 2 discusses some of these biases,

namely social biases that limit connectivity with diverse people, information biases that limit the ability to access diverse ideas, and attentional biases that limit the ability to consider and process diversity of thinking.

Popular books, such as Sheryl Sandberg's 2013 best-seller *Lean In: Women, work and the will to lead*¹³ and *Blindspot: Hidden biases of good people*¹⁴ by Harvard University Professor Mahzarin Banaji and University of Washington Professor Anthony Greenwald, have raised awareness of the power of unconscious biases, particularly in relation to gender and race stereotypes. Many other authors have highlighted broader decision-making biases including groupthink (the tendency of a group to converge so as to ensure equilibrium), confirmation bias (the tendency to confirm a position already held), anchoring bias (the tendency to overweight an initial proposition) and framing bias (the tendency to limit attention to what is within an immediate frame of reference).

Yet we have seen little effort to systematically introduce strategies to counteract unconscious biases when making decisions, particularly in order to access, or when faced with, diverse information and ideas. When Forbes published an oft-quoted article about Warren Buffett's "novel" strategy of counteracting confirmation bias (namely by inviting an opponent to speak with him on a panel so he could listen to a contrary point of view), it only highlighted that such strategies are still not the norm¹⁵, despite the fact that Darwin spoke of confirmation bias over 150 years ago¹⁶.

Following the lead of Charles Darwin and President Obama, we offer practical bias mitigation strategies for leaders and teams, taking into account the energy one needs to actively work against bias. In particular, we offer strategies for the time-poor and cognitively-stretched leader (which probably encompasses all leaders) by considering the relationship between cognitive depletion and unconscious biases. This information will help leaders and groups ensure that the potential of diversity of thinking is not eroded by inattention or conflict, rather that it is enabled through active efforts of inclusion.

13 Sandberg, S., (2013) *Lean in: Women, work and the will to lead*, Ebury Publishing. Ibarra, H., Ely, R., and Kolb, D., (2013) Women rising: The unseen barriers. *Harvard Business Review*, September 2013.

14 Banaji, M. R., and Greenwald, A. G., (2013) *Blindspot: Hidden biases of good people*, Delacorte Press, The Random House Publishing Group, New York.

15 Dooley, R., (2013) How Warren Buffett avoids getting trapped by confirmation bias. *Forbes Magazine*, 5 July 2013.

16 Barlow, N., (1958) *The autobiography of Charles Darwin 1809-1882 with original omissions restored. Edited with Appendix and Notes by his grand-daughter*, Collins, London, Darwin-online.org.uk.

Part 3: The special role of inclusive leaders and leadership groups introduces the concept of *inclusive leadership* and identifies the pivotal role that inclusive leaders play in creating optimal conditions for diverse thinking groups. Having worked with highly inclusive leaders – exemplars – from around the world, we identify the six signature traits of these leaders in terms of their mental models (what they think about) and their behaviours (what they do).

By way of example, we now know that highly inclusive leaders demonstrate extraordinary levels of commitment to diversity, are highly cognisant of personal and organisational biases and work hard to correct course. Crucially, inclusive leaders exhibit high levels of curiosity in diverse others and create inclusive cultures conducive to collaboration. In essence, highly inclusive leaders role-model what it means to be inclusive of diversity, which is a very different mindset (and skill-set) to being inclusive of others who are similar. We bring these insights to life through the story of Colonel Fegan and his command of 800 tri-service and international personnel, along with 3,000 Afghan soldiers, in 2012 during the Afghanistan war.

Finally, we draw together our insights – about visible and invisible diversity, group discussion processes, biases and inclusive leadership – and consider senior leadership groups. How can these groups – boards and executives – operationalise our insights so as to enhance their own interactions? To assist, we provide seven areas of self-reflection.

We also provide boards and executives with ideas about how they can use our framework of analysis to review strategies and recommendations developed by sub-ordinate groups, and influence other stakeholders (such as professional bodies). Our suggested seven powerful questions will help leadership groups ensure that diversity of thinking has been woven into the processes of those who report to them.

This is an exciting moment to be talking about diversity of thinking. For the past five years, the global focus on diversity has intensified, particularly in terms of the gender composition of boards¹⁷ and executive teams. In Australia, company directors and executives have shaped and responded to that interest through landmark initiatives such as the Australian Stock Exchange 2010 ‘Corporate (Diversity) Governance

17 Deloitte (2015) *Women in the boardroom: A global perspective (4th edition)*, Deloitte, <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Risk/gx-ccg-women-in-the-boardroom-a-global-perspective4.pdf> retrieved 29 June 2015.

Principles & Recommendations’ and the former Australian Sex Discrimination Commissioner’s ‘Male Champions of Change’. These two initiatives in particular have influenced executives and governance bodies around the world, in countries including Japan, Canada, Singapore, New Zealand and France.

However, diversity of thinking is so much more than gender diversity. Board members and executives have the opportunity to shape the next wave of change, domestically and internationally, by being clear about the:

1. Connection between diversity of thinking and team high performance
2. Surface level factors which generate diversity of thinking in terms of team composition
3. Processes that help elicit deep level diversity differences during group conversations
4. Hands-on role played by leaders in modelling inclusive behaviours and creating an environment of collaboration
5. Influence of leadership groups, such as boards and executive teams, in role modelling and asking powerful questions so as to ensure diversity of thinking and inclusive leadership become business as usual.

Which Two Heads Are Better Than One? helps define these five factors, providing a blueprint for improving the quality of thinking in decision-making teams and accelerating the journey to equality.

The final word

At a time when business and political environments are characterised by VUCA, there has never been a greater incentive to adopt disciplined thinking. If organisations are to make far-sighted and robust decisions about hydra-headed problems, they need to learn how to capitalise on the collective intelligence of diverse thinking groups.

We believe that when leaders and teams take a disciplined approach to diversity of thinking, it increases the chances of the group making the best decision and generating successful outcomes. By ‘success’ we mean both the objective value of a decision – its ‘rightness’ when compared with other options – and also its subjective value – the extent to which it is perceived as a ‘good’ decision and accepted by those it affects. In contrast, a lack of clarity about diversity of thinking – uncertainty about

how to create inclusive leader and team behaviours, and haphazard processes to generate diversity of thinking during decision-making – leaves too much to chance and is a recipe for average or under-performance.

Finally, in taking a more deliberate and precise approach to fostering diversity of thinking and enhancing collective intelligence, we have encountered a very positive secondary effect. Notably, that attending to deep level diversity (that is, the ways that people solve problems), in addition to surface level diversity (for example, race and gender), generates higher levels of inclusion. Team members experience a stronger sense that their uniqueness is recognised and respected, and also gain a deeper appreciation for the value of others.

In fact, we have come to believe that a focus on diversity of thinking helps fulfil some very positive human needs: it indulges people's sense of curiosity, enables people to create meaning by being part of something that is bigger than themselves, and facilitates more equitable and inspiring workplaces.

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Part 1

Clarity of thinking

The value of collective decision-making and diversity of thinking seems like a universal truth, encoded in our modern-day sayings: “if everybody is thinking alike, then somebody isn’t thinking”; “it is better to be blind than see things from only one point of view”; “two heads are better than one” and “when you need to make an important decision, never do it alone”.

But, as it is also said, “the devil is in the detail”. While these proverbs on wisdom point in the right direction, a few more sentences would have been helpful to bring these insights to life. What creates a ‘different point of view’? Is this just a numbers game? Would any two heads make a difference? How do people know if they are following the crowd or thinking for themselves?

In essence: what is diversity of thinking and what conditions will create value from that diversity?

There’s a logical sequence to answering these questions. Before discussing the conditions needed to bring diversity of thinking to life, one needs to be clear about the nature of cognitive diversity itself. Without a clear definition, diversity of thinking is more like a ‘fingers crossed’ aspiration than an operational tool. Knowing what type of diversity to focus on, and when, is a critical component to gaining value from collective intelligence.

We hear people using a variety of phrases and ideas to describe the elements of diversity of thinking, with some common themes, but little consistent agreement. Having listened to these phrases and sought to distinguish between them in practice, we now define diversity of thinking as:

1. Diversity of *perspective* – how people perceive or see an issue. Understanding what drives diversity of perspective helps to ensure that the way a situation or problem is defined is broad – that, collectively, the group sees the full picture.
2. Diversity of *approach* – the mental frameworks people use to solve problems once they have been defined. Much like using a familiar tool in a physical toolbox, people tend to approach problem-solving moments with familiar mental tools in hand. Although one might acknowledge the value of using a range of tools to create a well-crafted solution, familiarity breeds the repetitive use of, and higher levels of competency with, just one or two tools. Moreover, people are often unaware of their mental frameworks, assume that others share the same framework and sometimes become disconcerted or confused when they experience others approaching a problem in a different way. Becoming conscious of personal mental frameworks, as well as understanding and integrating the frameworks of others, are significant elements in the creation of a diverse thinking group.

Importantly, we do not define diversity of thinking in terms of personality types or thinking *styles*. In this context, people often refer to personality assessment tools such as the Myers-Briggs Type Indicator and the Belbin Team Roles model, or even elements of the Big Five Personality factors such as introversion/extroversion. The validity of the MBTI has been strongly challenged, but this is not the reason we have pushed it to the side, along with the other personality tools. Rather it is because these tools focus on understanding individual preferences in the way people like to learn, mull things over and communicate. Assuming validity, they are more about the *process* of thinking, whereas, when we use the term ‘diversity of thinking’ we are referring to the *outcomes* of the thinking process: different insights and ideas.

To be clear, we take a view that a group of people brought together for their diverse thinking styles will not necessarily generate diversity of thought. If leaders want a team to generate diversity of thinking, then understanding diversity of *perspective* and diversity of *approach* is key.

A cautionary tale

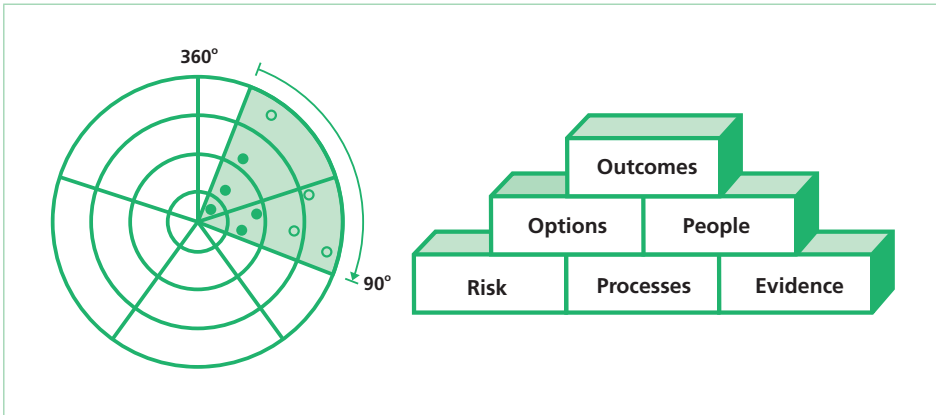
Before we discuss these elements, let us share one of our early missteps, which taught us an important lesson about the role of perspective and approach in team composition. In 2011, the CEO of a business division of a global commodities company asked us to help develop a three-year talent strategy. Having undertaken some preliminary data analysis, we brought together a working group comprising 15 of his employees to discuss, debate and make recommendations for change. These 15 individuals were handpicked on the basis that they had each expressed an interest in developing the strategy and, together, the group was diverse in terms of its racial/cultural composition, female/male ratio and representation across the business. What could go wrong?

It transpired that most of the team members had a low level of knowledge about how talent strategies work. Of course they had their own personal experiences, but only two of them had a detailed knowledge of recruitment, deployment, development, performance management, promotion and termination. And the capacity for the group to ‘think differently’ could not make up for foundational knowledge gaps when it came to developing detailed ideas.

In hindsight it seems obvious. We had paid too much attention to diversity and insufficient attention to qualifying people’s knowledge and capability to answer the question. We may not have needed 100% of participants to know about human resources in detail, but 13% (2/15) was clearly a mistake. Our hunch is that the balance should have been more like 80% (12/15), with those extra three people providing more of a “user experience” lens on the discussion.

So our first hard lesson was this: paying attention to diversity of thinking is a plus factor and one to be considered *after* potential team members have demonstrated their capability in terms of domain knowledge, experience and competence.

Only then, once leaders are sure that potential team members have the right experience and expertise, should consideration be given to the concepts discussed in the next two chapters: how *diversity of perspective* gives a group the 360 degree circular sweep of a radar to gain the broadest possible view; and how *diversity of approach* gives a group multiple ‘building blocks’ or mental models to build an integrated solution to a problem (refer to Figure 1).

Figure 1: Visual representation of diversity of perspective and approach

1.1 Diversity of perspective and the radar model

We often hear people talking about diversity of thinking in terms of team members having diverse perspectives and, in combination, a breadth of perspective. This intuitive recognition of the link between diversity of thinking and perspective belies the challenge in achieving that goal. How so?

People's every day experiences suggest that individuals think differently to one another. Every time you proffer an opinion and it is countered by someone else, your belief in diversity of thinking is reinforced. But step back from the fray a little and ask yourself whether, in fact, those differences of opinion are more at the margins than the centre. The conclusions from the field of social psychology are that, by and large, points of view within an individual's range of contacts are likely to be more similar than fundamentally different. This similarity arises from two fundamental human biases:

1. **Similarity attraction bias** (or homophily) – people tend to 'lean in' and connect faster and firmer with those who feel similar ('birds of a feather' so to speak)¹⁸.

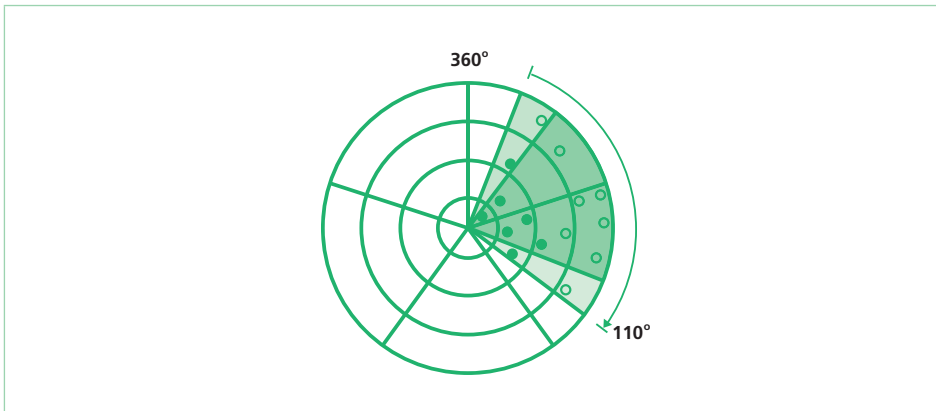
18 McPherson, M., Smith-Lovin L., and Cook, J. M., (2001) Birds of a feather: Homophily in social networks. *Annual Review Sociology* Vol 27 pp. 415-44.

2. **In-group bias** – people tend to associate with, and gain their social identity from, groups of people who are more alike than different. When one seeks advice, it's more often from these trusted networks of people who share common experiences, backgrounds and beliefs. It's like an echo chamber.

In other words, people build perspectives on the world through their personal experiences, and this is shaped and refined by reference to the cultural knowledge of micro and broader in-groups.

Visualise your cumulative experiences as an arc of perspective radiating outwards from yourself. Now, imagine you are standing next to someone in your in-group. Chances are they will share a similar arc of perspective. There may be differences of degree, but broadly your arcs are similar because your world views have been formed by similar, even shared, experiences, backgrounds and beliefs (refer to Figure 2).

Figure 2: Visual representation of the extended arc of perspective created by two in-group members



So to create diversity of perspective, individuals need to connect with people holding very different world views. Imagine the range of insight a group could have if its members were truly diverse and combined their perspectives. The group could, potentially, see a situation or problem broadly from 360 degrees rather

than bouncing forwards and backwards within a narrow arc of similarity. It seems obvious, the challenge is how, in practical terms, can such an outcome be achieved?

One simple but effective strategy is to amplify the weak signals of difference even within an in-group, for example those that are expressed by people on the fringes. These ‘fringe dwellers’ occupy a place in one’s own social network, as well as another very different network. Fringe dwellers’ ability to span both groups means that they can communicate across boundaries, transmitting and translating the perspectives of multiple networks. But there’s more, and perhaps even easier ways of creating diversity of perspective.

So begins the detective story and our search for rigorous research that identifies real and significant drivers of perspective. One can’t rely upon gut feel because everyone tends to ‘feel’ that their in-group members are really different from each other, whereas objectively an in-group is more similar than different. And adopting a scattergun approach to group selection (much like buying a lucky bag of mixed sweets) is inefficient as well as unreliable. If groups know how to broaden the sweep of their collective radar, they can intentionally and efficiently get closer to building teams with a comprehensive picture of an issue – the first element of any decision-making process (that is, defining the ‘situation’).

Our search for the factors that create diversity of perspective turned up many distractions and false leads. People hold numerous assumptions and stereotypes about individual and group differences, very little of which are supported by quality research. To be fair, the quest is challenging, as identifying group or even individual differences is difficult. People are the sum of multiple parts and cannot be easily separated into simple binary groups (female/male or engineer/lawyer), as if falling on one side of that dimension explains all there is to know about them, or at least what is critical to understanding their world view.

Nevertheless, current research reveals three significant aspects of visible diversity that influence diversity of thinking: race (or culture)¹⁹, gender²⁰, functional role/

19 We use the terms “race”, “culture”, “ethnicity” and “nationality” interchangeably and with a lack of precision for two primary reasons. Firstly, these terms are used interchangeably in common parlance and in academic studies. Secondly, our goal is not one which requires technical precision to determine if one’s visible diversity is driven by one’s country of birth, citizenship, cultural affiliation, racial heritage and so forth. Our goal is to talk about the cluster as a whole.

20 We use the term “gender” for its commonly accepted meaning: to refer to men and women. Technically “gender” refers to the socialised differences between men and women, whereas it is the term “sex” that refers to being a man or woman.

educational discipline. These factors don't *always* influence perspective, and not in the simplistic way one might assume, but creating groups with an eye to these three features and knowing how they operate, can increase the likelihood of perspective diversity within the group.

In this chapter we consider these factors in detail, starting with race, moving to gender and finishing with function and education. To some degree, our trajectory follows a curve of escalating impact of these factors on one's individual perspective. This is because the impact of race and gender socialisations are more malleable, whereas perspectives founded in functional roles and education seem to have the most durable and consistent impact on an individual's perspective. Put simply, everyone is highly influenced by their context: change the context and people start to change their perspective, but some aspects take longer to change than others. What is more enduring – and much more intriguing – is the impact of *others'* visible diversity on stimulating diversity of thinking in groups.

Race: curiosity and attention

There's no doubt that racially/culturally diverse groups will generate a broader read of the environment (and therefore the problem they are trying to resolve), than one generated by a racially/culturally homogenous group. Even more critically, that breadth of perspective will have a positive effect on a group's decisions.

These conclusions are supported by compelling research showing that the racial diversity of top teams can measurably enhance company performance. For example, in 2013 Professors Bo and Sabina Nielsen (both teaching at Copenhagen Business School and the University of Technology, Sydney) published their research comparing the performance of 146 Swiss listed companies, across 32 industries, between 2001 and 2008²¹. They examined Return on Assets (ROA) – as a measure of financial performance – and the characteristics of top teams, including nationality diversity (Swiss companies are required to disclose in their annual reports the nationality of their top executives), functional diversity (that is, the roles held by executives) and tenure. Lest there be any question as to the chain of causation, the data on composition was collected at the beginning of the year, and the data on ROA at

21 Nielsen, B. B., and Nielsen S., (2013) Top management team nationality diversity and firm performance: A multi-level study. *Strategic Management Journal* Vol 34(3) pp. 373-382.

the end of the financial year. This helped the Niensens to identify if, and what type of, demographics influenced ROA.

The Niensens found that not all diversity makes a positive difference to company performance, but that nationality and functional diversity definitely did. They discovered that companies with a positive ROA were significantly more likely to have a top team that was racially diverse and with executives performing diverse functions. Other aspects of team diversity (age, education, industry and international experience) did not have a positive impact on ROA once nationality diversity was taken into account. Further, the positive impact of nationality diversity became stronger over time. As racially-diverse teams worked together for longer, company performance also increased – presumably because longer-tenured groups had worked through cultural misunderstandings. Finally, the Niensens found that the positive effect of top team nationality diversity was amplified in companies with greater levels of internationalisation and those with higher industry growth, meaning that a racially diverse top team is particularly critical for multi-national operations and conditions of complexity and change.

Coming at this from another angle, and yet reaching a similar conclusion about the productive value of racial diversity, are a number of large scale studies examining the quality/novelty of academic research papers and the ethnicity profile of the co-authors. These studies use an article's publication in a high prestige journal as one indicator of its value, as well as the number of times it has been cited by other researchers. They assess ethnicity via the authors' surnames or their country location.

By way of example, and to give you a sense of scale and therefore the reliability of their findings, Harvard University Professors Richard Freeman and Wei Huang²² reviewed the performance of 1.5 million scientific articles published over a 13 year period. University of Chicago Professor Matthew Smith and his colleagues²³ reviewed 1.25 million academic papers published across 8 disciplines over a 17 year period. And their intriguing conclusions? When co-researchers are of

22 Freeman, R. B., and Huang, W., (2015) Collaborating with people like me: Ethnic co-authorship within the US. *Journal of Labor Economics* Vol 33(3) pp. S289-S318.

23 Smith, M. J., Weinberger, C., Bruna, E. M., and Allesina, S., (2014) The scientific impact of nations: Journal placement and citation performance. *PLOS One*, 8 October 2014, <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0109195> retrieved 28 September 2015.

diverse ethnicity, their papers outperform those authored by researchers who are racially homogeneous, in terms of journal placement and citations.

Thinking about the implications for boards for a moment, while the Niensens' study looked at executive team diversity and Freeman, Huang, Smith and colleagues looked at research teams, it seems only logical that their findings would be applicable to the discussions, decisions and papers developed by boards. Indeed, for boards responsible for multi-national companies, surely their relevance would be a matter of common sense? But what about boards which are locally domiciled? Does racial diversity add value in that context?

A curiosity trigger

Both sets of studies hold a clue. Firstly, the Nielsen study found strong evidence to support the view that diversity of nationality improves top team, and therefore organisational, performance – but not just for multi-national companies. Secondly, while Smith and his colleagues analysed research papers co-written by authors in *different* countries, Freeman and Huang only reviewed papers written by authors *living in the USA*. Yet racial diversity had a demonstrable effect on group performance irrespective of whether the team was operating globally or locally. Why would that be so? How does racial diversity influence performance?

Asked to theorise about this issue, people often offer the view that racial minorities bring important new perspectives to group decision-making. That's probably true, but in fact the much stronger reason that racial diversity enables better decision-making is far more basic: including racial minorities in a group *causes those in the visible majority to do a better job*.

Now the story gets interesting.

More clues about the impact of visible diversity on group performance come from a study by Professor Sam Sommers from the Department of Psychology of Tufts University in the USA²⁴. Sommers has long been interested in the relationship between group diversity and decision-making, and not just decision-making in an abstract way, but how diversity influences *significant* real world decisions. High up on the 'significance' rating scale are decisions made by juries in criminal trials, especially

²⁴ Sommers, S. R., (2006) On racial diversity and group decision-making: Identifying multiple effects of racial composition on jury deliberations. *Journal of Personality and Social Psychology* Vol 90(4) pp. 597-612.

in the USA, where a decision about an accused's guilt means the difference between freedom, incarceration and capital punishment. So it's not surprising that Sommers chose this decision-making scenario for his PhD research²⁵. In a nutshell, Sommers wanted to know: does diversity influence a jury's decision-making processes and ultimate judgment and, if so, how?

To answer these questions, Sommers set up an experiment with jurors, selected from the citizens of Washentaw County Michigan who were eligible for jury duty, and conducted a mock criminal trial. The mock jurors' task was to decide, beyond reasonable doubt, whether an accused was guilty of sexual assault. As with any criminal trial, the jurors heard evidence from prosecution witnesses (in this case there were seven, including the two alleged victims), and defence witnesses (in this case there were three). In Sommers' experiment, there was no question that the victims had been assaulted, the only issue in dispute was whether the accused was the assailant. The victims agreed that they couldn't identify their assailant's face, but one victim could identify a scar similar to one on the accused's torso. There were crime scene samples of hair and semen, but the DNA analysis could only say it was consistent with the accused's DNA profile, not that it was definitively his. It was a classic question of identification.

So, the jury's decision was one with high stakes, conflict and complexity, and one where diversity of thinking could increase the chances of the 'right' decision being made. But how does one test that? How does one hold almost everything stable and vary a diversity factor? How could Sommers pinpoint whether diversity influenced a group's thinking process when so much is possible? Sommers came up with an ingenious experimental design. Firstly, he decided to observe not just one jury, but 29 juries (each with six people). This meant that he could watch the behaviours of the 174 jurors, and 29 juries as groups, studying their decision-making process and their decision (the output). Secondly, he controlled the information (the input) each jury considered. Unlike a normal jury trial, in which attorneys and witnesses might say slightly different things in the heat of the moment, Sommers videoed the 30 minute trial, and required each jury to listen to exactly the same

25 See also a follow up study Sommers, S. R., Warp, L. S., and Mahoney, C. C., (2008) Cognitive effects of racial diversity: White individuals' information processing in heterogeneous groups. *Journal of Experimental Social Psychology* Vol 44(4) pp. 1129-1136.

evidence before retiring for their jury deliberations. The only thing that changed was the composition of the six person mock jury, and that composition changed on only one dimension, meaning that on every other dimension the groups were the same. Let's call them Type A and Type B juries.

It worked like this: after viewing the video, each jury was given 60 minutes to reach a decision. Their deliberations were recorded along with their verdict. You can see Sommers' observations in the call out box below.

Type A Juries	Type B Juries
50 minutes deliberation	38 minutes deliberation
30 facts discussed	25 facts discussed
4 factual inaccuracies	8 factual inaccuracies
1 uncorrected error	2 uncorrected errors
2 missing evidence noted	1 missing evidence noted

Type A juries took longer making their decision than Type B juries and their deliberations were more precise and thoughtful. They discussed more of the 46 major case facts, made fewer factual mistakes, left fewer inaccurate statements uncorrected and noticed more missing evidence. Type B juries were faster and sloppier. Those findings are deeply concerning. Even more so when we tell you, as perhaps you already guessed, that the flawed information processing behaviours exhibited by Type B juries increased the chances of them making a flawed decision. In particular, while 28 of the 29 juries either acquitted the accused or delivered a hung verdict (meaning that they were unable to make a unanimous decision that the accused, 'beyond reasonable doubt', assaulted the victims), *only* a Type B jury delivered a guilty verdict. A flawed decision? How else to describe a verdict that sits at odds with 97% of the juries, who looked at the same evidence?

So what triggered the difference between the conversation patterns in the Type A and Type B juries, which ultimately caused one of the Type B juries to make the wrong decision? Visible diversity in the juries' composition: Type A juries comprised racially diverse members who were African American *and* white; whereas, Type B juries were racially homogenous, comprising *all* white participants.

If that was what you were expecting, wait for the kicker. Yes, racial diversity – as

most would assume – made the jury more effective. But the question is: why? Was it because the African American jurors raised new and different points of view? Yes they did, but that was only part of their impact. Sommers' insightful finding was that the larger impact of the African American jurors was more *indirect*. Their presence changed the behaviours and comments of the white jurors. It was the white jurors who, when in a diverse juror group, raised more case facts and made fewer inaccurate statements.

Sommers' study is intriguing because it points to the importance of demographic diversity in groups, but alludes to a complex relationship by which visible diversity can trigger positive behaviours of listening, questioning and diligent thinking in the visibly dominant majority.

Sommers is not the only one to have reached this conclusion. Professor Antonio from the School of Education at Stanford University, and his colleagues from four other universities, looked at the impact of racial diversity on the conversations of college students²⁶. In their study, they allocated 357 white students to small (same sex) groups, each with three participants and one research collaborator. Each group was asked to discuss a set topic, either child labour practices or the death penalty, but before the discussion took place, each student was asked to write a short essay expressing their point of view. That task was repeated after the discussion so that researchers could determine the impact of the group discussion on the student's thinking.

Along with writing essays, the students were asked to rate the influence of the other group members on their own thinking, including the influence of the research collaborator. What the students didn't know was that the research collaborator followed the same script for each discussion, the only thing that varied was their race: some collaborators were African American and some were white. Just like Sommers, Antonio and his colleagues found that race acted as a trigger. In this case, the white students thought the contributions of the African American collaborators were more 'novel' and 'interesting'.

As a consequence, white students pricked up their ears and attended more closely when opinions were expressed by someone visibly diverse. Not only did they listen,

26 Antonio, A. L., Chang, M. J., Hakuta, K., Kenny, D. A., Levin, S., and Millem, J. F., (2004) Effects of racial diversity on complex thinking in college students. *Psychological Science* Vol 15(8) pp. 507-510.

but they thought more deeply about the African American collaborator's point of view and demonstrated more complex thinking in their post-discussion essays. Astounding. The content expressed by the African American and white collaborators was the same, but white students expected a different opinion and that's what they heard.

Are these two studies enough for us to definitively conclude that racial diversity helps trigger more rigorous thinking? If they are, then the implications are profound. If you are not yet persuaded, then perhaps one more study will help cement this conclusion.

Wall Street, the epicentre of the 2007–2008 Global Financial Crisis (GFC), is well known for its overall racial homogeneity. Could the GFC have been prevented, or at least curtailed, if traders had been more ethnically diverse? In 2014 Professor Sheen Levine from Columbia University, along with his colleagues from the USA, Germany and the UK, tested that question by manipulating the racial composition of markets (that is, small groups of traders) on their trading behaviours and stock prices.²⁷ Levine and his colleagues hypothesised that if traders operated in an ethnically/racially diverse group, they would scrutinise others' actions more closely and thus make fewer trading errors. Conversely, Levine and his colleagues hypothesised that, in a racially homogenous group, traders would have a higher level of trust and confidence in each other, assume others' behaviours were reasonable and therefore imitate each other (for example, buy or sell). Moreover, they predicted that price bubbles, caused by traders' collective pricing errors and a mismatch between the true value of an asset and market prices, would be thwarted by diversity.

To test their theory, Levine and colleagues, invited skilled traders to buy and sell shares among themselves in a trade simulation. Notably, given that Sommers' and Antonio's previous research focused on differences between whites and African Americans and thus raises a question as to whether the results are unique to the USA, Levine's research was conducted in both Singapore and Texas. Small groups of traders (six per group) were randomly assigned to test conditions in which they were ethnically similar (for example, whites trading in Texas, or Chinese trading in Singapore) or ethnically diverse (for example, whites, African Americans and Latinos trading in Texas, or Malays, Indians and Chinese trading in Singapore).

²⁷ Levine, S. S., Apfelbaum, E. P., Bernard, M., Bartelt, V. L., Zajac, E. J. and Stark, D., (2014) Ethnic diversity deflates price bubbles. *PNAS Early edition*, <http://www.pnas.org/content/111/52/18524> retrieved 19 November 2014.

Prior to trade commencing, traders could see and talk to their counterparts and assess the ethnic diversity/similarity of their trading group. Traders were then presented with simple market scenarios and asked to buy or sell stock over 10 trading periods, each lasting two minutes. Just like in the real world, participants could observe trading activity on their networked computer screens, but they didn't know the individual identity of each trader. After 2,022 market transactions by 180 individual traders in 30 market simulations, the researchers unequivocally concluded that “pricing errors – mostly overpricing – (were) significantly higher in homogenous markets”²⁸ and homogenous markets erred collectively.

To place a number on this effect, taking the data from all of the market simulations, the researchers found that accuracy was 58% higher in diverse markets than homogenous markets. More conservatively, and accounting for location specific effects (the Southeast Asian traders were more financially literate than the American traders), the researchers concluded that “diversity improves pricing accuracy by 29.7 percentage points”.²⁹

This means that the intuitive figure (of around 20%) which the Chief of Army, Lieutenant General Angus Campbell placed on the value of diversity of thinking was pretty close to the mark. Certainly, whether the true value is 20% or 30% (as identified by Levine), it's not a figure to be ignored in a business setting – or in military conflict.

Again, racial diversity clearly made a difference. But what drove the traders' behaviour? It seems that offers to trade were much more likely to be accepted in homogenous markets and much less likely in diverse markets, presumably because of a healthy level of scepticism about others, rather than an over-inflated sense of confidence based on visible similarity. Additionally, trading prices were much more conservative, so the potential peaks and troughs were quite shallow in diverse markets, so if prices did fall, the impact was not as severe.

Could it be, however, that once traders became more familiar with each other, the effect of racial diversity would diminish? Apparently not. Just as for the Niensens' study, ethnically diverse groups performed even better over time, increasing their accuracy levels by 21% (from a starting position of just over 50% accuracy), while

28 Levine, S. S., *et al* (2014) *ibid* p. SI17.

29 Levine, S. S., *et al* (2014) *ibid* p. SI13.

the homogenous groups diminished in their accuracy levels by 31% (from a starting position of 60% accuracy). By the end of the ten trades, the diverse markets traded accurately about 65% of the time. In contrast, the homogenous markets traded accurately about 40% of the time.

Putting these studies together: Sommers' of the jury, Antonio's of the students and Levine's of the traders, we can say confidently that racial diversity helps elicit more diverse perspectives from a group and stimulates teams to engage in more thorough decision-making processes and thus make smarter decisions.

Given that the findings of these three studies all occurred in experimental conditions, we wanted to explore how their insights might apply in real team settings. In particular, we were curious about whether the visible trigger of racial diversity adds a note of friction and disrupts the mental comfort of an homogenous group. In other words, how does it feel in practice?

We pursued this line of enquiry by conducting a 360 degree review of one of Deloitte's multi-national client engagement teams, comprised of Australian, American, German, Japanese and Spanish nationals³⁰. This seven-person team was co-located offsite, that is away from the Deloitte head office, for a period of three months, providing a hothouse for team interactions. The review comprised interviews with all team members, the team leader and the client about their experiences working in a culturally diverse team.

Our review yielded four insights:

1. Cultural and/or personality diversity is in the eye of the beholder and visible diversity does provide a spark of curiosity
2. Cultural diversity can positively contribute to another person's personal and professional enjoyment of a project, as well as the project's outcome
3. Cultural diversity can indirectly encourage project members to rethink their usual working habits and expectations, behave with fewer assumptions about the 'right' way to address an issue and promote linguistic clarity
4. The dominance of cultural diversity reduces the bias to interact with people who have common characteristics, creating a unique team bond.

³⁰ Bourke, J., and Isarria, M., (2012) Working in multi-cultural teams: A case study, Deloitte Australia, <http://www2.deloitte.com/au/en/pages/human-capital/articles/working-multicultural-teams.html> retrieved 26 June 2015.

As to the first insight, we found that team members held a range of views as to whether the differences they observed between people were driven by personality or nationality, or a combination of both. Irrespective of the weighting, racial diversity clearly provided a point of intrigue. Moreover, just as the other researchers found, racial diversity (signalled by some visible differences, but more clearly by strong accents: Japanese, Spanish, American, German and Australian) triggered different behaviours, promoting cohesion and improved information sharing, and therefore decision-making. How so?

Firstly, nationality differences sparked ‘cultural curiosity’ leading team members to ask exploratory questions of each other, which provided an unexpected point of positivity. During the interviews, team members talked about their *professional* enjoyment of the project, observing that “*the diversity of the group definitely enhanced the experience (for me)*” and that “*I was constantly challenged to think outside of my normal mode of analysis*”. Speaking of their *personal* enjoyment of working in a diverse team, one team member commented that “*finding out about the cultural backgrounds of team members was an important part of building relationships with them*”, while another spoke of valuable self-development: “*I truly feel as though I’ve grown as an individual through this project*”.

Secondly, the cultural diversity of the team indirectly encouraged team members to become more conscious of their *own* working habits and assumptions. For example, one team member observed two different people-management styles in co-workers: a single-minded focus on getting required information from the business; and a focus on building social relationships/friendships to socially co-opt the business into volunteering the required information. This person concluded that both styles were more effective than her own ‘softly-softly’ approach to cajoling the required information from the business.

Thirdly, and most significantly, linguistic diversity enhanced team communication. To set the scene, although all of the team members spoke (business level) English, for four of the seven, English was not their first language. It might be assumed that in a time-pressured environment, speed of communication will be enhanced by commonality of a first language, and therefore the team’s linguistic diversity would have caused time delays and miscommunication. In fact, our research found that the quality of communication was improved by linguistic diversity. In particular, while

accents and turns-of-phrase sometimes created short-term barriers to communication, the language differences provided a strong catalyst for clearer communication by all team members. Team members observed that they took *“more time to make sure that things were explained clearly”* and that this reduced miscommunication, even between native English speakers. One respondent, self-admittedly inclined to be more assertive in meetings, remarked that he had *“learned to listen to my colleagues and to appreciate their contributions”*. Further, linguistic diversity provided an unexpected point of connection between team members, as explained by one team member *“although there were times when language or pronunciation differences presented themselves, the team ended up laughing over the subtle misunderstandings, and bonding even more in the long run as a result of them”*.

Finally, one recurring theme in the interviews was the sense that, *“being from diverse backgrounds and countries of origin (meant that) we felt that being ‘different’ made us the same in many ways”* and that *“as everyone in the team was from a different country there was not an accepted cultural norm within the group”*. The ‘levelling-effect’ of this diversity seemed to cohere the team around a genuine belief that their sum could be better than their individual parts, with one team member commenting that the diversity *“made me feel more confident about our likelihood of success, and that any challenge which might arise would be overcome”*. The diversity of the team also seemed to have a galvanising effect on its members, resulting in one person describing how *“the fact that we all came from different countries... made us connect in a very special way. It felt like we became like a little ‘family’ and provided additional support to one another... personally, I felt very close to my fellow team members and have established some great relationships”*.

Our field study adds significant colour to the theoretical research. In particular, it seems that in the real world, people view others much more holistically than simply in terms of racial diversity. Having said that, this field study supports and extends the experimental research findings by demonstrating the ways in which racial diversity can prompt people to assume less, and adapt more, for example by taking the time to ensure clarity of communication. Further, and in line with Antonio’s finding of novelty, racial diversity triggered a sense of curiosity in others, which generated exploratory questioning and feelings of mutual interest, thus enhancing team cohesion and information sharing.

But what about the ultimate question: did the team's cultural diversity result in improved project outcomes? Certainly the project was delivered on time and on budget, but that is only to be expected. Just as cultural diversity might be in the eye of the beholder, in the real world, project performance is in the eye of the client. In this case, her view was that, "*the team has been more productive and less stressed – when I compare them to employees in other places. I think they have worked longer hours because they are valued and appreciated. They have given 150% and have stretched themselves. Plus they have been upfront about issues – so open [in their] channels of communication*".

Analytic and holistic thinking

The above experimental and field research reveals that the visible diversity of a group enables diversity of perspective. This is not so much because those who are visibly diverse bring unique perspectives to the group (although there is some element of that as discussed further below), but because visible diversity causes group members to behave more deliberately and even cautiously, especially in relation to communication and complex thinking. When team members talk with each other to discuss their ideas, these behaviours enable the different views of group members to come forth and be debated, thus expanding the group's perspective. Even when the team members are unable to communicate (as with the traders), visible diversity prompts more circumspect decisions.

There may be an additional reason why group racial diversity can support better decision-making: the idea that cultural backgrounds may actually cause individuals to *perceive* their environments differently – to literally notice different stimuli or patterns. This is hard to prove, because of the threshold issue of defining where cultural boundaries start and finish: countries, regions or ethnic groups? If you are interested in exploring that threshold issue, we suggest you read works by Professor Hofstede (University of Maastricht) and Fons Trompenaars. Sidestepping somewhat, we looked for studies that took broad brush strokes to cultural differences, and found a series that helped us understand how Westerners and Easterners might have different perspectives.

To be more precise, we found studies that compared the responses of East Asian citizens (for example, from Japan, Taiwan and China) with Westerners (namely

Americans) on a range of different perceptual tests. This, of course, begs the question: how do you study ‘perceptual’ differences? These studies used a range of methods. Some asked research participants to look at pictures or videos and report on what they ‘saw’, with the researchers comparing what people attended to, for example the background, foreground, whole picture or relationships between items. Others asked people to group words together and looked for the logic behind the pairings, for example ‘banana and monkey’ versus ‘panda and monkey’. In this word example, the researchers thought that a pairing of banana and monkey might indicate a person saw items in terms of the relationships between things (that is, the monkey eats the banana) whereas a person who grouped a monkey and a panda together sees things in terms of categories (that is, both monkeys and pandas are animals).

Although the results were not as black and white as the researchers hypothesised, there *is* something there about race and perspective, and the way it falls is fascinating. Let’s take the video study conducted by Professors Masuda (University of Alberta) and Nisbett (University of Michigan) which compared the responses of 72 university students, 36 studying at the University of Michigan and 41 studying at Kyoto University.³¹ Each student watched ten short videos of underwater scenes with fish, weeds, sand and bubbles. And then they watched them again, because this was not a memory test, but an attention test. Masuda and Nisbett asked each student, “What did you *see* in the animation?” Responses were coded according to four categories: background, inert objects, active objects and focal fish. Both the Japanese students and the American students were more likely to focus on the focal fish than anything else. We imagine all of the students telling the researchers: “well, there was this BIG fish, and it was really colourful, red and green...”: turns out everyone is a sucker for big shiny things, whatever country they grew up in.

Hypothesising that the item people talk about first is the item people think is the most important, subtle racial differences emerged when the researchers went back and looked at the *first* item each person described. These differences became even clearer when the researchers realised that the four categories of items could be separated into two higher order groups, namely ‘salient objects’ such as the focal fish, and the ‘field’ which included the background, weeds and water. Using this

31 Masuda, T., and Nisbett, R. E., (2001) Attending holistically versus analytically: Comparing the context sensitivity of Japanese and Americans. *Journal of Personality and Social Psychology* Vol 81(5) pp. 922-934.

lens of analysis, Masuda and Nisbett found the Americans were more likely to mention the salient objects first, and the Japanese were more likely to mention the field. We imagine the Japanese students painting a picture of the context and space, telling the researchers: “there was a fish tank, with weeds, rocks and bubbles, and near the rocks was this BIG fish...”, whereas the American students stayed with: “well, there was this BIG fish, and it was in a fish tank with...”.

Just to slow this down to get the full impact, the researchers had found a racial fault line which had, literally, influenced how the Americans and Japanese were seeing the picture: Americans were more likely to concentrate on the key item within the frame (the fish), whereas the Japanese were more likely to pay attention to the relationships between the key item and its context.

Although we are only talking about a tendency, the fish tank study is not an isolated example, meaning there’s a strength to racial differences which applies across settings. In particular, a similar finding occurred in the panda/banana language study, although this is where some complexity creeps in. In this study Nisbett, together with Professor Ji (Queens University) and Dr Zhiyong (Beijing University) asked 119 Chinese students studying at Beijing University and 174 students studying at Michigan University (comprising 131 Chinese students and 43 European Americans) to read 20 sets of three words, circle the two that ‘go together’ and explain why.³² The responses were then coded in terms of whether students grouped items by relationship (for example, Shampoo and Hair) or category (for example, Shampoo and Conditioner). Consistent with Nisbett’s fish tank study, the students from Mainland China (who were studying in China) were more likely to group the words by *relationship*, whereas the European Americans were more likely to group items by *category*. This lines up with the Japanese students who tended to look more at the relationships between objects in the fish tank, and the Americans who tended to separate items into component parts (that is, “this fish tank has weeds, rocks and fish...”) and then identify the dominant part (that is, “and the most important feature, because it is big and shiny, is the fish”).

32 Ji, L., Zhang, Z., and Nisbett, R. E., (2004) Is it culture or is it language? Examination of language effects in cross-cultural research on categorisation. *Journal of Personality and Social Psychology* Vol 87(1) pp. 57-65.

Beyond fish and pandas

Thinking about this from a business context, differentiating between analytic and holistic thinking helps people understand how individuals look at the same issue, but see different aspects, and place different weight on their importance. An analytic thinker is more likely to break down an issue into its component parts, apply the 80/20 rule to identify the part that is playing a dominant role, and focus their attention on understanding that feature. An holistic thinker looks at the system and how the pieces hang together, searching for relationships (interdependencies) to understand if one piece moves how it will influence another piece. Both are critical for a broad perspective.

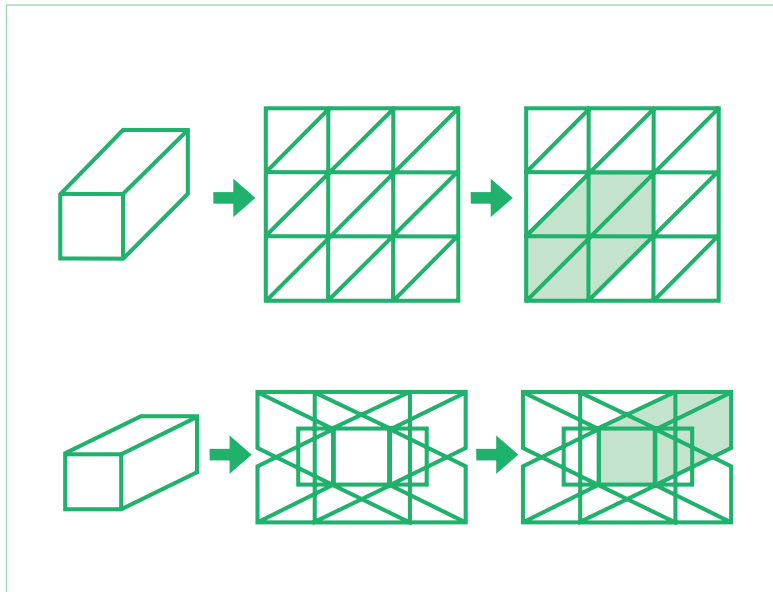
From these two studies you might assume that we have already answered the exam question, “Yes, there is a difference between the way people ‘see’ a situation, and that difference is influenced by race/culture”. Before you get too excited, you need to know that a surprise occurred in the panda study when the researchers manipulated the language. In particular, when they tested the Mainland Chinese students (living in China) *in English*, the bias to pair words according to relationships dropped by about 50%. Moreover when they tested the Mainland Chinese and Taiwanese students (living in the USA) *in English*, there was no strong preference for relationship *or* category grouping. A cross-cultural experience, reinforced by use of a second language, apparently muted any perceptual preference. As we said in the introduction to this chapter, “everyone is highly influenced by their context, change the context and people start to change their perspective”. In this study, at one end of the scale were the Mainland Chinese students, living in China, who paired words according to their relationships and at the other end of the spectrum were European Americans who paired words according to categories, and in the middle were Chinese students living in the USA who could be relationship oriented or agnostic (that is, not lean in one direction or the other) depending on the conditions.

What was going on? The fish tank study and the panda/banana language study demonstrated that the East Asian research participants, who were living in their home countries and using the Japanese or Chinese language, were more likely to take an holistic perspective, looking at the whole picture and the relationships

between items. In contrast, the American research participants, living in the USA and using English, were more likely to take an analytical view and concentrate on features.

Cognitive psychologists distinguish between these views in terms of people being ‘field dependent’ (FD) or being ‘field independent’ (FDI). East Asians were being more sensitive to patterns of information and relationships (FD), whereas Americans were more likely to separate features from each other and their surroundings, and focus attention on those deemed most important (FDI). A person’s FD/FDI can be assessed quite easily using, for example, the Group Embedded Figures Test. This test measures a person’s ability to identify a simple figure (for example a line drawing of a cube) within a complex figure (for example a picture which has multiple shadings, shapes and lines (refer to Figure 3)). The lower the score – the more field dependent; the higher the score – the more field independent.

Figure 3:
Examples
of Group
Embedded
Figures Test
items



Since the 1950s, FD/FDI has been one of the most highly researched areas of diversity of thinking. There are hundreds of studies on FD/FDI – an accumulation of knowledge that gives us confidence in the construct (analytic versus holistic), measure (test reliability) and ability to identify individual and group differences. For our

purposes, we can use these studies to make sense of the fish tank and panda/banana findings, and the surprise results for those people who crossed a cultural boundary.

Our navigation guide to FD/FDI is Professor Zhang (University of Hong Kong) who has devoted her career to researching cognitive styles and, for the last few years, reviewing 40+ years of research. Her aim has been to untangle the complex picture of FD/FDI differences and similarities among people, including differences with a race/nationality element. Fortunately for us, in 2013 Zhang published her epic review and discussed in detail those studies comparing people from different countries, nationality groups within countries (for example, African-American students compared with their American Caucasian peers), and children and adults within a single nationality group (for example, second and third generation Mexican-American students)³³.

When Zhang looked across the history of this body of research, she noticed that early researchers hypothesised that citizens from more individualistic and less hierarchical cultures (for example, Canada, the United Kingdom and the United States) were more likely to view situations analytically (FDI), while citizens from collectivist and hierarchical cultures (Japan and China) were more likely to take a more holistic and relationship frame (FD). The early researchers also hypothesised that FDI is associated with economic development, that is, the more economically developed a country (the less interdependent the citizens), the more they would see things independently and less holistically.

These are broad brush strokes, but the hypotheses seemed to hold true, especially for the earlier studies from the 1960s and 1970s. This is not to say the theories always played out as expected; for example, Zhang identified studies in Africa in which some tribal groups (such as the Mende in Sierra Leone) were more field independent and some less (the Temne also in Sierra Leone). However, the early research had a level of predictability to its results.

Perplexingly, Zhang observed that more recent studies on FD/FDI seem to show greater variation between findings and even changes over time³⁴. For example, a review of studies from the 1980s to 1990s found that school students from Chinese and Japanese cultures demonstrated greater field independence and students from

³³ Zhang, L., (2013) *The malleability of intellectual styles*, Cambridge University Press, pp. 93-102.

³⁴ Zhang, L., (2013) *ibid* p. 101.

Canada, the UK and the USA more field dependence. Those findings disrupt the idea that perceptual differences, or diversity of thinking, is a categorical quality in terms of racial determination. It turns out that racial differences, such as holistic and analytical perception, are more in the nature of a tendency than a definitive trait. In fact, as we hinted when discussing the panda/banana language study, they are malleable and influenced by context.

Just to break that down a little further, the panda/banana study showed that context includes language as well as exposure to new norms and behaviours through a cross-cultural experience. In terms of the more recent studies, that context now includes globalisation, the use of English as a dominant business language and the universal dissemination of information through the web. Certainly, that might help to explain the later, contradictory findings. But there's another influence on holistic and analytical thinking that also holds explanatory power: physical context. This insight comes from a study Nisbett conducted with his co-researcher from the fish tank study, Masuda, led by Professor Miyamoto (University of Michigan)³⁵.

To quickly recap, Nisbett and Masuda had already established for themselves that there were general differences in FD/FDI between university students living and studying in Japan compared with students living and working in the USA. What intrigued them now, along with Miyamoto, was: why? What was creating these broad differences and, even more critically, could they use (read: control) this driver to influence people to see the world differently? This is where Zhang's insights on the malleability of analytic/holistic thinking and Nisbett and his colleagues come together, raising the question: can organisations learn what drives FD/FDI so that they can purposefully create FD/FDI tendencies and thus help individuals and groups to see *both* perspectives at will? Put simply: can people learn to be both analytic and holistic thinkers? Yes.

Miyamoto, Nisbett and Masuda thought about the role of language and socialisation, and then asked themselves a ground breaking question: could it be that the physical environment plays a critical role as well? They hypothesised that because the physical environment in Japan is, in the main, more complex and

35 Miyamoto, Y., Nisbett, R. E., and Masuda, T., (2006) Culture and the physical environment. Holistic versus analytic perceptual affordances. *Psychological Science* Vol 17(2) pp. 112-119.

cluttered with detail than the American environment, this might cause Japanese citizens to stand back and look at the picture as a whole and the relationships between parts of the picture, rather than focusing on the more singular stand out items. In a three-part study, Miyamoto, Nisbett and Masuda asked students (East Asian international students and Americans, both studying in the USA) to assess photos of streetscapes in Japan and the USA in terms of their visual complexity, for example “To what degree is the scene either chaotic or organised?” and “How ambiguous is the boundary of each object?” That first experiment provided them with a subjective baseline, and even though there were recognisable levels within the American environment (with New York being rated as more visually complex than smaller cities), when comparing like for like (for example New York versus Tokyo), the Japanese scenes were, as predicted, rated as more complex than the American.

That result might be surprising to you. Certainly we would have rated both New York (think Times Square) and Tokyo (think Ginza) as both visually cluttered. Indeed, there must have been some level of doubt in the minds of Miyamoto, Nisbett and Masuda as well, because they undertook a second level of analysis. In particular, they analysed the Japanese and American photos to see if, objectively, the scenes were significantly different. To do this, they counted the number of objects, literally, by looking at particles with a minimum of 50 to 100 pixels. The results demonstrated, as the research study participants had intuited, that the Japanese scenes contained more objects than the American scenes.

The researchers were now set to do their real experiments on manipulating visual cues. If, as they expected, FD/FDI is driven by exposure to the physical environment, then they thought it would be possible to influence FD/FDI scores by exposing people to different physical environments. Meaning that if American students were shown more complex pictures of Japan, over time they would develop their holistic visual muscle and be able to see more of the context, just like their Japanese counterparts. Like Zhang, Miyamoto and her colleagues thought that diversity of thinking, in terms of perception, could be malleable.

In the final part of their study, their musical crescendo, the researchers showed American university students (studying in America) and Japanese university students (studying in Japan) 95 of the 492 photos tested in the first and second study. The

students were shown a pair of vignettes, one after the other, and asked to identify changes between one scene and the next. Each scene included a few items in the foreground (the focal items), such as a truck, and a few background items, such as buildings and sky. In each scene, something was changed in terms of the focal object (for example, the driver in the truck) and the context (for example, the height of a pole).

Consistent with previous research that American students were more likely to attend to focal objects than context, the American students detected fewer changes to context than the Japanese students. Nothing new there, but here is the fascinating part: the researchers noticed that the Americans thought the scenes were more complex than the Japanese, meaning that the Japanese, through familiarity, had become more comfortable with visual complexity so that it didn't feel as complex any more. That's the first thing. The second thing is that when American students were asked specifically to look at changes to a scene which was visually complex (that is, the Japanese scenes), they noticed more changes to context than when they looked at American scenes (less visually complex). It was as if their visual brain muscle was activated by complexity, that is, the American students looked harder and saw more context, not just the focal objects which they were already adept at. And the more people exercise that visual muscle, the easier it gets.

Influencing analytic and holistic thinking through workplace design?

Could a clean desk policy, furniture uniformity, large scaling and colour simplicity shape and reinforce analytical thinking? An holistic thinker would say "yes" because the visual environment is part of a whole system which also includes language and socialisation.

Can this insight be used to deliberately create environments to stimulate holistic thinking (with visual complexity) and analytic (with visual simplicity)?

In summary, supporting Zhang with one more piece of evidence, Miyamoto and her colleagues had found that while people might have individual tendencies to see either the field or the object, a tendency which is influenced by visual stimuli and language, they can grow the capability to see both perspectives. Putting this finding to practical use, workplace designers could develop multiple spaces, some

with visual simplicity and some with complexity, to allow workers to use visual cues to stimulate analytic and holistic thinking. Moreover, the language used by leaders and teams during team discussions could also help team members to direct their attention to both the context and the detail.

Language matters. Using the specific language of 'context' and 'detail' helps prompt holistic and analytic thinking respectively.

What does all of this mean? Firstly, and most importantly, these studies have helped to expose the different ways (holistically or analytically) in which people perceive a scenario. Clearly, both are important to ensure that the full picture is being appreciated, that is, seeing *both* 'the big picture' and important details. The issue for many people is that they are unclear about their tendency to be analytic or holistic, or think that they do both to the same extent, given that they understand the idea of the big picture as well as detail and critical analysis.

Certainly this was our experience when working with a small team recently and discussing FD/FDI. We gave each of the team members a page of six embedded figures and asked them to locate the individual shapes within the figures. Most of the group demonstrated a mix of analytic and holistic thinking, seeing some but not all of the figures, but there were also two very obvious ends of the spectrum. One of the most junior team members struggled to identify even one of the embedded figures, while at the other end of the spectrum the team leader identified all of the embedded figures, as well as a few extras that were not documented on the answers page.

What was most memorable about the experience was not that we had merely observed firsthand the FD/FDI spectrum, but the level of emotion attached to the exercise. The team leader told the group he was stunned and genuinely perplexed about the junior team member's score saying, "*I just can't believe that you can't see the figures*". His intent may have been benign, but it sounded like a judgment. The junior team member, on the cusp of tears, expressed her frustration, "*I really try to see the detail, but I just can't*". And that emotional content speaks volumes about a second insight regarding FD/FDI.

People tend to assess one way of thinking as more valuable than the other, with self-serving bias resulting in each person rating their own individual tendency more

highly. In practice, this might mean that people don't follow someone else's thinking and give it appropriate weight, or worse, behave disrespectfully and dismissively. Of course the most ideal outcome is to adopt a more open frame of mind, finding the delight of surprise ("How could I have missed that?") and experiencing the pleasure of combination. In this case, both the junior team member and the team leader could have learnt from each other. The team leader could have asked "What do you see?"

In essence, to make collective intelligence real, individuals need clarity on their *own* perspective ("What perceptual strength do I bring to the table?"), clarity on the perspective of *others* ("What perceptual strength do they bring?"), and a mindset of *equal value*. In this story, there's a happy ending. Months after the event, and with much dedicated effort, the junior team member had developed her 'analytic' muscle. She became ambidextrous, manifesting that holistic and analytic thinking are not fixed capabilities, but eminently developable.

In summary, these East/West studies show that racial diversity can play a role in creating perceptual differences, but those differences are malleable and influenced by language and context. This unreliability means that the simplistic (or Noah's Ark) approach to racial diversity (let's have a couple of Germans, a couple of Singaporeans and a couple of Americans) is fraught with danger if the expectation is that these characteristics will mean people will always see things differently. As we suggested earlier, a much more reliable value is the capacity of racial diversity to trigger greater levels of exploration amongst team members and more thorough information processing.

Cultural intelligence

There is, of course, an additional value to racial diversity that goes to the specialised knowledge that racial/cultural groups have about their own cultural sensitivities and norms. One might think this goes without saying, but it appears not, given that multinational companies frequently make rules from the centre (Headquarters) assuming that dispersed employees or consumers give similar meanings to environmental features or behaviours.

By way of example, the numbers 1, 3, 4, 9, 13, 17 and 666 are just numeric figures but they carry different meanings or associations in different cultures. Westerners

(in Australia, the USA and the UK, for example), are likely to attribute Satanic meaning to the number grouping of 666, and an (un)lucky meaning to 13. Chinese and Japanese are sensitised to the number 4 (pronounced *si* and *shi* respectively) as it sounds like the word for death. In contrast, the number 9 is auspicious in China with its associated symbolism of harmony, whereas in Japan the number 9 (pronounced *ku*) is a homophone for suffering. In Italy, the number 17 is associated with bad luck because of its association with the Roman numeral XVII, which when rearranged anagrammatically spells VIXI meaning “I have lived” (past tense).³⁶

When companies investigate and integrate such cultural differences it is reflected in their products and employee interactions. Take, for example, Canon, which bypassed the number four in its PowerShot camera series – moving straight from G3 to G5; construction companies that skip the 13th floor and 4th floor in Western and Chinese buildings respectively; and American products that are not priced at 9.99 for the Japanese market.³⁷

In contrast to this adaptive approach, marketing magazines are littered with examples of product launches or marketing campaigns that have failed to undertake a cross-cultural double-check, assuming that the way the product designer sees the world is resonant across cultures. Gerber, for example, reportedly used its standard logo (a picture of a baby and the word Gerber) when it entered the African market, seemingly unaware that in Africa, where illiteracy is high, companies put a picture of what is inside the product on external packaging. IKEA’s cuddly wolf toy Lufsig was released in China with the name Lo Mao Sai which contains a homophone for Hai, meaning vagina. Colgate fell foul when it introduced its ‘Cue’ toothpaste into France, not realising that Cue was also the name of a well-known pornographic magazine³⁸.

More than mistakes with numbers and words, the essence of racial misunderstandings and conflict often lies in different expectations about, and interpretations of, behavioural and cultural norms. As Laura Liswood so elegantly identified in her 2009 book *The Loudest Duck*³⁹, different cultures view the same

36 Smartling (2013) *I’ve got your number*, www.smartling.com.

37 Kelly, N., (2013) Bad-luck numbers that scare off customers. *HBR Blog*, 30 July 2013.

38 Fromowitz, M., (2013) Cultural blunders: Brands gone wrong. *Campaign Asia Pacific*, 7 October 2013, www.campaignasia.com.

39 Liswood, L., (2010) *The loudest duck: Moving beyond diversity while embracing differences to achieve success at work*, John Wiley & Sons, New Jersey.

behaviours through a very different lens. Indeed it is one of the key themes of her book and the reason for its title, which is a reference to the Chinese fable which cautions that “the loudest duck gets shot”. In contrast, in the USA the prevailing view is that “the squeaky wheel gets the grease”. Two very different interpretations of the merit in standing out from the crowd.

People expect others to behave in certain ways and attribute significance to a behavioural indicator, all of which is created and reinforced by one’s cultural surrounds. And while one may know this intellectually, much of what was once learned is now considered to be ‘normal’, leading individuals to anticipate, indeed expect, that others see the world in the same way (or pretty close to it).

This is the fallacy of perspective homogeneity. This bias leads people to tend to overestimate the degree to which their world view is shared by others. It is one of the reasons for the marketing mistakes described above. In contrast, those who are more culturally intelligent know that racial/cultural diversity influences not only the features of an environment that individuals are primed to notice (and ignore) as well as the way those features are interpreted, but also who and how decisions should be made. Cultures differ wildly in the ways they condition people to show deference and respect for authority, in whether to expect equality or paternalism, in how consultation should occur, and even in the timing of conversational interactions.

As we will discuss in Part 3, one of the indicators of a highly inclusive leader is the ability to understand and adapt to these cultural differences so as to create a more collaborative diverse team. To recreate, for example, the positive experience of the Deloitte multi-national team, rather than one which fractures along diversity default lines of misunderstanding and separation.

To sum it up

Let’s take stock for a moment, as the discussion about racial/cultural diversity has gone in a number of different directions. We have shied away from a simplistic view that racial diversity *always* means that people see different features of the same environment (in the sense of an FD/FDI racial fault-line). We have leveraged the insights about analytic and holistic thinking to suggest that seeing both the detail and the context should be a group’s goal, but relying on racial/cultural diversity to deliver that value is dangerous. We have suggested that workplace design and the

use of explicit words ('holistic', 'context', 'big picture' as well as 'analytic', 'detail', 'items') can help prompt diversity of perspective.

We have argued that the stronger value associated with racial/cultural diversity comes from an understanding of how race/culture shapes the way people interpret the same features of an environment and sets expectations of behaviour, and that this understanding of 'perspective' is vital for globalised workforces and operations. Even more critically, we have argued that racial diversity changes the dynamics, or interactions, between group members. Racial diversity is a trigger, creating an expectation of difference. It stimulates people to pay a higher level of attention to others, to listen more closely, to question and to speak up. This is the golden nugget that lies at the heart of the studies conducted by the Niensens, Freeman, Huang, Smith, Sommers, Antonio and Levine, as well as our own field research on a multi-national team.

From all of this, we conclude that racial/cultural diversity should be one of the features of our 360 degree radar scan, although a few words of caution are needed before inscribing this idea in stone. Firstly, there are inherent risks in generalisations, given that there is a high level of variation *within* a demographic group. Secondly, perception is malleable and sensitivity can be eroded, often quite quickly. While these cautions can apply to statements about any demographic group, the capacity for current racial differences to be minimised over time is heightened by a shift to a more globally connected, educated and mobile workforce.

And here's the final intriguing thing about racial diversity, which we foreshadowed through our profile of Sommers' study, as well as those of Antonio and Levine: even if some differences between racial groups are going to be minimised over time (for example, FD/FDI), the *expectation* of difference will probably remain for a little longer, and this has an unexpected upside (not just the downside of negative stereotyping).

What's the bottom line? As noted in the introduction, our hypothesis is that creating a diverse team broadens the perspective of a group, and we have placed a bet on being intentional about including racial/cultural diversity as one of the key elements of perspective. We have been a bit loose with the language, using the word race, nationality and culture almost interchangeably, because the science is not exact but indicative. In summary, drawing on the Asian/Western studies, we

suggest that a group view that combines analytic and holistic thinking provides a more comprehensive perspective than one or the other alone, and is therefore likely to generate more ideas or options. Additionally, awareness of cultural differences can act as an insurance against error, particularly in terms of different interpretations of environmental cues, but obviously only when those issues are relevant.

Finally, our field study provides connective tissue between the theory of nationality diversity, experimental studies and its practical operation in a high-performing team. Our field study confirmed what Sommers, Antonio and Levine already found, namely that the presence of visible diversity changes behaviours to elicit diverse perspectives and stimulate more rigorous thinking.

But, of course, race diversity is just one element of visible diversity. Where and how does gender diversity fit in?

The bottom line is...

1. Visible racial/cultural diversity amongst group members has an indirect effect on diversity of perspective by triggering attention and exploratory behaviours *amongst the visible majority*, thus helping generate a group conversation that is both broader and more accurate.
2. Racial/cultural tendencies to be more analytic (detailed) or holistic (context) in perspective can facilitate a direct effect on diversity of thinking in a group. These tendencies are malleable in an individual (not stable), and can be learned and even stimulated by the use of language and workplace design.
3. Attending to specific racial/cultural knowledge and being culturally intelligent is critical when developing market specific strategies and engaging with people from culturally diverse backgrounds.

Gender: turn-taking and speaking up

There is a veritable avalanche of research examining whether companies perform better when there is gender diversity at board level or in executive teams.⁴⁰ This

40 McKinsey (2012) Is there a payoff for top team diversity? *McKinsey Quarterly*, April 2012, McKinsey and Company; Dezso, C. L., and Ross, D. G., (2012) Does female representation in top management improve firm performance? A panel investigation. *Strategic Management Journal* Vol 33(9) pp. 1072-1089; Catalyst (2011) *Why diversity matters*, Catalyst New York; Carter, N. M., and Wagner, H. M., (2011) *The bottom line: Corporate performance and women's representation on boards 2004-2008*, Catalyst New York; McKinsey (2010) *Women matter: Women at the top of corporations: Making it happen*, McKinsey and Company; Joy, L., Carter, N. M., Wagner, H. M., and Narayanan, S., (2007) *The bottom line: Corporate performance and women's representation on boards*, Catalyst New York.

attention is not surprising really, given that gender diversity is very visible and easy to measure, boards and executive teams exert a direct impact on business performance and the topic of gender diversity is highly political.

The standard method for these examinations has been to review company performance on a range of financial metrics, such as Return on Invested Capital (ROIC), Debt to Equity Ratio (D/E), Return on Sales (ROS), Return on Equity (ROE) or Price/Book Value (P/BV), and then to compare those outcomes to the ratio of men and women on the board or in the executive team. Frequently this research involves large datasets (for example, thousands of companies listed on Stock Exchanges) and longitudinal data (for example, over years). They are, quite obviously, correlational studies, but the overwhelming finding is that gender diversity on small teams (boards or executives) correlates with improved business performance.

For example, in 2012 Credit Suisse studied the performance of 2,360 companies over six years (2005-2011) and compared the outcomes when boards comprised all men and when boards comprised at least one woman. The research team concluded that companies with more gender diverse boards “delivered higher average Returns on Equity, lower gearing, better average growth and higher P/BV multiples”⁴¹ and this was reflected in share price performance⁴². In particular, ROE was on average 4% higher, Net D/E was 2% lower, net income growth was 4% higher and P/BV a third higher⁴³.

In 2014, Credit Suisse expanded its analysis to consider the relationship between financial performance and gender representation at the executive level. The dataset comprised 28,000 senior managers in 3,000 companies across 40 countries. Credit Suisse confirmed its previous findings in relation to the positive impact of board gender diversity on company performance. The team also concluded that executive gender diversity is correlated with improved company performance (ROE, P/BV and share price).⁴⁴

41 Credit Suisse (2012) *Gender diversity and corporate performance*, Credit Suisse Research Institute, p. 3.

42 Credit Suisse (2012) *ibid* p. 12.

43 Credit Suisse (2012) *ibid* p. 14.

44 Credit Suisse (2014) *The CS Gender 3000: Women in senior management*, Credit Suisse Research.

The question that vexed Credit Suisse, as well as the numerous academics and researchers who have entered this territory, is: why?

An obvious answer is that the companies with higher proportions of women in senior positions are drawing from a larger talent pool rather than one limited to men (only 50% of the pool)⁴⁵. But there's probably more to it than that. Some would argue that women bring unique skills and capabilities to the table. We have often heard people say "Men and women *think* differently". Socially constructed stereotypes certainly suggest that men and women make different decisions because women are (naturally) more 'caring', whereas men are more 'action oriented'.

Taking that idea one step further, some would even say that men and women think differently because their brains are hard-wired differently. Are they right? Are men and women's brains hard-wired to think differently – to the point where men and women literally 'see' their shared world as though through completely different glasses? If so, women and men could be relied upon to provide quite contrasting insights. But, if this is not the case, what causes gender diversity to improve group decisions?

There's a lot to cover here, but let's start with the more controversial aspects of the gender diversity debate. The belief in hard-wired brain differences has received spirited challenge from eminent academics such as Professor Hyde (University of Wisconsin) and Professor Fine (Melbourne Business School), and their challenge has focused on separating evidence and opinion. Hyde's meta-analyses of studies on linguistic and mathematical abilities (obviously the manifestation of brain capabilities) led her to conclude that the similarities between men and women are far greater than any differences and, where differences exist, they are negligible in size⁴⁶. Professor Fine reviewed hundreds of neuroscience research studies and concluded that much of the brain research is methodologically flawed (for example, based on very small sample sizes and static moments in time), inconsistent and certainly

45 Bourke, J. and Dillon, B., (2011) *Only skin deep? Re-examining the business case for diversity*, <http://www2.deloitte.com/content/dam/Deloitte/au/Documents/human-capital/deloitte-au-hc-diversity-skin-deep-2011.pdf> retrieved 28 September 2015.

46 Hyde, J., and Linn, M. C., (1988) Gender differences in verbal ability. *Psychological Bulletin* Vol 104(1) pp. 53-69. Hyde, J., Fennema, E., and Lamon, S., (1990) Gender difference in mathematics performance: A meta-analysis. *Psychological Bulletin* Vol 107(2) pp. 139-155. Hyde-Shibleys, J., (2005) The Gender similarities hypothesis. *American Psychologist* Vol 60(6) pp. 581-592.

can't be relied upon to make confident predications about what is occurring at the neurological level in terms of sex-based differences⁴⁷.

So where does that leave us? If the brain research is highly contested, how do researchers seek to understand whether men and women bring different perspectives to a group? In essence, if two heads are better than one, should the second one be of the opposite sex?

The easiest cut-through in this highly-opinionated domain is to focus on points of common agreement between the two camps. Whether one is an apologist for brain-based differences or not, it seems that all (including Hyde and Fine) would agree that men and women have been *socialised* differently. If that's the case, the salient question becomes: do men and women *think* differently because of their *gender* (technically "gender" refers to socially constructed differences, whereas "sex" refers to those which are biologically/chromosomally determined)? Or, thinking about our radar arc of perspective: do men and women perceive their environment differently? Do they notice different cues in the environment, either because they have been socialised to do so or have had different life experiences? There is certainly a strong stereotype that men and women think very differently, but the factual answer is: it depends – sometimes, but not always. Just like the story for racial/cultural diversity, the complexities are fascinating. They will leave you arguing for gender balance, but not for the reasons you might have first expected.

Changing the conversation dynamic

To cut to the chase, from a "perspective" point of view, the overall value of gender diversity is much less about *thinking* differences *between* men and women and more about the changes in a group's *dynamic* in the *presence* of gender diversity. Recent experimental research shows that gender diversity helps improve the collective intelligence of a group because women tend to encourage information sharing and collaborative group behaviours. This is not to say there are no differences between men and women (beyond biology), rather that the greater and more reliable value of gender diversity is as a conversation changer in groups. In this sense, the story

⁴⁷ Fine, C., (2010) *Delusions of gender: How our minds, society and neurosexism create difference*, WW Norton and Company, Australia.

of gender diversity shares parallels with the race/culture diversity story, although with some interesting differences.

Gender diversity improves collective intelligence because it changes conversation dynamics. In terms of group dynamics, men and women operate at their best when there's a gender balance.

Gender diversity encourages people, men *and* women, to speak up. In terms of diversity of thinking, this effect helps to elicit a broader range of perspectives in a group setting and enhances group cooperation. In contrast, racial diversity triggers curiosity and exploration. Two critical pieces of research support this insight about gender diversity, one from the London Business School and the other from Carnegie Mellon University.

In 2007, Professor Gratton and her team from the London Business School looked at individual *and* group differences between 100 gender-diverse teams in 17 countries, comprising 21 companies and 850 individual team members⁴⁸. The addition of the group element (rather than individual men versus individual women) is critical, as our interest is in the collective intelligence of groups. Our working hypothesis is that collective intelligence is enhanced when the group comprises individuals from both sexes. In Gratton's study, each team member was asked a series of questions about their self-confidence, personal initiative, sensitivity to others' views, organisational commitment and intention to leave, domestic labour, and children. In contrast to those who suggest vast differences between men and women, the researchers found that men and women are "remarkably similar in their attitudes and aspirations". Notably however, they also found a small number of significant differences – and these can be categorised as differences in life experiences.

Firstly, men and women team leaders showed differences in their domestic arrangements and care giving, with women team leaders less likely to have children (52% had no children) than men (4% had no children). Of those who had children, male team leaders were more likely to have pre-school aged children (46%) than women (23%). Secondly, women were six times as likely to do most of the domestic

48 Gratton, L., Kelan, E., Voigt, A., and Wolfram H.J., (2007) *Innovative potential: Men and women in teams*, The Lehman Brothers Centre for Women in Business, London Business School.

labour in their household (31%) than men (5%). Thirdly, male leaders reported working longer hours (52 hours per week) than women (44 hours per week). These three factors mean that, in terms of life outside work (namely care giving and domestic tasks), male and female team leaders are likely to carry a different set of pressures and experiences, meaning that their experiences of the workplace are likely to differ as well. Indeed, the male leaders in this study reported a higher level of negative spill-over from home to work than women, perhaps arising from the combination of having young children and working longer hours.

Using our radar model, these differentiated experiences, which are more about home and family than being a man or a woman per se, are likely to create different arcs of perspective and insights – but only if the question in view pertains to the workplace, and in particular work/family integration. To be clear, Gratton's study suggests that men and women are likely to have different sensitivities to work/family issues, and those perspectives will obviously be germane to a decision requiring such insights. Just as with racial diversity and cultural sensitivity, sometimes a diversity-driven perspective will be directly relevant to a group decision – and sometimes not. To say that men and women will always have different perspectives from each other, just because they are men and women, is far too broad a statement, and certainly one challenged by Gratton's research.

On a different tangent, Gratton and her colleagues also found that when men or women are a minority group within a team, they are likely to experience negative outcomes, including lower life satisfaction, higher negative mood and lower commitment. On the other hand, feelings of psychological safety and experimentation were optimal with a ratio of 50:50 women and men, and self-confidence of team members optimal with 60:40 women and men. This means that both men and women will perform better (because they feel more self-confident), and the team will be more innovative and productive, when there is a gender balanced team. Now that is something worth pursuing unless, of course, it's all just a matter of perception?

The answer to that question comes from a second, more recent study. The tangible benefit of male/female diversity was identified ever so nicely in a tiny little article you could be forgiven for missing. It was three pages long, in small print and located in an unexpected journal, "Science", but the title says it all: "Evidence for a collective intelligence factor in the performance of human groups". In 2010, Professor Woolley

from Carnegie Mellon University and her colleagues⁴⁹ set out to study whether groups exhibit measurable ‘collective’ intelligence, which can be used to predict their performance on tasks (like the concept of ‘general’ intelligence for individuals).

Across two studies, 699 people were asked to work in small groups of three on tasks including “visual puzzles, brainstorming, making collective judgements and negotiating over limited resources”. The researchers measured each individual’s intelligence and calculated a group average and maximum which was related to the quantum of ‘collective intelligence’. This was when they discovered that the collective intelligence of the group was not the sum of its parts. Collective intelligence was not just the average of each individual’s intelligence, or even the sum of individuals, but something different and greater. Collective intelligence is a factor in its own right – a property owned by the group itself – and reflects the elaboration of individual contributions. Moreover, the collective intelligence of a group is a better predictor of performance than the average or maximum individual intelligence. Collective intelligence is real and something to be purposeful about.

If this research is correct – if collective intelligence is not just about lumping a whole lot of smart people together into a group – what factors in a group’s composition or behaviours drive intelligence and therefore performance?

In this relatively uncharted territory on collective intelligence, Woolley and her colleagues looked at 152 groups in detail, each with two to five members, and tested six possible factors, including cohesion, motivation and satisfaction, all of which might reasonably be assumed as critical to team performance. Turns out these three didn’t matter, it was the other three features that were significantly correlated to, and predictive of, collective intelligence:

1. **Proportion of women.** It’s an intriguing finding, but almost a throwaway line by the researchers because they don’t talk about the percentage of the proportion, just that bald statement.
2. **Equal distribution of ‘speaking up’.** In groups dominated by a few voices, collective intelligence and performance, diminished. Not surprising really: if an individual’s contribution remains a potential rather than an actual contribution, then the collective cannot be significantly enriched.

⁴⁹ Woolley, A. W., Chabris, C. F., Pentland, A., Hashmi, N., and Malone, T. W., (2010) Evidence for a collective intelligence factor in the performance of human groups. *Science* Vol 330 pp. 686-688.

3. **Social sensitivity** (or emotional intelligence). When groups comprised members with high average social sensitivity, and in particular when members were able to read non-verbal cues accurately (for example, looking at facial expressions to identify whether someone agrees or disagrees with a point being made, is confused or needs more information), the group had a higher level of collective intelligence and out-performed on tasks.

The most significant of these factors was that of social sensitivity, and this is where the story of women's presence in groups reasserts itself. The researchers found that the women in their sample were more likely to score better than men on social sensitivity as measured by the "Reading the Mind in the Eyes" test⁵⁰, and this capability translated into different behaviours in groups. In particular, women demonstrated,

"(a) greater ability to read nonverbal cues and make accurate inferences about what others (were) feeling or thinking. Groups with more women also exhibited greater equality in conversational turn-taking, further enabling the group members to be responsive to one another and to make the best use of the knowledge and skills of members."⁵¹

To slow this down, Woolley's study suggests that women are slightly more adept than men in reading non-verbal cues, such as noticing when a team member wishes to speak up. The finding about conversational turn-taking is potentially something quite different. It could be linked to women's social sensitivity and a sense of wanting to create harmony within a group, and/or it could be linked to Gratton's finding that men and women feel more psychologically safe to speak up in mixed groups. Is it women who directly facilitate the turn-taking, or does their presence disrupt the dynamic of a single-sex group or tribe?

Intrigued by their own findings, Woolley and her colleague, Dr Bear from the

50 This test, developed by Professor Baron-Cohen at the University of Cambridge, is available online at www.kgajos.eecs.harvard.edu/mite/

51 Woolley, A. W., and Bear, J. B., (2011) The role of gender in team collaboration and performance. *Interdisciplinary Science Reviews* Vol 36(2) pp. 146-153 and p. 148.

Israel Institute of Technology, subsequently reviewed other researchers' findings on the impact of gender diversity on team communication. Not surprisingly, they found their 2010 results had been foreshadowed in a range of studies and many other researchers had already concluded that the presence of women in groups helped facilitate constructive interactions between group members and created a more collaborative dynamic.⁵²

They also found new insights. In particular, they found a study of final year business students who were tasked with undertaking a business simulation task over a ten-week period in small groups (of four to seven people). The task involved collecting and analysing large volumes of market information, adjusting to the introduction of new products and developing strategic interventions, with success depending on high levels of efficiency, communication and teamwork – a scenario not unlike the work undertaken by boards and executive teams. Echoing Gratton's finding about the optimal sex ratio within a group, the business simulation study found that:

“groups with equal numbers of men and women and/or groups with a greater number of women than men performed better than homogeneous groups on a management simulation task, and this effect was explained by more effective collaborative group processes and cooperative norms.”⁵³

And there's one final study, one which is a little quirky in nature. Catharine Fairbairn, now a Professor at the University of Illinois, devoted her PhD to studying the effects of alcohol and gender on spreading smiles⁵⁴. Authentic smiles, known as “Duchenne smiles” in honour of French neurologist Guillaume Duchenne, involve changes to muscles around the mouth and eyes (as opposed to fake smiles which only involve changes to mouth muscles). Like an emotional contagion, authentic smiles can be “caught” by group members through an unconscious process of

52 Woolley, A., (2011) *ibid*. For example, Berdahl, J. H., and Anderson, C., (2005) Men, women and leadership centralization in groups over time. *Group dynamics* Vol 9(1) pp. 45-57.

53 Fenwick, G. D., and Neal, D. J., (2001) Effect of gender composition on group performance. *Gender, work and organisation* Vol 8(2) pp. 20-25 and summarised by Wolley, A., (2011) *ibid* p. 148.

54 Fairbairn, C. E., Sayette, M. A., Aalen, O. O., and Frigessi, A., (2015) Alcohol and emotional contagion: An examination of the spreading of smiles in male and female drinking groups. *Clinical Psychological Science* Vol 3(5) pp. 686-701.

mimicry, thus spreading through the group as a mutual smile and promoting positive feelings of warmth and social cohesion.

Fairbairn had read the findings of previous researchers that men were less likely than women to smile during social interactions⁵⁵. That research included a meta-analysis of 162 global studies and more than 100,000 research participants⁵⁶, which concluded that gender norms exert the largest influence on public displays of emotion. Fairbairn reasoned that when men drink alcohol together, it loosens the bonds of inhibition and this might be the cause of more smiling and social cohesion. She was right of course. Through a labour intensive process of counting the number and duration of Duchenne smiles that occurred over 34.9 million frames of behavioural data, Fairbairn found that a male smile initiator tended to smile for longer than they otherwise would have, and this increased the probability that his smile would be reciprocated by another group member.

What was unexpected were the findings in relation to the influence of women on mutual smiling. By separating the 360 male and 360 female research participants into small teams of three people, and allocating them to one of three groups (control, placebo and alcohol), Fairbairn was able to compare the effects of drinking as well as gender. Remarkably, Fairbairn found “group gender composition significantly affected the hazard of a smile developing into a mutual smile”⁵⁷. In fact Fairbairn found that in the control and placebo groups, the presence of a woman (whether she was one of three or two of three) increased the likelihood that a Duchenne smile would transition into a mutual smile by 9.2%. It wasn’t because women’s smiles were more powerful – or infectious – than men’s, it was because women tended to smile more in response. So instead of a group comprising one smiler and two neutral people, it was now much more likely to comprise one smiler, and a smile catcher.

This unconscious behaviour made a lot of difference to a group’s mood. More specifically, the more likely a smile was to be caught, the more likely the group reported a positive mood and feelings of social connectedness (for example: “I feel included in this group”; “my presence makes a difference to this group”; “the

55 Fairbairn, C. E., *et al* (2015) *ibid* p. 687.

56 LaFrance, M., Hecht, M. A., and Paluck, E. L., (2003) The contingent smile: A meta-analysis of sex differences in smiling. *Psychological Bulletin* Vol 129(2) pp. 305-334.

57 Fairbairn, C., E., *et al* (2015) *ibid* p. 692.

members of this group are interested in what I have to say”; and “the members of this group value my ability to contribute”⁵⁸. And quite obviously, positive feelings of social connectedness are conducive to people speaking up.

So far, the signs are all pointing to the conclusion that men and women *think* similarly; however, they seem to *behave* a little differently in relation to team dynamics. It’s a generalisation of course, but there’s a tendency for women to create conditions that enable diverse perspectives to surface and be heard.

Is that it then? Women help elicit diverse perspectives by creating a more collaborative environment? Or are there more specific perspective differences between men and women? Should people still cling to the oft-reiterated view that men and women think differently or, as John Gray espoused, “Men are from Mars and Women are from Venus”⁵⁹?

Analytic and holistic thinking

“Do men and women think differently?” is a question that has also puzzled Professor Zhang, and in particular whether there is a gender fault-line that can be overlaid onto the spectrum from field dependence to field independence. Why has it puzzled her? Because it is commonly said that women take a more holistic (field dependent) view of a situation and men a more analytic (field independent). But is this true? Without taking you through the research in laborious detail, let’s go straight to Zhang’s conclusions.

Firstly, she concluded that men and women do tend to show differences in perceptual orientation, with men being slightly more field independent and women being slightly more field dependent.

Secondly, she agreed with researchers such as Professor Hyde (whom we also rate highly), that where gender differences do exist in relation to cognition, they are extremely small. Moreover, these small differences are overshadowed by the much greater levels of similarity between men and women. Our take on Zhang’s observations, together with those of Fine, is that, to the extent that they do exist, gender differences have been significantly overplayed because people are primed to

58 Fairbairn, C. E., *et al* (2015) *ibid* p. 694.

59 Gray, J., (1993) *Men are from Mars, Women are from Venus: A practical guide for improving communication and getting what you want in your relationships*, HarperCollins, USA.

see male/female (more like men *versus* women) as a meaningful point of individual difference. In effect, individuals see what they have been trained to see – namely difference – and ignore what they have been trained to ignore – namely similarity.

Thirdly, Zhang observed that even though gender-based differences are extremely small overall, they are clearly influenced by socialisation. On this latter point, she noticed that “gender differences in psychological differentiation were neither significant nor consistent until early adolescence”⁶⁰; were much stronger among older men and women; and that gender differences vary across cultures “with gender gaps being wider in cultures in which social conformity is valued more”⁶¹. Finally, and most critically, she concluded that individual sex-based FD/FDI differences are malleable – they are not fixed but highly changeable.

Zhang’s final conclusion should not be glossed over as it speaks to the question of whether men and women can be relied upon, as a general rule of thumb, to bring a point of view that is more field independent or field dependent, respectively. Simply put, can people be certain that if they have a small team, say of three men and three women, individuals will naturally default to seeing a scenario analytically (men) and holistically (women)? What would create the conditions for change? One need look no further than corporate environments. It has sometimes been said that the only difference between a male and female executive, or board member, is that one is wearing a skirt. Probably somewhat of an overstatement, and more than a little pejorative, but this remark holds a kernel of truth according to Zhang’s review of what happens when men and women cross boundaries, that is, work in gender atypical domains.

Whether it is a product of selection bias (women chose male-dominated professions because of a ‘fit’) or acculturation (women fit in after arrival), Zhang identified a number of studies in which women who were studying or working in traditional male domains (for example, as accountants or studying business) showed no FD tendency. This means that, in contrast to the general population of women who have a slight tendency to see things more holistically than analytically, this is not the case for those women who work within a setting dominated by men. Zhang

60 Zhang, L., (2013) *ibid* p. 59.

61 Zhang, L., (2013) *ibid* pp. 59-60.

proffered, “one cannot help but think that this lack of a gender gap could very well be attributed to women developing field independence as a result of being socialised in male-dominated fields”. However, she was quick to point out that the question of development is unsettled.⁶²

It seems then, that the assertion of similarity between male and female executives could well be true if it implicitly refers to the shared way that men and women perceive an issue. In practice, this means that ‘adding a sprinkle of women’ to an executive team is likely to add no diversity of perspective in terms of FD/FDI. Women on boards are unlikely to see situations through any more of a relationship/ holistic lens than their male peers. Does that now end the debate?

Risk taking

Perhaps there’s one more issue to be discussed. According to current wisdom, men and women think (and behave) *very* differently about risk. Men are seen as naturally testosterone-fuelled risk-takers and likely to underestimate risk; whereas, women are seen as more conservative and risk averse, and therefore likely to overestimate risk. In essence, the belief is that men and women see risks differently: women see threat and men see challenge. This has led to a popular view post the GFC, that gender equality in the top teams of investment banks and financial institutions would have averted the crisis. Even Christine Lagarde, France’s Minister for the Economy in 2010, opined “*If Lehman Brothers had been ‘Lehman Sisters’, today’s economic crisis clearly would look quite different*”⁶³. Such commentary implies a 1:1 relationship between women and financial restraint because women would have brought their innately more conservative financial bias to the table.

The previous statistics developed by Credit Suisse suggest that gender equality may well have assisted company performance, if only because women are 50% of the world’s brains trust and gender balance would have meant that companies were drawing from the full talent pool⁶⁴. Moreover, as Gratton and Woolley suggest, gender diversity would have facilitated a more open conversation between board

⁶² Zhang, L., (2013) *ibid* p. 62.

⁶³ Lagarde, C., (2010) Women, power and the challenge of the financial crisis. *The New York Times*, 10 May 2010, Op-Ed.

⁶⁴ Bourke, J., and Dillon, B., (2011) *ibid* p. 10.

members and executive teams, thus enabling a broader perspective of financial affairs. What we don't accept is that there are marked differences between women and men in relation to financial risk-taking. In summary, women cannot be relied upon *directly* to provide a team with a personal "anti-risk insurance policy". Why did we reach such a definite conclusion?

There seems to be a small truth in the generalisations we have considered so far about sex-based perceptual differences. Generalisations about risk taking are no exception. Once again, that slight difference is overplayed as an absolute and permanent difference. Shades of grey, as well as greater levels of similarity than difference, are ignored. Let's start with the small truth.

In 1999, Professor Byrnes (then at the University of Maryland), together with his colleagues Miller and Schafer, sought to answer the big question: 'are there gender differences in risk taking?' by using the standard 'big' research technique; namely, collect all the research one can find on a topic and conduct a meta-analysis. For Byrnes et al, this meant reading 150 research articles conducted over a period of 34 years (1964 to 1997) amounting to a total sample size of 100,000 – not an insubstantial set of data⁶⁵. However, studying risk is not a simple matter. Firstly, because each person has a different internal barometer telling them whether a decision is risky or not, taking into account the context and their personal capability. Secondly, because what people *say* they would do hypothetically and what they *actually* do in practice might be very different.

So the first step for Byrnes and his team was to validate that the 150 studies had looked at risk from multiple angles. They found the previous researchers had used: (i) hypothetical scenarios that involved research participants making choices (for example, about gambling options); (ii) self-report studies that asked people to quantify their risk taking behaviours (for example, in relation to drinking, smoking and having unprotected sex); and (iii) observation studies that involved researchers watching people (for example, making a risky turn into traffic). That seemed to cover the full range of possible ways to assess risk, leaving Byrnes and his team with a level of confidence that if they did (or did not) find gender-based differences, it would be meaningful and not driven by methodological biases.

⁶⁵ Byrnes, J. P., Miller, D. C., and Schafer, W. D., (1999) Gender differences in risk taking: A meta-analysis. *Psychological Bulletin*, Vol 125(3) pp. 367-383.

Having satisfied themselves that they understood the shape of the research landscape, Byrnes et al set about the task of coding every effect studied (there were 322 of them) and segregating the results in terms of whether a gender difference was found (or not) and the size of that difference. The bottom line was that, on balance, women and men *do* assess risk differently, but not nearly to the degree that black and white stereotypes might suggest. The overall size of the difference was very small (6%) and quite frequently non-existent (in 40% of the studies the difference was negative or close to zero). This begs the question, when differences did occur, where were they found?

Interestingly, the differences showed up in *some* of the hypothetical studies. Men and women were quite similar in the way they responded to hypothetical *choices* about gambling options; however, they responded differently to questions that involved hypothetical *behavioural* and *intellectual* risk. This difference was exposed by a range of studies that posed dilemmas about: making friends in a new neighbourhood; walking home from the woods; solving maths problems; donating an organ to a sick child; and planting different crops. In each of these cases, men were slightly more likely than women to say they would take risks (mean effect size = 0.35). It wasn't a big difference, but enough to be noticeable.

Even though we are interested in thinking-based differences, we can't help but be intrigued by the secondary question: do those differences play out in men and women's actual behaviours? The answer lies in the observational studies: men were slightly more likely to take risks which involved physical skills (mean effect size = 0.43) or intellectual risk (mean effect size = 0.40). These slight differences in how men and women are likely to talk about risk, and behave, no doubt give rise to the view that men and women *assess* (or think about) risk differently.

The challenge, given the dominance of male/female stereotypes about risk, is to recognise that the very small difference is being overshadowed by the much greater similarities between men and women. Especially as Byrnes also found that gender-based differences are diminishing over time – men and women are becoming more and more similar in the way they assess risk.

You might have thought that Byrnes' study settled the question on risk and gender based differences/similarities. However, his study was conducted in 1999, ten years before the GFC. The invocation of gender stereotypes post

the GFC suggests that stereotypes die hard. Indeed, the GFC stimulated a new wave of research, some of which concentrated on the specific question of whether men and women see financial risks differently. These studies were looking for finer cuts of understanding. Are men and women's attitudes and behaviours influenced by:

- Different types of financial risk (for example, insurance and protection against loss versus investment and prospective gains)? and/or
- The way a problem is framed (for example, as a risk or an opportunity)?

Other studies took a very different line and questioned why gender stereotypes about risk endure despite the evidence of greater levels of similarity, and why, therefore, women's style of risk taking remains invisible?

An interesting study conducted in 2010 by Simmons College University Professor Maxfield and her colleagues (also from Simmons College as well as California State University) brought together some of these threads. Their literature review of the previous ten years' worth of research on financial risk taking/aversion revealed that a simple framework of analysis which looks for male/female differences, and assumes that those differences are stable across different contexts, misses the nuances. For example, Maxfield observed that when men and women are asked to make decisions involving insurance against loss, their responses could not be differentiated by sex. However, when the decision relates to investment, some studies found small differences between men and women.

If people still believe that men and women make different decisions about risk, these findings would cause one to narrow the line of argument (that is, forget about insurance, let's just focus on investment-type risks), but not reject the overall frame of reference (namely, men and women think about risk differently). However, the merit of such tenacity is called into question when one learns that even the studies about sex-based investment decisions are not stable, with some European studies finding that men and women's decisions about household investments are similar, while some US studies find difference. And if we change the lens again, to focus on investment decisions by managers and CEOs, gender makes no difference at all.

These studies of shifting sands prompted Maxfield and her colleagues to reflect

on why gendered stereotypes are so resilient.⁶⁶ Why do people continue to believe in a simple and binary view that men are greater risk takers, and women are more risk averse? Why are people (both men and women) likely to use visible biological differences as a factor to explain individual behaviour?

Fine's answer is 'priming': people have been taught from birth that sex is salient and meaningful. For example: people colour code children pink and blue; at school, sex-differences are used as a grouping tool, with boys and girls separated into different lines or seats; and cultures integrate sex-based differences into language, either directly by giving a sex to the word 'the' before a noun (for example, die katze (the (female) cat), der hund (the (male) dog) or indirectly through sayings (for example, "toughen up princess", "boys don't cry"). Priming means, in effect, that people are set up to notice if someone is male or female in a way that they are not primed to notice other differences (for example, left and right handedness) and to give that difference a significant weight. Confirmation bias (one's desire to confirm a belief already held) and selective attention bias (a lack of focus on a full spectrum of information) help cement this priming. All of this, and much more, leads men and women to internalise sex-based stereotypes, including those that present men as action-oriented risk takers and women as cautious carers.

So how can one get a glimpse of men and women's true colours, without priming people to evaluate risks through a gendered prism? Maxfield and her team took this question to heart. Their first hypothesis was that the phrase 'risk taking' itself has been tied to gender, therefore using the word 'risk' in hypothetical studies acts as a priming mechanism. Their second was that hypothetical situations might cause women to think in gendered abstractions; whereas, experience-anchored or concrete scenarios would show a different reality. These two hypotheses were tested when 661 women attending a leadership conference completed a survey. These women held positions as supervisors (30%), middle managers (44%) or senior managers (13%) and therefore had relevant business experience. As a base, Maxfield asked the survey respondents a "traditional financial portfolio allocation question" and this confirmed the "conventional findings of gender-biased risk aversion", namely a minority of women (33% of the sample) were

⁶⁶ Maxfield, S., Shapiro, M., Gupta, V., and Hass, S., (2010) Gender and risk: Women, risk taking and risk aversion. *Gender in Management* Vol 25(7) pp. 586-604 at 588.

likely to allocate more than 50% of a fixed sum budget “to a new project that may yield up to ten times the normal returns and has a zero probability of losing capital investment”, and 67% would allocate less than 50% of the budget to the new project – a conservative and risk-averse decision, to say the least.

In contrast, when the survey respondents were asked about their propensity to take on “opportunities” (rather than “risks”), and the frame of reference was actual business/professional opportunities they had taken up, then their responses changed dramatically. Under these conditions, 80% of respondents said they had sometimes or often taken on a major change opportunity, 79% a major new program and 90% a major assignment, each of which could be described as ‘risky’. So the way questions framed ‘risk’ influenced women’s answers. But there’s more. Maxfield found that not only are women asked the ‘wrong’ question, but they seem to behave differently to men when making their decision, and that behaviour plays into the stereotype that women are risk averse.

In particular, Maxfield found that women’s risk taking behaviour was influenced by three factors:

1. **Power** – the study found that women are strongly motivated to take risks when they have influence or the “power to make an impact... the stronger the desire for power, the more likely a woman will take on the risky opportunities”.
2. **Self-efficacy** (a person’s level of self-confidence in their ability to succeed) – the study showed that self-efficacy strongly predicts risk taking by women. No surprises there. Lots of studies show that risk taking (whether you are a man or a woman) is influenced by power and self-efficacy.
3. **Professional networks** – the study showed that women differ in the way they behave with their networks. Women “contextualise more or in different ways from men”. Perhaps linked to the field dependence tendency we observed earlier through Zhang’s work, Maxfield and her colleagues found that women like to find out about the context for a decision before committing themselves, and this means that they are likely to seek perspectives from their networks. Such behaviour (that is, asking “what do you think?”), when seen through a gendered stereotype, may look like uncertainty and that the woman is asking someone else to make the decision for her, rather than just gathering information.

To sum it up

Returning to our original question for this chapter on gender diversity, these studies lead one to conclude that sex-based thinking differences are extremely hard to identify, slippery, inconsistent and changeable. We looked at the chimera of sex-based differences in terms of analytic and holistic thinking and then we went down another rabbit hole trying to chase stereotypes about risk taking, only to find that women and men cannot be relied upon to provide divergent views on risk, even when that risk is one relating to investments.

More reliably, however, we have observed that women and men are likely to behave differently in groups, and perhaps even more critically, be *expected* to behave differently. While we do not advocate for stereotypes (as they seem to benefit those who hold power, and diminish those who do not), we see a hidden benefit. In particular, women are still given greater licence than men to demonstrate caring behaviours and emotion, and given the identified need for greater levels of collaboration (between team members, business units, business partners and the community), such licence could help teams to accept more egalitarian and inclusive approaches to team interactions: approaches that demonstrably enable diverse perspectives to be shared.

So, can we still say that it is of any value to include a male/female dimension on our 360-degree radar? That is, should organisations ensure that groups have a balanced sex ratio to generate a diverse thinking group – beyond an argument about reaching into the broadest pool of talent? The answer is ‘yes’, but...

But organisations and leaders need to be careful about how they communicate the value of this factor, given the history of overblown, simplistic and damaging sex-based stereotypes.

Although we have suggested that being male or female may influence perspective, this is more likely to be because of the underlying connection to a gender differentiated experience (for example, work/family), than being a man or a woman per se. We can find no reliable evidence that being a man or a woman creates a definitive difference of perspective, across all men and women, that would help expand individual arcs of perspective. Nevertheless, we include it as part of our radar model because of Gratton’s, Woolley’s and Fairbairn’s research on the benefits of mixed teams, in terms of self-confidence, speaking up and cohesion. It may be as simple as men and

women liking each other's company, or it may be a little more complex with mixed teams operating to dilute the behaviours of single sex groups. Either way, having men and women in a team facilitates a broader arc of perspective, because it helps enable individuals with different points of view from their peers to contribute to a group discussion.

Putting the story together so far, we have argued that attention to the racial and gender composition of a team can enhance diversity of perspective, not because racial minorities or gender minorities (usually women in business settings) bring unique perspectives or extra intellectual rigour, but because of the impact that they have on individual behaviours and group dynamics.

Of course people from diverse cultures, as well as men and women, should be on top teams because that is reflective of the broader community and a country's brains trust. But the value-add is that these two aspects of diversity also help to elicit the latent diversity of perspective that already exists within the group because they indirectly change *individual* behaviours and *group* dynamics.

If the team members all come from the same educational discipline or work in the same occupation or function (for example, everyone is from finance) then there's probably a natural ceiling to the ideas that can be generated, even if the group is racially and gender diverse.

In the next chapter, we discuss functional role and educational diversity and argue its capability to generate an incredible breadth of perspective, particularly if attention is also paid to the facilitative elements of race and gender.

The bottom line is...

1. Women and men are, as a general rule, socialised to *behave* differently. In particular, women have a tendency to notice more non-verbal cues and monitor conversational turn-taking. These behaviours have an indirect effect on diversity of thinking by changing the conversational dynamics in mixed groups and thus generating collective intelligence.
2. Social cohesion and psychological safety, which facilitate group members speaking up, are more likely in gender balanced teams. Thus there is a second indirect effect of gender on a group's diversity of thinking.

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> continued from page 51

3. There is little, if any, reliable and consistent evidence that women and men *think* differently. One exception is that women have a slight tendency to see a scenario more holistically, and men more analytically, and this can have a direct effect on diversity of thinking in a group. The difference is marginal and malleable.
4. Attending to specific sex-based life experience differences (for example in relation to work/family) is critical when developing relevant employment or customer-specific strategies.

Role and education: different thinking worlds

Functional role and educational differences have a much more *direct* effect on diversity of thinking, certainly when compared to the *indirect* effects of race and gender.

We have already hinted at the importance of these characteristics via the Niensens' Swiss research, which discovered that company performance improved when top teams comprised members with functional diversity. Our question is: does one's role type significantly influence one's world view, such that a mix of functions on a team will prompt diversity of perspective? The answer may appear obvious to those who have worked in multi-disciplinary teams, read Frans Johansson's *The Medici Effect*⁶⁷ which explored how innovations happen at the intersections of disciplines, or seen the 2014 film *The Imitation Game* about the Enigma codebreakers of Bletchley Park. However, we were uncertain about whether *functional* diversity (that is, one's role or occupation) influenced perspective, or whether it was a difference more deeply connected to a person's *educational discipline*, such as engineering, science or business administration, that trains people to think using a distinct mental paradigm. It turns out both have a role to play.

Professor Hambrick et al's (Columbia University) thorough study of strategic decisions made by 32 major airlines over eight years⁶⁸ is a masterpiece in helping pick apart the issues. He and his team examined 1,445 different types of decisions

67 Johansson, F., (2004) *The Medici Effect: Breakthrough insights at the intersection of ideas, concepts and cultures*, Harvard Business School Press, Boston.

68 Hambrick, D. C., Cho, T. S., and Chen, M., (1996) The influence of top management team heterogeneity on firm's competitive moves. *Administrative Science Quarterly* Vol 41(4) pp. 659-684.

(or 'moves') which ranged from price cutting to route entry and promotion, as well as organisational performance in terms of changes to market share and profits year to year and, of course, top team composition (that is, functional role, educational background and tenure). In terms of functional roles, Hambrick divided executives into one of 15 functions ranging from CEO and COO, to Personnel/Human Resources, Marketing, General Counsel and Finance. For educational background, he classified executives into seven groups including Engineering, Science, Business Administration, Liberal Arts and Law. All of these data were in the public arena, for example, through articles in the *Aviation Daily* and in annual company reports, so perceptual or self-report data were not required.

Hambrick's research was never going to be about what leaders *thought* was going on at the executive table, but what was actually impacting their (collective) decisions.

The exam questions for Hambrick and his colleagues were: is there a relationship between top team heterogeneity (that is, their dissimilarity) in terms of functions and educational backgrounds and company performance? Or does it make no difference at all? And, more critically, if there is a relationship, how does it work? Does heterogeneity enhance performance or reduce performance?

The hypothesis of enhancement rests on the idea that educational and functional diversity creates different and discrete 'thinking worlds', each of which access different knowledge and patterns of analysis, as well as networks. The combination of these diverse worlds facilitates an expansive breadth of perspective and problem-solving capacity. On the other hand, the hypothesis of reduction suggests that in these different worlds people use different language, hold conflicting paradigms and fight for the dominance of their perspective. Hence, far from improving performance through combining diverse worlds, people remain stuck in their respective corners and conflict prevails.

Why care? Hambrick and his team wanted to develop a predictive model of performance that took into account the top team's composition, a model that would help them place bets with accuracy about which company would excel and which would not. Such information would be of obvious interest to a range of people beyond a group of academics, including investors, financial analysts, and executive teams considering a merger or acquisition.

Hambrick and his team bet that educational and functional heterogeneity

would enhance decision-making (and therefore an organisation's performance) and, overall, their bets paid out – but not every time. The nuances reflected whether the decision was more strategic and pre-emptive in nature (that is, an action) or reactive to a competitor's move (that is, a response). The diversity story never seems to be a simple one.

So what was going on? Hambrick and his team looked at the types of decisions the airlines made and classified them as either an 'action' or a 'response'. Not all actions and responses are of the same calibre, so the researchers developed measures to assess the competitive magnitude of a company's activity, namely its strategic significance (for example, a merger and acquisition or a substantial investment), noteworthiness (that is, the quantum of public attention generated) and scope (that is, the degree to which it affected other company operations). They also considered competitive speed, that is the length of time a company took to execute an announced decision ("action execution speed"), generate a response to a competitor's move ("response generation speed") and execute a planned response ("response execution speed"). It was as a result of this high level of detail that Hambrick and his team were able to determine that airline companies with greater top team diversity demonstrated greater competitive propensity, which can be described as a tendency to act strategically, and to make decisions with greater competitive magnitude, than their homogenous colleagues.

Hambrick's findings call to mind the insights of Alan Joyce, CEO of Qantas, we quoted in the Introduction. And if we look at the value Joyce has placed on top team diversity (both gender as well as functional and educational diversity), it appears to be a strategy that has paid off in the long term for Qantas, as Hambrick's study predicted. In particular, while other airlines failed during the six years Joyce has been CEO of Qantas⁶⁹, particularly during the GFC⁷⁰, Joyce undertook a program of substantial transformation, fleet acquisition and operational expansion.

69 Joyce was appointed as CEO of Qantas in November 2008: <http://www.qantas.com.au/travel/airlines/qantas-ceo/global/en> retrieved 23 June 2015.

70 In August 2009, Qantas reported that in the previous 12 months 50 airlines had collapsed, "the highest number of failures in aviation history" <http://www.qantas.com.au/travel/airlines/future-flying/global/en> retrieved 23 June 2015.

And, as the financial results posted in August 2015 reveal, those moves have generated significant profits both on international and domestic routes⁷¹.

Going back to Hambrick's study, he and his team also found that *both* functional and educational diversity played a positive role in terms of the noteworthiness and scope of a top team's decision (that is, its out of the box and expansive nature). On the other hand, those aspects of diversity played a retarding role in execution speed, and one can easily surmise why: it takes longer to understand divergent views and agree on a unified position. Similarly, the more heterogeneous the top team, the slower it was to generate or execute a response to a competitor's move, although when it did make a move the move was, once again, likely to be noteworthy and large in scope.

So overall, heterogeneous teams were more likely to act or respond strategically and with boldness. On the other hand, these teams made decisions more slowly and were less likely to respond to a competitor's action with a tactical counter play. Does this slowness matter? Not in the overall scheme of things. The researchers found any short term challenges associated with top team educational and functional diversity were more than compensated for in the long term in terms of their company's growth in market share and profit⁷².

One last point on Hambrick's study: because the researchers had examined the topic with such a fine level of detail, they were able to distinguish between functional and educational heterogeneity and the impact on different aspects of decision-making. One intriguing difference between the two was that functional heterogeneity positively influenced the significance of the response, while educational background had a negative effect and, additionally, the effect sizes were sometimes

71 As at 26 February 2015 "Qantas International was profitable for the first time since the Global Financial Crisis, with underlying EBIT of \$59 million representing a turnaround of \$321 million on the prior corresponding period. The business is expected to achieve its target – announced in 2011 – of a return to profit in financial year 2015. In the domestic market, Qantas and Jetstar reported combined underlying EBIT of close to \$300 million": <http://www.qantasnewsroom.com.au/media-releases/qantas-half-year-2015-financial-results/>. On 20 August 2015 Qantas announced results for the full financial year, and "its strongest profit since before the Global Financial Crisis, a \$505 million capital return to shareholders and a Boeing 787 Dreamliner order to start a new era for Qantas International. For the 12 months to 30 June 2015, Qantas reported an underlying Profit Before Tax of \$975 million and a Statutory Profit Before Tax of \$789 million. The underlying result is a turnaround of \$1.6 billion compared with financial year 2014, including Qantas' best ever second half performance, with all segments of the Qantas Group reporting robust profits and returning their cost of capital." <http://www.qantas.com.au/infodetail/about/investors/mediaReleaseResults15.pdf> retrieved 26 September 2015.

72 Hambrick, D. C., Cho, T. S., and Chen, M., (1996) The influence of top management team heterogeneity on firm's competitive moves. *Administrative Science Quarterly* Vol 41 (4) pp. 659-684.

different, with educational heterogeneity more strongly influencing the propensity to act than functional heterogeneity. It's challenging to make absolute sense of these variations: the best that can be said with a high level of certainty, is that both seem to independently influence decision-making, meaning that diverse thinking is enhanced by the presence of both educational and functional difference. They are not a pigeon pair, but work well in combination.

Taking a more intuitive approach to explain these variations, one can well imagine that if all of the top team roles were filled by people from one educational discipline (which is not unknown in accounting firms, legal firms or engineering companies), it would diminish their diverse thinking even if they were occupying functionally different roles. Similarly, if all of the top team roles were functionally similar, even if role incumbents were diversely educated, the role similarity would constrain their thinking. One can also imagine role and educational background having different impacts on an individual leader, given that in top teams leaders are often unlikely to be working in line with their original training (for example, Deloitte Australia's former Chief Strategy Officer studied engineering).

Our hypothesis is that when an individual is operating in a role consistent with their original training (for example, Chief Legal Counsel), then their perspective is more cemented; whereas, those who trained in one field but now operate in another will have lost some of their original internal diversity world and gained another. This might also imply that the degree to which leaders stay close to their original thinking worlds is likely to reflect a strength in the diversity of perspectives at the top table, but the degree to which people have become generalists by moving between roles, would reflect greater dilution of perspectives. On a more positive note, it would also mean that generalists would have greater insight into another's perspective, having passed through that diversity world.

The Enigma codebreakers

To a significant degree, Hambrick's research was merely verifying a commonly held belief in the value of discipline and functional diversity, a belief that was manifested in the selection of team members to participate in the UK Government's Code and Cypher School at Bletchley Park, Buckinghamshire. Whereas previous codebreaking teams in war time were dominated by linguists and classicists, the

team assembled to break Germany's Enigma machine at the beginning of World War II was deliberately balanced by also including mathematicians and scientists. This diversity was later extended even further to include the British chess champion, crossword aficionados, a curator from the Prague Museum, an authority on porcelain and expert bridge players.⁷³

Why such a radical strategy? Fundamental to Hitler's military campaign was his Blitzkrieg tactic of rapid attack facilitated by speed of communications. Every day, the German Army would transmit messages (Enigma cyphers) to its Armed Forces in Europe and separately to North Africa, as would the Luftwaffe and Kriegsmarine. Four separate codes, issued daily, to be decoded by the Enigma machines. Armed with an Enigma machine, but no code book, the British team worked feverishly every day to crack the cyphers as soon as possible, and certainly before the clock struck midnight and the cycle started again, in order to communicate vital information to their troops.

Enormously stressful and complex, the success of the British team in cracking the Enigma cyphers multiple times has been attributed to their diverse perspectives and the leadership of the brilliant Alan Turing. As Simon Singh describes it in his engaging book on codebreaking, *"an intractable problem would be passed around the hut (where they worked) until it reached someone who had the right mental tools to solve it, or reached someone who could at least partially solve it before passing it on again"*.⁷⁴

Multi-disciplinary teams

For those who work in the scientific community, the success of the Enigma codebreakers would be well known and Hambrick's findings would come as no surprise. Indeed, scientific highlights sit at the intersection of disciplines. Witness for example, the ground-breaking discovery of the molecular structure of DNA, recognised via the 1962 Nobel Prize for Physiology or Medicine. This achievement drew on knowledge from chemistry, biology and physics: the areas of expertise covered by Rosalind Franklin (chemistry), Maurice Wilkins (physics), James Watson (zoology) and Francis Crick⁷⁵. As Professor Jonathon Cummings from Duke University and his

⁷³ Singh, S., (1999) *The code book: The secret history of codes and code breaking*, Anchor Books, New York.

⁷⁴ Singh, S., (1999) *ibid* Chapter 4.

⁷⁵ Page, S. E., (2007) *ibid* p. 29.

colleagues recently described it, *“A belief that scientists gain from exposure to different approaches, and that important problems require heterogeneous research groups, has taken hold across the sciences. Rather than depending on the gradual flow of ideas from one field to another, policy makers are promoting research that integrates the contributions of different experts no matter where they reside”*⁷⁶.

Indeed multi-disciplinary teaming has been a fundamental operating principle for such a long period of time that Cummings and his colleagues from Duke and Carnegie Mellon University and different faculties (School of Business, Human-Computer Interaction Institute and Language Technologies Institute), themselves living proof of the normalcy of inter-disciplinary and inter-faculty teams, decided to undertake a longitudinal study on heterogeneity and productivity. The question they asked was: is multi-disciplinary diversity really delivering its espoused value or have the teams become unwieldy many-headed beasts?

Cummings and his colleagues examined the nature and output of 549 research groups, which had been funded by the National Science Foundation between 2000 and 2004. In particular, they measured the productivity of the groups in 2009, that is, up to nine years after the research had been conducted, in terms of the number of publications produced (for example, articles, book chapters and conference papers). The total was 46,850 publications. More than just measuring quantity of output, Cummings and his team measured the *quality* of the research insights by considering the number of times an article was cited by others, on the basis that scientists will only cite research if it is both innovative and rigorously conducted.

As for the size and composition of the 549 research groups, the sample comprised a total of 2,200 principal investigators, together with numerous other staff, researchers and students. The study categorised the research groups according to three main dimensions: number of disciplines (1–4 or 4+), universities (1–7 or 7+) and principal investigators (2–13 or 13+).

Critically, Cummings and his colleagues found that the number of principal researchers increased levels of productivity (“many hands make light work”). However, after a certain point the group became too large and the productivity

76 Cummings, J. N., Kiesler, S., Zadeh, R. B., and Balakrishnan, A. D., (2013) Group heterogeneity increases the risks of large group size: A longitudinal study of productivity in research groups. *Psychological Science* Vol 24(6) pp. 880-890.

per person diminished (“too many cooks spoil the broth”). Further, they found that discipline and university diversity, in general, added little value beyond group size. In particular they found that,

“productivity in research groups lowest in heterogeneity (one discipline or one institution) increased with more members. . . . At medium levels of heterogeneity (three disciplines or four institutions) productivity in groups also increased with more members, but not as much. . . . Productivity in groups highest in heterogeneity (four or more disciplines or seven or more institutions) did not increase with more group members.”

To give a sense of the effect of their findings, Cummings found that an average group generated 85.5 unique publications. A five-member group from three disciplines produced an average of 119 publications; whereas, a nine-member group from three disciplines produced 150. While 150 is obviously larger than 119, on a per person basis, the group of five produced more papers per person (24) than the group of nine (17).

How can the findings of Hambrick and Cummings be reconciled? Cummings’ interviews with 55 of the principal researchers hold the clue. Far from a multiple disciplinary team providing an immediate source of inspiration and innovation, the researchers spoke about problems with communication (64%), sharing of information (55%), resources (24%) and the logistics of cross-campus meetings. They spoke of researchers’ lack of familiarity with each other’s disciplines as interfering with group chemistry as well as creating conflicting aims and agendas.

Thankfully however, Cummings found exceptions to this general state of affairs, consistent with the picture and power of intersecting disciplines Johansson lovingly describes in *The Medici Effect* and Hambrick saw in his findings. In particular, Cummings found “a few heterogeneous large groups with unusually high publication rates”⁷⁷. These groups were characterised by their strong leadership, the existing familiarity between some members, clear objectives and communication protocols, and frequent status reports by all members. Additionally, team members spoke about

77 Cummings J. N., *et al* (2013) *ibid* p. 888.

the time and energy they invested in learning about others' disciplines and language. These powerhouse groups worked exactly as expected – they created collective intelligence from their diverse disciplines as reflected in their overproduction of quality publications. However, they were the exception, not the rule.

Working across disciplines and university locations was obviously a challenge for all of the 549 teams. The promise of perspective diversity and collective intelligence was, by and large, no more than a promise. As will become clearer in Part 2: Biases and behaviours, everyone works under the spells of homophily and in-group bias. Both of these biases cause people to prefer, and connect with, others who are more similar than different, including those similar in terms of discipline and location. To correct this bias takes effort. Merely placing people in a multi-disciplinary team is necessary but not sufficient to generate diversity of thinking.

Further, while it is always true to say that teams benefit from good leadership, this was obviously of critical importance for Cummings' powerhouse groups and Turing's codebreakers. These groups had leaders who not only provided team members with a sense of direction and purpose, but ensured that all members were actively included. Indeed active inclusion is vital when team members are educationally diverse because there are inherent challenges associated with bridging diverse mental models and language, let alone personal and tribal biases.

Bletchley codebreaker Peter Hilton described those characteristics in Turing: *“Alan Turing was obviously a genius, but he was an approachable, friendly genius. He was always willing to take time and trouble to explain his ideas; but he was no narrow specialist, so that his versatile thought ranged over a vast area of exact sciences”*.⁷⁸ In Part 3: The special role of inclusive leaders and leadership groups, we return in detail to the critical role played by an inclusive leader in helping a diverse group to collaborate.

We have placed a lot of weight on Hambrick's and Cummings' studies, as well as the Bletchley Park exemplar, in reaching the conclusion that functional and educational diversity create diverse thinking worlds, and these directly introduce diverse perspectives into a team. We are not alone in drawing this conclusion. A far more extensive review of 80 studies, conducted in 1998 by

78 Singh, S., (1999) *ibid* Chapter 4.

Columbia University Professor Phillips (nee Williams) and Stanford University Professor O'Reilly III, led to a similar view⁷⁹. In particular, Phillips and O'Reilly concluded that both laboratory studies and field research demonstrate that, in general, background diversity (and particularly functional roles) has a direct positive effect on group performance because it stimulates task conflict and expands diversity of perspective⁸⁰.

This theme received even more dedicated attention from University of Michigan Professor Page in his 2007 book: *The Difference: How the power of diversity creates better groups, firms, schools and societies*.⁸¹ Having reviewed the literature and undertaken his own calculations (Page holds degrees in mathematics and economics), Page concluded that cognitive diversity, as opposed to identity (or demographic) diversity, has a direct and positive impact on a group's ability to make predictions and solve problems. By 'cognitive diversity' Page means one's perspective and mental models, and his regular reference to functional and educational backgrounds speaks to the primacy he gives to these influencers. His significant contribution to the topic of diversity of thinking is one we discuss further in 1.2 Diversity of approach and the six building blocks.

Taking a scattergun approach to group composition

There's a final aspect to Hambrick's study that sheds light on what we call 'taking a scattergun approach' to diversity. By this we mean that when there is *certainty about the importance* of perspective diversity, but *uncertainty about the elements* that create a broad world view, we often see a scattergun or paintbox approach ("I'll have a bit of blue, a bit of yellow and some red") to group composition. It's what occurred in the PP&L brainstorming session.

To some degree, the scattergun approach also characterised Hambrick's exploration, meaning that he looked at factors beyond educational and functional heterogeneity as potentially influencing team performance. In particular, he and his team examined tenure differences. Hambrick and his team would not be the first people to assume

79 Williams, K. Y., and O'Reilly, C. A., (1998) Demography and diversity in organisations; A review of 40 years of research. *Organisational Behavior* Vol 20 pp. 77-140.

80 Williams, K. Y., and O'Reilly, C. A., (1998) *ibid* pp. 101-102.

81 Page, S. E., (2007) *ibid*.

that differences in team member tenure influence perspective and, in particular, that newer team members might bring a different point of view (“fresh set of eyes”) because of their newness. Indeed, this issue has intrigued many researchers, as Williams and O’Reilly III also noted in their review of the 80 studies on diversity and team performance⁸².

We hypothesise that this expectation is driven by a common personal experience of joining a new organisation or group and noticing practices and behaviours, both good and bad, that the locals seem to be oblivious to. It is the rawness of the change between an old situation and the new that means people see, and care about, the differences, but over time they seem to lose the care factor (acclimatise) and the clarity as well. This experience might, quite reasonably, lead one to believe that tenure should be a factor in our 360 degree radar model, and that, in our menu of options, differences in team member’s tenure should be intentionally factored in. But this is not what Hambrick’s research showed.

Hambrick and his team calculated the diversity of organisational tenure among the members of top teams in 32 airlines and then looked at whether it impacted the top management team’s decisions. In comparison to the impact of educational and functional differences between team members, Hambrick found that differences in tenure did not significantly influence any aspect of the team’s decision in terms of, for example, its scope or significance. Indeed Williams and O’Reilly III found that “overall tenure heterogeneity is associated with less effective group process as indexed by outcomes such as integration, communication and conflict”⁸³.

For us, this finding on tenure was another reminder of the importance of taking a more disciplined approach to diversity of thinking rather than one based on a hunch. It may be that tenure influences the rawness of a perspective, meaning that newcomers see and feel it keenly, but not that old-timers are blind. In this way, tenure does not create a perspective difference in which people see a situation from a very different angle: it is more like a continuum.

To take the tenure example a little further, and using the 360 degree radar metaphor, think of blips on the radar that are closer to the centre, and those that are out at the perimeter. They are all within one’s arc of perspective, but some have

82 Williams, K. Y., and O’Reilly, C. A., (1998) *ibid* pp. 93-99.

83 Williams, K. Y., and O’Reilly, C. A., (1998) *ibid* p. 93.

distinct colour and shape, and others have to be worked at to be perceived clearly. Newness to an organisation would create a strong blip at the centre of one's arc, but over time it would move to the perimeter. Caring responsibilities might provide another example of this continuum. The period of parenting of young children, or caring for an aging parent, is likely to be close to the arc centre for those who are in the midst of that experience. For those who have passed through that life stage there is still a perspective, but the intensity has diminished. In contrast, someone who has not experienced significant caring responsibilities at all is likely to have a different arc of perspective, particularly in relation to how they perceive the workplace and work/family integration.

The bottom line is...

1. Functional roles and educational disciplines both create diverse thinking worlds with their own paradigms and jargon, and they have a direct impact on diversity of thinking in teams.
2. The combined impact of diverse thinking worlds creates slower but bolder and more robust decisions in the long term.
3. Multi-disciplinary teams out-perform single disciplinary teams, but only if time and attention is devoted to bridging communication boundaries and creating clarity about objectives, and this is facilitated by an inclusive leader.

To sum it up

Drawing these threads together, Hambrick's airline study clearly demonstrated that both functional and educational diversity enhance diversity of thinking at the top table and thus the capacity to make robust decisions about complex issues.

Cummings' university research adds colour to Hambrick's findings in relation to discipline diversity, highlighting the challenge for team members to communicate across diverse thinking worlds, but the clear benefits when they get it right. We expect that Hambrick's executives were highly motivated to merge their perspectives and devoted sufficient time and energy to bridge the gaps, similar to the powerhouse groups in Cumming's study. Both functional, and to a lesser extent educational, diversity broadens the perspective of a team, and therefore the way a problem is defined. These factors should also be considered in our radar of perspective.

Concluding comments on diversity of perspective

In this chapter we have discussed our 360 degree radar model of diversity of perspective, and in particular the importance of attending to the composition of a team in terms of race/culture diversity, gender mix as well as functional and educational diversity. Aside from drawing from a broader pool of talent, we have been at pains to point out that much of the benefit of these surface level differences comes from their indirect impact on group dynamics (race and gender) and the direct expansion of a group's thinking worlds (via functional/educational differences). These factors are not substitutes for ability – that much is a given – these are value-adds to create diversity of thinking.

Communicating these insights – about the value of racially diverse groups, gender balanced groups and functional and educational diversity – is a delicate issue given the history of stereotypical views about race, gender and even occupational groups. We do not support those stereotypes and do not want our views to be misinterpreted. Not only are such stereotypes misguided, but they place unfair pressure on an individual to come up with “the big idea” or an insight that represents the whole of their demographic group. They imply that diversity comes from a person, whereas, as Professor Page notes,

“Neither a person nor an apple can be diverse. Diversity is the property of a collection of people – a basket with many kinds of fruit.”⁸⁴

The indirect value of racial and gender diversity, and the direct value of functional and educational diversity, to the overall diversity of a group's thinking is a much richer but more complex message to communicate. More importantly it offers a more realistic view about how to create diversity of thinking and highlights the inherent risks and limits of visibly homogeneous groups.

Of course there may be other aspects of diversity that influence an individual's perspective, or a group's dynamics, such as religious beliefs, socio-economic status, age or being in a minority (on this latter point, Liswood likens minority status to the perspective of a mouse in a room with an elephant: the mouse knows a lot

84 Page, S. E., (2007) *ibid* Prologue.

more about the elephant than vice versa⁸⁵). Our discussion has only highlighted those characteristics for which there is reliable research about how the diversity characteristic operates and its impact on *perspective* – that is, enabling a group to see (and therefore define) more of a scenario.

We have taken a conservative approach when drawing conclusions, relying on research (academic as well as field and case studies) that illuminates whether a diversity characteristic creates a significant and reliable influence on an individual's world view or the group's thinking process. We don't say that the factors we have identified always influence an individual's perspective, or every group, but they create an effect that is more than noticeable when data are aggregated.

And of course this is not a perfect science: everyone is unique and one's perspective is driven by a combination of factors, each with different weightings. For example, a migrant who has emigrated recently is likely to have a different perspective from one who emigrated as a child. Our conclusion is that a person's race/culture, sex and function/education all influence an individual's perspective to some degree (function/education much more so than race/culture or sex), and that all three influence a group's perspective. This means that each of these three factors should be taken into consideration when creating a team, especially when that team is given a 'perspective' task, such as scanning or sensing the landscape, idea generation and filtering feedback. And even more so if that team is operating at a very senior level, such as a board, sub-committee or executive group.

Particular questions for decision may require additional perspectives from team members with specialist insight (for example, developing a financial product for a financially illiterate market would require the perspective of those who are and are not literate). Our radar includes the basics that we suggest apply across all teams charged with the responsibility of making decisions.

Our fundamental proposition is that to develop a broader perspective on an issue – to see a situation from multiple angles – one needs to be conscious of the personal characteristics of the team members. Along with all of the other factors that determine whether someone is invited to the decision-making table (for example their level within the organisation, role and knowledge), our argument is that attention

85 Liswood, L., (2010) *ibid* Chapter 2.

to these three main diversity characteristics will enhance the likelihood that the issue will be framed broadly, thus creating greater foresight about risk and the ability to spot new opportunities. Put simply, racial diversity helps trigger curiosity and thus prompts attention and the exploration of group members' perspectives; gender diversity helps promote collaborative behaviours and thus perspective sharing; and functional as well as educational diversity provides a group with access to distinct thinking worlds.

Once a team has been selected with an eye to diversity of perspective, its members can have a higher level of confidence that their breadth of perspective will allow a problem or scenario to be defined broadly. This sets up the decision makers for their next decision-making activity: developing a solution. Which brings us to the next chapter, 1.2 Diversity of approach and the six building blocks, where we discuss a robust and disciplined way of problem-solving. This method provides a practical alternative to the random brainstorming we described in the Pacific Power & Light story, discussions which are driven more autocratically, and even a supplement to more formal decision making protocols.

Insight 1

CLARITY OF THINKING

In addition to the standard factors that determine whether someone is invited to be part of a decision making group (for example their experience, capability, level, role and knowledge), attention should also be paid to the overall surface level diversity composition of the group in terms of race/culture, gender balance and function/discipline mix.

These three factors will enhance the likelihood that a group will generate a broad perspective of a scenario, thus expanding horizons and reducing the significant risk of a blind-spot inherent in an homogenous group.

Defining a scenario or problem broadly is a critical precursor to problem solving.

1.2 Diversity of approach and the six building blocks

To recap, perspective diversity in our ‘radar’ model, which allows groups to define a situation broadly, is stimulated by what we call the ‘surface level’ diversity of group members, and in particular racial/cultural differences, gender balance and functional and educational diversity. In contrast, ‘deep level’ diversity refers to personal mental models (or approaches) for solving problems, which are sometimes not obvious even to oneself.

What are people looking at? (perspective) + what do people do now? (approach) = situation definition + problem solving

In this chapter, we look at how groups can harness deep level diversity – what we call “Diversity of Approach” (DoA) – to improve the quality of conversations, ideas and ultimately the proposed solutions. This time, instead of a radar, we are using the metaphor of six building blocks to bring to mind the image of solidity and structure. Each building block shows a different way of approaching a situation, with the cumulative effect being the development of a strong, multi-dimensional solution. These six approaches are:

1. Outcomes
2. Options
3. Process
4. Evidence
5. People
6. Risk.

Our journey of understanding: noticing people’s mental models

Let’s take a moment to look at how we settled on the six approaches. We worked from first principles, building our own conceptual model based on observations and then testing our hypotheses.

In our first foray into exploring individual approaches to problem-solving, we listened (literally) to a broad range of people to hear what they talked about when they were solving problems, and specifically, their focus areas. What words did they

use repetitively? What questions did they ask? And what did they seem to accept without question? We developed a theory that people's educational backgrounds (especially if they had worked in that discipline) would influence their approach to a problem: for example, we assumed that an engineer would pay more attention to process and someone in Human Resources would pay more attention to people. Our observational research showed us that our theory was far too simplistic: sometimes there was alignment between someone's educational background and the way they approached a problem, but more often than not our assumptions were proved incorrect. We should have known that such simplicity, based on stereotypes, would have been wrong.

More importantly, what we did learn was that people seemed to orient towards complex problems in one of six ways, and this gave us a starting framework to construct the six building blocks. In particular, even though they might have used slightly different words, we *heard* people talk about process, evidence, people, risks, objectives and options⁸⁶.

We can see threads of our findings in Edward de Bono's 1985 book, *Six Thinking Hats*⁸⁷. De Bono thought that any scenario should be critically analysed according to six factors, namely (and in the order he describes them) 'facts & figures' (white hat), 'emotions & feelings' (red hat), 'cautious & careful' (black hat), 'speculative & positive' (yellow hat), 'creative thinking' (green hat) and 'control of thinking' (blue hat). There is considerable overlap with our findings about people's individual preference to use one of six problem-solving approaches: evidence (white), risk (black), options (yellow and green), process (blue) and feelings (red) – although De

86 We're not the first to have observed that people use different approaches to solve problems. British Psychologist Michael Kirton, for example, observed individual differences between people in terms of the way they solved problems and characterised these as falling on a spectrum from adaptation (people who seek to "do things better") and innovation (people who seek to "do things differently"). Aligning Kirton's Adaptation-Innovation Theory with our own building blocks model, we speculate that these adaption/innovation preferences are likely to play into whether someone takes more of a process approach to problem solving or a more options based approach respectively. Where we are strongly aligned with Kirton is his view that valuing each of these preferences is critical to leveraging diversity of thinking and neither should prevail. Interestingly, Stum comments that "the leadership pendulum has shifted from valuing the adaptor over the innovator in the 1970s and 1980s to preferring the innovative leader in the 1990s and 2000s. Kirton's desire was to promote that each person is creative within his or her cognitive style. One style is not better than the other and both are needed in organisations": Stum, J., (2009) Kirton's Adaption-Innovation Theory: Managing Cognitive Styles in Times of Diversity and Change. *Emerging Leadership Journeys* Vol 2(1) pp. 66-78 at p. 75.

87 De Bono, E., (1985) *Six thinking hats: An essential approach to business management*, Penguin Books, USA.

Bono's red hat had more of an internal angle, thinking about intuition, whereas our research found that when individuals focus on a problem with a people approach, they were more "other" oriented, that is, on employees or customers.

Intriguingly, De Bono did not have a discrete focus on outcomes, rather he linked together process and outcomes in his blue hat. Indeed, De Bono's whole approach was to focus a group on the process of thinking (using different hats at different points). Could this focus on process represent an historical legacy? Could it be that in the 1980s (and perhaps earlier) there was a more universal assumption that outcomes would take care of themselves if people attended more to process? Or is this too long a bow to draw? Certainly there was a general wave of activity attending to Total Quality Management (a more process oriented framework), when De Bono published *Six Thinking Hats*.

Fast forwarding to the here and now, could the current general focus on outcomes (as an orientation in its own right) represent a reaction against the focus on process?

Musings aside, to a degree De Bono has laid some of the foundation for our work. He created a platform of acceptance that a group should discuss all six aspects of a problem to generate strong critical thinking. What he seems to have missed was that individuals tend to favour one or perhaps two of the six approaches.

If you listen to others, or read their autobiographies, you can see that favouritism as well. Certainly our experience has been that mental models are evident if one knows what to look for, and listens closely. Take for example Chris Hadfield, former Canadian Astronaut and Commander of the International Space Station (ISS) in 2013. Hadfield's autobiography, *An Astronaut's Guide to Life on Earth*, is a textbook example of a risk approach to problem-solving.

Hadfield calls himself a "realist"⁸⁸ who works to a mantra of "Be ready. Work hard. Enjoy it."⁸⁹ But it is his emphasis on "Be ready" that gives us insight into his mental model. His autobiography is an almost constant stream of examples about how he prepares for, and minimises the risk of, failure. He talks of training "repetitively on safety procedures on board the ISS even though you think you know them inside

88 Hadfield, C., (2013) *An Astronaut's guide to life on earth*, Random House Canada, p. 38.

89 Hadfield, C., (2013) *ibid* p. 42.

out”⁹⁰; taking “Russian classes for years”⁹¹; debriefing flights in excruciating detail; practising for thousands of hours in “simulations” (including “contingency sims” in which astronauts plan their own deaths in “granular detail”⁹²); even planning for errors in sims (that is, that the NASA simulations of failures may also have inbuilt failure points). As Hadfield describes his mental framework,

“In a real crisis... a group hug is not going to save you. Your only hope is knowing exactly what to do and being able to do it calmly and quickly... No matter how bad a situation is, you can always make it worse.”⁹³

Given that space travel is inherently dangerous, it makes logical sense that Hadfield’s dominant approach to problem-solving is one of risk. What is of interest is that Hadfield takes his finely honed sense of risk and applies it to the rest of his life. Indeed his autobiography is designed to share the lessons he has learned as an astronaut “to life on earth”. In one delightful example, Hadfield explains how he felt compelled to learn “Rocket Man” on guitar, just in case he might be called upon to play it. Now why would that occur?

Hadfield was taking part in a regional air show in Ontario when he learned that the show would be happening at the same time as an Elton John concert. That timing coincidence triggered a range of “What if?” scenarios in Hadfield’s mind, even though he acknowledged that “the chances of a superstar interrupting his performance to promote a regional air show were quite slim”. In one of those “What if?” scenarios, Hadfield imagined himself being asked to play “Rocket Man” on stage with Elton John (What if Elton John was secretly a space geek?⁹⁴), so Hadfield “sat down and learned how to play it and practiced it to the point where (he) was reasonably confident (he) wouldn’t be booed off stage”⁹⁵. Of course it didn’t happen (although Hadfield did attend the concert and met Elton John), but as Hadfield says,

90 Hadfield, C., (2013) *ibid* p. 45.

91 Hadfield, C., (2013) *ibid* p. 44

92 Hadfield, C., (2013) *ibid* p. 58.

93 Hadfield, C., (2013) *ibid* p. 65.

94 Hadfield, C., (2013) *ibid* p. 43.

95 Hadfield, C., (2013) *ibid* p. 43.

“... I don’t regret being ready. That’s how I approach just about everything. I spend my life getting ready to play “Rocket Man”. I picture the most demanding challenge; I visualise what I would need to know how to do to meet it; then I practice until I reach a level of competence where I’m comfortable that I’ll be able to perform... that conscious, methodological approach to preparation is the main reason I got to Houston. I’ve never stopped getting ready. Just in case.”⁹⁶

Ironically, we initially missed Hadfield’s ‘risk’ approach during our observational phase defining the six mental models (we started with only five), so once we settled on the list of six we did a few more retests to see if we had failed to notice another different approach. In particular, we ran a few surveys asking people about their approaches and included an ‘other’ as approach number seven. There was never much take up for the ‘other’ category and, in fact, we dropped that option after conducting a random sample survey of 3,000 employees in one particular organisation and finding that the six individual approaches represented 93% of responses, with almost all of the remaining 7% telling us that they used a combination of the approaches (rather than a completely different approach).

The bottom line is...

1. Each person has a deep level of diversity in terms of how they approach problem solving.
2. Individuals may not be aware of their tendency to approach a problem using one or two dominant mental frameworks from a possible pool of six.
3. The six approaches cover: outcomes, options, process, people, evidence and risks.
4. 93% of people self-identify that one “approach” is more important than others.
5. Understanding that there are six different ways of approaching problem solving helps to interpret and understand how others approach a problem.

⁹⁶ Hadfield, C., (2013) *ibid* p. 44.

The six approaches: who does what?

Now that we had the set of six confirmed, we wanted to understand how many approaches people use adeptly, whether individuals would identify one approach as more important than all of the others and what sort of individuals gravitated to what sort of approach.

Over time we realised that leadership groups are overweighted with individuals who focus on outcomes and options, and significantly underweighted in terms of leaders who approach problems by thinking (dominantly) about process, evidence, people or risk. This realisation began with a side-bar finding of research conducted in 2009 by US based think-tank Catalyst on cascading bias⁹⁷ and was shaped by our experiences working with a broad range of leaders working in different countries and industries. It's a short story with three brief chapters.

Chapter 1: observing the greater representation of males in positions of seniority, Catalyst was interested in identifying how gender bias infiltrates decision-making about talent in terms of decisions about recruitment, promotion, assignment allocation and succession. They examined written documentation from approximately 110 talent management systems in 19 different industries and found that, in general, nothing on paper predicted a gendered outcome, that is, the language and processes appeared gender neutral. The answer lay in the influence of senior leaders on the selection criteria and stereotypical assumptions applied by decision-makers, which were often unconscious and therefore not known to the decision makers themselves. Everyone had a mental prototype of the perfect leader and it looked pretty much like a clone of the existing senior leadership.

In particular, Catalyst found that the top three characteristics used to describe desirable senior executives were that they were: 'action oriented', 'results driven' and 'problem solvers'. These are great characteristics and, of course, both men and women can be good at all three. The problem is generated by masculine and feminine stereotypes (namely men 'act' or 'take charge' while women 'take care'⁹⁸) which gave a slight presumptive advantage to men (that is, men are assumed to

97 Warren, A. K., (2009) *Cascading gender biases, compounding effects: An assessment of talent management systems*, Catalyst, New York.

98 Catalyst, (2007) *The double-bind dilemma of women in leadership: Damned if you do, doomed if you don't*, Catalyst, New York.

be action oriented, results driven and problem solvers), whereas this is likely to require a proof point by women. And while it might seem positive that women are presumed to be caring, collaborative and good communicators, Catalyst found that those capabilities were ranked below the top three desirable leadership traits.

The side bar was this: across the 86 companies that participated in Catalyst's research survey, eight out of ten described their senior leaders as 'action oriented'. Stripping away the other findings about gender, and how much easier it is for a man to ride on the coat-tails of positive assumptions, just look at that action oriented finding in isolation for a moment. Decision makers were operating in a closed loop: they looked up at leaders and saw this characteristic, and then they sorted through the next batch of leaders to replicate this characteristic, each time re-creating the prototype. We're not making a comment on the desirability of an action versus a reflective orientation, but using this study to make the point that, like a cascade, the characteristics and assumptions about how to think and behave start at the top and flow down through the organisational ranks. It was this keystone finding that helped us make sense of our experiences working with top teams and started us on a trail of discovery.

Chapter 2: for more than five years we have been working with executives, board members and senior managers on how they can become more inclusive leaders, and adapt to a more diverse workforce and customer base⁹⁹. Our focus has been on helping leaders to become more aware of individual biases (both conscious and unconscious) and to make behavioural and organisational changes. Through diagnostics, group workshops, individual coaching and self-paced activities (much like homework), we have observed common patterns, no matter what the industry or country.

Firstly, leaders were highly likely to undertake tasks we set them as homework if they involved discrete *activities* designed to generate personal insight about bias (for example, "watch this video", "do this test"). Secondly, (in order of frequency),

99 Our thinking on inclusion is captured in Bourke, J., and Dillon, B., (2012) *Waiter, is that inclusion in my soup? A new recipe to improve business performance* <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/human-capital/deloitte-au-hc-diversity-inclusion-soup-0513.pdf> retrieved 28 June 2015 and Bourke, J. and Dillon, B., (2011) *Inclusive leadership: Will a hug do?* <http://www2.deloitte.com/content/dam/Deloitte/au/Documents/human-capital/deloitte-au-hc-diversity-inclusive-leadership-hug-0312.pdf> retrieved 28 September 2015. See also, Bourke, J., and Dillon, B., (2015) *ibid*.

leaders were likely to respond to their insights by taking corrective *actions* (for example, by actively creating connections with those in their out-groups, or developing meeting protocols to enable more team members to speak up). There's usually a strong sense of personal accountability and desire to take action (not surprisingly, given Catalyst's finding that leaders are usually action oriented), and that's a good thing.

What surprised us, however, was that leaders were significantly less likely to engage in a process to explore others' perspectives, even though we were very explicit at the instructional phase that the homework comprised three activities: see (observe), explore (ask) and engage (act), and one could easily interpret 'explore' as an action if one was so minded. Our hunch was that the bias towards action that Catalyst had identified in its research was manifesting itself in the behaviours of the leaders who attended our workshops. We became acutely aware that leaders would spend more time on personal actions rather than (other-centric) exploration. This is not to say that leaders were not reflective at all, but more that there was a bias to move straight from "I get it" to "I'll take it from here", rather than "I *think* I get it", "I'll need to expand my world view" and then "I'll take it from here". We saw individuals, and therefore groups, with a bias to act and we started to characterise this behaviour as "aim and fire" rather than "aim, check, fire".

Chapter 3: this insight led us to question whether, just like the action orientation bias of individual leaders, top teams shared a predominant approach to problem-solving. We thought that leadership teams, no matter what industry, might share similar approaches. We were mostly right: across all of the organisations we looked at (for example, in Mining, Fast Moving Consumer Goods, Professional Services, Property and Finance), private sector or public, leaders were more likely to take one of two approaches to problem-solving. And a little wrong: companies showed slight variations that seemed to reflect the influence of industry domains, so not all top teams were exactly the same. Overall however, it was a question of degree and the message was clear: top executive teams were much more likely to approach a problem or situation from only one or two angles, and even when individual leaders could have mitigated that bias (because they had an individual preference to approach the problem in a different way), that potential value was likely to go unrecognised and even to be seen as an irritant.

Having established the bias present in executive teams, we expanded our research field to encompass all levels of an organisation. Through surveys and interviews, we tested people's preferences by asking them to select from a list and identify the approach that they considered to be the most important when solving a problem. Here's how we framed the question to give that sense of tension and criticality.

"Imagine you are in a meeting. Your fingers are gripping the table as you listen to the debate because you know you will only get to ask one question about the problem that the team is trying to solve. What would you ask?"

1. Outcomes: what are the objectives/why are we doing this?
2. Options: what are the options/possibilities/what could we do?
3. Evidence: what are the facts/what is the evidence we are relying on/measuring against?
4. Process: what are the steps/processes that will be used, to implement the solution?
5. People: who is the audience? How will people (staff/customers) feel about the solution? How will we engage people?
6. Risks: what are the risks? What could go wrong? What scenarios should we plan for?"

To be clear, we assume that everyone can think through *all* of these dimensions, but each individual will have a bias that favours one dimension, and that bias will be elicited when people are asked to select the *most important* topic for discussion. You are probably thinking about which of the six approaches you gravitate towards by reading those topic areas and asking yourself that same question. Here's another way of working it out. Take a look at the supplementary questions which follow each of the six topic areas. Which of these can you easily build upon with even more questions? Chances are that one or two of your six lists will have a lot more detail than the others. To compare yourself to others, have a look at some of the supplementary words which we have heard people use in Figure 4. Now stand back and ask yourself – would I have thought of all of these aspects of each of the six approaches?

We also assume that each of these dimensions is equally important, and none naturally predominates. Standing back from the list and looking at it as a whole, it's hard to imagine that a robust decision could be made without thinking through

Figure 4: Diversity of Approach – self assessment

	Words	Questions
 <p>Outcomes</p>	<p>Future state Justification Achievements Goals</p> <p>Success Value</p>	<ul style="list-style-type: none"> • Why is this a problem? • What are we trying to solve for? • Is the intended future state clear? • What are the drivers for success? • What outcomes do we want? • What value will be created?
 <p>Options</p>	<p>Priorities Experiments Lessons Learnt Trials</p> <p>Ideas Feasibility</p>	<ul style="list-style-type: none"> • Have we explored other options? • What are other suggestions? • Is there a better way to do things? • What are the alternatives? • What has worked well before? • How else could we solve this?
 <p>Evidence</p>	<p>Applicability Sources Facts Variance Measures Data</p>	<ul style="list-style-type: none"> • Is this fact or opinion? • What do the data show us? • What hypothesis has been tested? • What research has been done? • Do we have the right information? • Were customer insights tested?
 <p>Process</p>	<p>Steps Sequence Techniques Structure Timing Tools</p>	<ul style="list-style-type: none"> • What's the first step in the process? • What are the deadlines to meet? • What dependencies are there? • What steps do we need to take? • When do we need to do this? • What is the process to follow?
 <p>People</p>	<p>Motivation Behaviour Capabilities Beliefs Culture Values</p>	<ul style="list-style-type: none"> • Who are our stakeholders? • What motivates people? • What makes them feel valued? • What does the culture look like? • Who will be most affected and how? • What capability will we need?
 <p>Risk</p>	<p>Scenarios Likelihood Assessments Failures Severity Mitigations</p>	<ul style="list-style-type: none"> • What are the uncertainties? • What does failure look like? • How can I assess the risks? • What scenarios should be anticipated? • What issues exist? • How can we mitigate the risks?

all of these dimensions. Now you have a sense of your preference, think about the messages, questions and discussions of the top team, or the board, what would you say is their primary focus? Thinking about an individual manager or leader or chair, what do they tend to talk about first, last, never? Over and over again, we found that individual members of leadership groups were likely to self-identify as primarily approaching a problem by thinking about topics one and two: namely outcomes or options¹⁰⁰. In fact, these two dimensions often seemed to explain about 70–75% of a leadership team’s orientation.

And what of the other four building blocks? When we ask a self-identifying question during workshops, we see about 20–25% of leaders select either people, evidence or process. Interestingly, very few, if any, leaders self-report that their primary approach is to think about risk (less than 5%), and we have conducted this research in insurance companies, in the military and among actuaries where we expected more skewed orientations. And here’s another interesting thing, very rarely do we have leaders say to us: “I can’t pick one, they are all important”. As with the survey we conducted of 3,000 people in which only 7% of people ticked “other” and in the free text told us that was because they used all six approaches or a combination thereof, it seems that most people do indeed have a personal preference to pick one (or at most two) specific tool(s) out of the toolbox and apply it to the problem at hand. This trend is evident in the table below, showing the responses of senior leaders in three different organisations (refer to Figure 5).

Figure 5: Six building blocks and senior leader profiles in three organisations

	Outcomes	Options	Evidence	Process	People	Risk	Other
A (finance)	42%	31%	15%	12%	0%	0%	n/a
B (commodities)	44%	35%	9%	3%	3%	7%	n/a
C (government)	47%	24%	2%	12%	8%	3%	4%
Average	44%	30%	9%	9%	4%	3%	

100 And it did not matter what order the items appeared in the list.

Responses of senior leaders in three different organisations

Are you thinking “Of course more of the leaders were focused on options and outcomes, rather than people, processes, evidence and risk. These things are sequential: first they focus on options and outcomes, then they focus on people, processes, evidence and risk”?

Or are you thinking “Leaders probably think about people, processes, evidence and risks at the same time as they think about options and outcomes. These are not considerations in isolation”? We wondered about those things as well and expected that the answers would not be simple. We know people don’t fit into neat little boxes and context is always influential. We agree there is some degree of sequencing: everyone needs to know a little about the outcomes before they think about the other aspects of problem-solving. There is also some degree of blurring: for example, everyone thinks a little about how they will do something (that is, process) at the same time as what they could do (that is, options). Let’s take each of those possibilities in isolation and tease out the implications, starting with sequencing.

If there is a natural sequencing logic to the answers, meaning everyone would think a focus on outcomes is more important than every other category, then one might expect that every leader (100%) would have selected that building block. But more than half of the sample does not. And, if there is a natural sequencing logic to the answers, one might also expect that the pattern of responses would be the same across all levels of the organisation, that is, it is not influenced by whether an individual is in the most junior or most senior position. But it isn’t. As figures 6 and 7 show, leaders and staff have different DoA profiles.

And then there’s the possibility of blurring between categories, meaning that when someone selects one building block, they have inherently considered another block. If there was inherent blurring, one would expect to see no pattern in the data, with everyone selecting a different response based on their particular way of blurring categories. But that’s not what occurs. Across organisations A, B and C, one can see a clear pattern emerging in the leadership groups, with a dominant focus on two building blocks and a minority focus on the other four. Secondly, one might expect to see 100% of respondents selecting “other”, knowing from the free text that respondents used that category when they thought all (or a combination) of the six building blocks are important. But, in fact, only 4% of leaders selected that option.

This leaves the simpler and more obvious explanation, to use Ockham's razor¹⁰¹, namely that leaders do *not* think that each of the building blocks is equally important. Does it matter? Even if we accept that the weighting of importance is not a perfect equal weighting (that is, exactly 16.6% per building block), wouldn't you have anticipated that more than 8% of leaders (taking the high water mark) would have said a focus on people (customers and staff) is the most important focus? And post the GFC, wouldn't you have expected that more than 7% of leaders would think risk the most important? Wouldn't you have hoped to see the greatest diversity of thinking in the leadership groups, knowing that this is where the most difficult and complex issues are debated and organisational strategy set? Would you be shocked to learn that there is greater diversity of thinking, in terms of diversity of approach, at the grass roots of an organisation?

Compare the responses of senior leaders in Organisation C with the most junior staff and you will see a significant difference in the distribution of scores across the six building blocks, and in particular a much more even weighting across four: outcomes, options, people and process. In fact, it's about double the difference each time, whether as an increase or a decrease (refer to Figure 6).

Figure 6: Six building blocks comparing responses of senior leaders and junior staff in Organisation C

	Outcomes	Options	Evidence	Process	People	Risk	Other
Senior leaders	47%	24%	2%	12%	8%	3%	4%
	x1.9 ↑	x1.5 ↑		x2.1 ↓	x2.4 ↓		
Most junior staff	24%	16%	8%	25%	19%	3%	4%

Being less extreme, what about if we compare the responses of senior leaders and staff more broadly, that is, including everyone up to the level of middle management, not just the most senior and the most junior? Here's what we found

¹⁰¹ 14th century philosopher and Franciscan Friar, William of Ockham, is credited with developing (or at least popularising) the principle "Pluralitas non est ponenda sine necessitate" (Plurality is not to be posited without necessity) which has become more widely known as "The simplest explanation is more likely to be the accurate one".

when we asked staff in Organisations A, B and C to answer the same question we had put to senior leaders, and gave them the six approaches to select from (refer to Figure 7).

Figure 7: Six building blocks and staff profiles in 3 organisations

	Outcomes	Options	Evidence	Process	People	Risk	Other
A (finance)	30%	19%	8%	21%	11%	4%	n/a
B (commodities)	46%	24%	16%	9%	3%	3%	n/a
C (government)	29%	20%	9%	25%	14%	3%	7%
Average	35%	21%	11%	18%	10%	3%	

Now let’s blend these two pictures of Figures 6 and 7 – the profile of senior leaders and all other staff below that level. Even when we muddy the sample by lumping everyone below senior leader together, we can still see that the profile of staff looks more diverse than that of senior leaders. Clearly the profile is not evenly weighted across each of the six categories, but there is definitely a greater distribution of scores. How does it happen? What changes? Which dimensions are amplified and which diminish as people climb the ladder? And what remains stable? To answer these questions, we looked at the direction of change across each of the three organisations to find the trends. We used a difference of 5% or greater between senior leaders and staff as indicative of a meaningful change in direction (refer to Figure 8).

Take a look at the overall trend we’ve captured in the bottom row: the focus on outcomes and options is amplified over time, the focus on evidence and process diminishes and the focus on risk and people remains stable. If this analysis is correct (we recognise it’s built upon a very small sample of three organisations), the tantalising question is: why? We’ll come back to the question of, “so what?” shortly.

Why? We think there’s strong explanatory power in the concepts of homophily (the love of same, or similarity attraction bias), in-groups and out-groups, and acclimation (we’re social creatures and we adapt to expectations over time). These

Figure 8: Six building blocks and direction of change from staff to senior leaders (by more than 5%)

	Outcomes	Options	Evidence	Process	People	Risk	Other
A (finance)	↑	↑	↑	↓	↑	↔	n/a
B (commodities)	↔	↑	↓	↓	↔	↔	n/a
C (government)	↑	↔	↓	↓	↔	↔	↔
Overall trend	↑	↑	↓	↓	↔	↔	↔

concepts mean that one would expect to see greater similarity in leaders than differences (as we do). We also hypothesised that cascading bias is at play (remember the Catalyst study on leaders' action orientation as an example of that bias), meaning that one should be able to see the changes (and in particular contractions) in the diversity of approach profile of staff as they move up each grade towards the leadership team¹⁰². To test that idea, we ran an analysis of the responses of all staff from Level 1 to Level 5 (senior leaders) in Organisation C.

Have a look at Figure 9, it's a story that is both a bit creepy and fascinating. In an almost linear progression, level by level, staff morph into the diversity of thinking profile of their leaders – presumably via a process of personal adaptation as well as leader selection.

Now comes the question of “so what”? What are the implications of the data as a whole, and the data in relation to senior leaders in particular?

We can answer that question at a couple of levels. On a positive note, the pattern of responses from the most junior staff to the most senior reminds us that people are social creatures, influenced by their social environment and good at adaptation. Much less positively, we suspect that one's adaptation to narrowness of thinking is probably unconscious and not in people's best (collective) interests

¹⁰² Given that we think this effect is happening across large organisations, we would expect that even the introduction of lateral recruits at senior levels would make no difference to the trend as these recruits are being selected from a pool of people whose diversity of thinking is also narrowing.

Figure 9: Six building blocks and gradual change of percentage between levels in one organisation

	Outcomes	Options	Evidence	Process	People	Risk	Other
Level 5 and above (top pay scale)	47% ↑	24% ↑	2%	12%	8%	3%	4%
Level 4	30%	26%	9%	19%	6%	4%	7%
Level 3	29%	20%	10%	23%	9%	3%	5%
Level 2	26%	18%	8%	26%	15%	3%	4%
Level 1	24%	16%	8%	25% ↓	19% ↓	3%	4%

as it is neither thoughtful nor disciplined. In fact, we think that the current bias in leaders to cluster around two of the six building blocks is both unintentional and damaging. It’s what gets in between an aspiration of diversity of thinking and actual homogeneity, so that even if a leadership group has used the radar process to develop a problem statement that is closer to the full picture (360 degrees) than a personal arc of perspective, they then use only one or two approaches to fashion their solution. And this means it is likely to have blind spots and be less than innovative.

This logic is based on the idea that the data we have laboured over above is signalling something fundamental: namely that while people may agree intellectually that the six building blocks are important to develop a robust solution, individuals are likely to have a preference for one approach, or at most two, and this is reflected in their response to the question about importance.

People choose the approach they think is the ‘most important’ way to solve a problem, perhaps because they have become adept at using that approach or because they’ve been trained to think that way. The genesis doesn’t really matter. What matters is that each individual has a much stronger preference to focus on one, or maybe two, problem-solving approaches than all six, even though people know logically that all six are needed to build a strong solution.

To use the metaphor of the tool box, people think all the tools in the toolbox are useful, but there's one tool in each person's individual tool box that is well worn – the handle shows one's finger print imprint on the grip, it's smooth through repetitive use, it's in a spot one reaches for every time (while one might have to search to find another tool). It's a favourite, familiar, and one knows much more about it (the weight, the idiosyncrasies, the ways it can be used beyond even the maker's original intent) than any other tool.

People recognise its use by others and naturally pass it to someone else when called to provide the right tool. One uses it first and more than any other tool, and people like it when others use that tool as well because they know exactly what the others are doing. If pressed to describe the other tools in the tool box, people could give them names and maybe provide some obvious information, but the list would be nowhere near as clear and detailed as for that favourite tool.

Ok, we may be pushing the analogy a little, but this is what one's favoured thinking approach is like. Whichever one of those six approaches an individual thinks is the *most important* approach, this is the one they think about more, talk about more and apply more. If peers also think that approach is important, then as a group they will stay focused on that approach for longer. And this means that one can't assume that the bias in leadership groups to orient around outcomes and options is any other than what it appears to be, namely the use of these two favoured approaches to solve problems, and, relatively speaking, the neglect of the other approaches. There's no sequencing of responses, there's nothing hidden or blurred, there's no-one really doing that alternative thinking to the same degree¹⁰³. What's more, there is probably no framework to help leaders understand what's going on, so that they can see the gap and deliberately bring diversity of thinking into play.

And why is that? It all comes back to personal bias. It's hard to recognise the value in someone else's approach when everyone believes theirs is the most important. This is because while people may say they 'think' another person's different point of view is *equally* important to their own, everyone actually values their own more highly (however slightly) because at heart everyone thinks that their own has the edge and is therefore

103 Even when we have asked leadership groups to tell us their second most important factor, the overall group picture doesn't change substantially as those that chose "objectives" in the first round are likely to choose "options" in the second round, and vice versa.

“better”. The concept of self-serving bias, which we’ve mentioned before, means that what individuals are good at (that is, using a particular approach) is what they then tend to think is the most important approach that should be used. So when one is in a group and someone else uses a different approach, one is less likely to ask questions to deepen one’s understanding of that alternative point of view (beyond politeness), and more likely to (politely) wait until the other person has finished speaking so that one can reorient the discussion back “to what really matters”.

This scenario is amplified for leaders, meaning it is even harder for leaders to truly value others’ different points of view or approaches. Firstly, leaders have been successfully using their approach to solve problems for a long time, it’s so ingrained it feels natural (not learned) and inherently “right”. Secondly, a leader’s personal sense of what is important bounces back to them from others who share a similar approach. If nearly half of an executive group (44%) thinks talking about expected outcomes is the most important topic for discussion, then that will be the most debated issue, and significantly more than a minority topic, such as risk or people. It is an echo chamber of groupthink and while it feels comfortable, it’s a very risky way to make robust decisions. To put it simply, homogeneity of deep level diversity (that is, approach) is the Achilles Heel of leadership teams.

Your immediate response to our finding about bias in top teams, especially if you are an executive team, might be to say “But that is my role: to focus on the options and outcomes”, and we expect that if you have a natural strength to solve a problem by thinking about options and outcomes you will probably be feeling this keenly (that is the nature of self-serving bias – it makes people want to advocate for what they are good at). Our only request is to hold that point of view for a moment – sufficient to give you time to read the rest of this chapter – and consider this. . . .

The world of business and government is operating in the midst of substantial organisational corrections: corrections that apply beyond a single industry, market or country. When we read between the lines, we can see that these corrections implicitly recognise that executives (and perhaps boards) have been primarily oriented around options and outcomes, and much less around people, risks, evidence and process. One of those corrections is the customer centricity movement, with its emphasis on client service and personalisation; a second is the focus on risk culture and financial governance, with a particular emphasis on the management

of financial risk; a third is the push for evidence-based decision-making; and the final focus is on strategy execution at the same time as strategy setting. In essence, these corrections are about having a greater focus on people, risk, evidence/data and implementation/process orientations.

Where our insights come into play is that, notwithstanding these market corrections or redirections, we still see groups spending more time clarifying objectives and discussing options to achieve those objectives, than on anything else.

For example, we were recently invited to be part of a strategy day with the leaders of a business division (let's call it Division A). You can picture the scene: all of the leaders sitting around the table, intently listening to a presentation about the general state of the market. There was talk of disruptions and changes, talk about threats and opportunities, but the weighting of the message was on change rather than market stability. The leaders all knew that breakthrough thinking would be required to adapt to their new reality, but they seemed at a loss about how they might create it. The next presentation was on the financial health of the business, and the message was clear: things had to improve. The business was not generating what had been predicted the previous financial year, and was slowly falling further and further behind. There was a pause as information sunk in. The pressure was mounting. Clearly they needed to adapt more quickly than they had originally thought.

Even though the stakes had been raised, the team defaulted to a discussion process that was the same as the one they had used the year before. Not surprising really, given that no-one was questioning the *process* of decision-making, just the *outcomes* from the choices made last year. Led by the division leader, they did what we see most teams do in this type of situation, and indeed what the linesmen, accountant and secretary did in the PP&L story, they had a free flowing conversation in which all of them contributed ideas about what they should do. If we had asked one of the leaders why they were brainstorming in this way, they probably would have told us "We're smart people, this is our market, we just need to focus", with the underlying assumption being that each person would contribute different ideas. That could have been possible but it's not what we saw happen. There was no discipline to ensure that diverse approaches were used (the different tools in the tool box), and consequently a broad set of insights were not discussed (the tools were not taken out of the box). With no deliberate process to compel the leaders to think about their

issue in diverse ways – to slow down the group’s discussion and direct it to focus on different approaches to solve their issues – the deep level diversity of thinking that was latent in the room remained latent.

We watched as a leader who has a strong outcomes orientation, buoyed up by a team which also had a strong outcomes orientation, asked the group to contribute ideas about what they should do to recover and increase their market share. He started the conversation by writing four options on the flipchart that he had heard raised during the first presentation on the market. Then the conversation went around the room as people expanded on those options or added others, until the flipchart had about ten options. It happened very quickly because it was familiar territory and a familiar process. This was the way the team expected to be consulted, and it felt fair because the leader asked everyone to contribute and he didn’t appear to play favourites. The process was implicitly designed to include, not exclude, diverse ideas.

So, the team had its objective (recover and increase market share) and now had a list of options (for example, expand service offering X, invest in new product Y). That’s a great starting point, but it shouldn’t have been the final point. Where were those diverse ideas? Where was the deliberate discussion about the facts and how the solutions would be measured (evidence); how the ideas would be implemented (process); what could go wrong (risk); and how would people feel, both clients and staff (people)? Was it assumed that these factors had been considered when each leader contributed their idea? Maybe, but we didn’t hear anything that would lead us to that conclusion: no-one used the language of ‘process’, ‘evidence’, ‘people’ and ‘risk’ and they were not specific topics of discussion. People were directed to think about objectives and options and that’s what they did. That was the primary focus.

The division leader then did what any good Western leader would do: he called for a vote. It was at this point that one divergent team member raised their voice. They weren’t eloquent, and were clearly nervous, and they asked a question which seemed out of left field. In particular, the team member asked if voting was premature because the information the team was relying on seemed to be more in the nature of opinion than fact. The team member explained their concern: that individually, and collectively, the group would make a mistake if the choices were not more fact-based.

Silence followed. Clearly, this was not a welcome interruption and it seemed odd.

To use the phrase of Professors Cass Sunstein and Reid Hastie – the team member was ‘cognitively peripheral’¹⁰⁴. Without a framework to recognise the value of the team member’s question it seemed out of context (“What are they talking about?”), a distraction (“We know what we have to do, let’s do it”), and certainly not a value-add. Plus there was no simple or immediate answer. The executive and the bulk of his team wanted to press on and reduce the list of ten options to a final ‘to do’ list of three before the meeting closed. In no time at all, the votes were counted, the list created and the team completed the meeting. This is what it’s like when a team has a dominant orientation to focus on objectives and options, and for those who have this orientation it feels like a job well done. It’s another story for those who have minority orientations: it feels like an opportunity missed.

Why did this happen? This was not a group of bullies and we doubt that politicking was done outside the room. There seemed to be a genuine lack of recognition that the approach the group had taken was in any way lacking, and why would there be when the familiar and accepted brainstorming process was being used. Our hypothesis is that this team, like most leadership groups, was experiencing the effect of a group bias (to be outcome and option oriented) which had arisen from the dominance of these approaches in individual team members, and also the top leader in particular. And this dominant approach was the consequence of group selection bias and acclimation over time¹⁰⁵, the latter meaning that even if a diverse thinking leader became part of the group, they would be likely to lose their distinctive point of view through adaptation and decreased use (which we expect will happen to the outlier leader who brought up the question about data).

Further, we have implied that the group preference for one or two approaches to problem-solving went unnoticed as the group did not have a model against which to test its diversity of thinking and therefore notice the gap.

We also saw the overarching desire for speedy decision-making, which was

104 A “cognitively central” team member is one who “possesses information in common with all or most group members. By contrast, other group members are ‘cognitively peripheral’: their own information is uniquely held. What they know is known to no-one else, and what they know might be really important”: Sunstein, C., R., and Hastie, R., (2015) *Wiser. Getting beyond groupthink to make groups smarter*, Harvard Business Review Press, Boston, USA. Loc 1137.

105 This latter insight was evident in the Niensens’ study of Swiss companies, namely that whereas the benefits of nationality diversity endured over time, the impact of functional diversity diminished, probably through a process of neutralisation.

assisted by unanimity, and unanimity was assisted by similarity of approach. Finally, decisiveness is seen to be the mark of a good leader, and while there is merit in that view (no one wants to go around in circles or dither), the pressure to decide is conflated with a pressure to take action, meaning there was a pressure to “do something” and “do it now”, that is, decide now. All of these factors served to hide the narrowness of the group’s approach from the group itself, and to keep the group focused on outcomes and options as almost stand-alone items, disconnected from how the options could be implemented, the risks involved in different options, whether people have the capability to deliver the options, what end users need and the data relied upon to evaluate each of these questions.

Standing back, this narrowness means there are significant bias-related risks attaching to leadership teams dominated by groups with 70–75% of leaders using only (or mostly) the objectives and options building blocks. This is not only in terms of the quality of decision-making, but also for the experience of leaders individually and collectively. The risks that leaders have intuitively identified to us when we have shared these data fall into four categories:

- (i) **Narrow debate:** senior leaders say they tend to debate the aims/objectives of a problem they are trying to solve, and the options, with greater depth, complexity, and for longer. In contrast, the four dimensions of evidence, people, process and risk are given shorter shrift, and there is comparatively less clarity about these factors. As one new leader in a consumer business company spontaneously opined to his fellow executives at the end of an executive meeting we were present at, “We don’t make time to talk about people. We just talk about the numbers”. In another very large financial company, we observed that no money was allocated during the annual budgeting process for people initiatives. There was new budget for an IT upgrade, process simplification and new buildings, but no budget that was earmarked for staff or customers beyond the annual payroll and marketing allocation. No-one was at the executive table advocating from a “people” approach about the people implications of the new projects, and that was reflected in the budget settings.

Sometimes leaders have told us that they have been conscious of the lack of focus on risk or data, but in the very same breath they have told us

of their lack of concern. One executive leader said *“We have a person who looks at risk, and we assume that if there is a problem they will sort it out”*. One CEO told us *“I have very talented people reporting in to me and I know that they would have looked at the data before it comes to me”*. There is an assumption that diversity of thinking happens elsewhere, but when we looked at the next layer below the top team we saw (as you know) very similar approach biases. There is no safety net.

- (ii) **Turnover:** when senior leaders reflected on the turnover of their peers, they noticed a pattern of exits (forced and unforced). *“If I think about the last three execs who have left us, I can see that they all focused on process. They just didn’t fit in”*, one senior leader in a property company told us.
- (iii) **Engagement:** at an individual level, leaders who took a minority approach, for example, who had a preference to think about problems in terms of risk, said that their voice was given less weight and attention in group meetings, and they felt like a squeaky wheel who got no grease. Moreover, over time, the likelihood that they would continue to raise issues which were not seen as valuable by the group, diminished. What’s the value in raising a point of view that no-one seems interested in hearing or discussing?
- (iv) **Exceptions:** when the Chief Legal Officer (or General Counsel) sat on the executive team and took an evidence-based approach to problem-solving, this special role gave weight to their voice and counteracted the usual experience encountered by leaders using a minority approach. *“I have a big voice” said one General Counsel in a retail company, “and there’s no way I am going to let the exec team ignore me. I’ve thought a lot about this. I know I think about evidence much more than they do, but my personality and my role means I will be heard”*.

Each of these reflections suggests that leadership teams are not enabling diverse approaches to be heard and included in the group discussion process. Moreover, if diversity of thinking does squeeze through, it is by accident (for example the big voiced General Counsel who happened to bring an evidence approach) rather than intention. When a minority approach (people, risk, process

or evidence) is coupled with a team member who has no positional advantage, then it's unlikely that point of view will be raised or heard, and if a minority approach is not even represented at the leadership table, then a constrained outcome is almost guaranteed.

The bottom line is...

1. Top executive teams are dominated by individuals who favour outcomes and options approaches, which influences the topics of conversation, engagement and team turnover.
2. Organisations become more homogenous over time from a diversity of approach point of view: the proportion of those who identify as having options and outcomes orientations increases level by level, while people and process orientations decrease level by level, and risk and evidence (already in a minority) are stable.
3. Standard brainstorming processes do not pay deliberate attention to each of the six different approaches, creating risks that "minority" approaches will be neglected.
4. All six are needed to create robust solutions or innovative ideas.

Show me the money: quantifying the value of taking a diverse approach

All of this is sounding very qualitative and conceptual. So, is there a way to quantify the impact of diversity of thinking (or lack thereof) on decision-making? As you will recall, Angus Campbell placed an intuitive value of 20% on the capacity of diversity of thinking to enhance the quality of decisions – insightfully he placed it as the top 20%. That is the differentiating factor. Is he right?

Assuming, as we found, that 93% of people have a bias to approach problems from one dimension, could the collective diversity of a balanced group (assuming all of the six approaches were heard and leveraged) improve decision-making such that they would make quantitatively better decisions? Yes, according to Professors Hong and Page (Michigan University)¹⁰⁶. In a study dense with algorithms, Hong and Page computationally modelled the number and balance of "attributes" (or,

¹⁰⁶ Hong, L., Page, S. E., and Riolo, M., (2012) Incentives, Information and Emergent Collective Accuracy. *Managerial and Decision Economics* Vol 33 pp. 323-332.

to use our language, “approaches”) decision-making should cover to generate high levels of predictive accuracy.

To establish a baseline, they modelled an initial scenario with individuals using one attribute, and even allowed (as we found in our research) that some individuals may use two attributes/approaches to make their decision. In this scenario, using an elegant algorithm run over 30,000 periods and 101 agents (a crowd), Hong and Page calculated individual accuracy at 68.75% (against a 100% correct target). To put this in the context of our findings, this means that if a person relies on their own approach to solving problems, there’s about a 30% chance they will make a mistake.

Now for the more critical questions: could each person’s compromised level of individual accuracy, be measurably corrected by the collective diversity of the group? And, if so, what would be the conditions for success? Theoretically, the number of attributes could be infinite, but keeping it real, Hong and Page recognised that there must be a balance between number of attributes and time. Too many attributes creates a loss in terms of the time taken to understand and process each different point of view. On the other hand, too few attributes and there will be blind spots which could take accuracy back to the baseline.

They hypothesised that five attributes would create the maximal diversity necessary for collective accuracy. We have used the language of “approach” but we are talking about the same concept as Hong and Page. It’s not about the number of people in a group, but the different approaches they use to solving a problem together.

Hong and Page modelled three different scenarios¹⁰⁷: one in which the five attributes were equally weighted (that is, a “balanced portfolio”); another with five attributes in which one attribute (or person’s approach) dominated; and a third with nine attributes in which one or two people’s approaches dominated.

The result? It’s all about balance and scope. In terms of balance, Hong and Page found that optimal performance (as measured by the near perfect accuracy rating of the group) occurred with the use of five attributes *which were equally weighted*, and that performance was significantly compromised if one attribute dominated. In terms of scope, Hong and Page concluded that “although diversity produces better outcomes, more diversity need not always be better”, and, in particular, a jump from

¹⁰⁷ Their experiment has more to say about information sharing and incentives – if you are interested in reading about those conditions.

five to nine attributes reduced the group accuracy rating to around 90% primarily because of the impact of time/cost dynamic. Of course, this is still an improvement over individual accuracy levels, but this finding speaks to diversity boundaries.

Our results, and our proposition, are very similar to those of Hong and Page. Firstly, we have found that leadership groups are dominated by one or two approaches to group problem-solving, which leaders usually intuitively recognise as compromising performance. Secondly, we have suggested that a broader problem-solving framework would comprise six elements (building blocks), which is closer to the five attributes modelled by Hong and Page with 100% accuracy than their outer boundary of nine with 90% accuracy. Thirdly, we have suggested that these building blocks should be equally weighted, or at least given more equal weighting than is currently done by leadership teams. Finally, and most importantly, our unique contribution is that we have identified the specific nature of these problem-solving attributes, as well as the identity of the dominant approaches in top teams and amongst employees. They are no longer nameless “attributes” but very real “approaches”, and they come in a packet of six.

The value of our survey and field research to generate productive insights was brought home to us by a study conducted by Professors West and Dellana (East Carolina University)¹⁰⁸. They computationally modelled the impact of cognitive diversity on predicting bankruptcy, using historic data from the US with five data points for 329 companies, including 93 bankrupt companies. These data included ratios on “working capital/total assets, retained earnings/total assets, earnings before interest and taxes/total assets, market value of equity/book value total liability and sales/total assets”¹⁰⁹. The questions were: what would be the predictive accuracy levels for homogenous groups (who approached the prediction problem in one way), compared with heterogeneous groups (who approached the problem in multiple ways). To make it more realistic, West and Dellana also factored in that there would be capability differences between people in the homogeneous teams as well as the heterogeneous teams, as well as information/content differences between teams.

And the result? West and Dellana found that diversity in ability can improve

108 West, D., and Dellana, S., (2009) Diversity of ability and cognitive style for group decision processes. *Information Sciences* Vol 179 pp. 541-558.

109 West, D., and Dellana, S., (2009) *ibid* p. 548.

performance, even in homogenous teams, by 3–4%. So, having smarter and more capable people in a team is of benefit in making better decisions, but we'd expect that a 3–4% increase won't have you jumping up and down for joy. But this might: West and Dellana also found that the groups who approached the problem from four different "domains" (or to use our language, "approaches"), were significantly more accurate (11–47%) than the homogeneous groups which used one domain. And you might jump even a little higher when you learn that the diverse groups were relying on their own collective intelligence to generate insights, whereas the homogenous groups were dependent on an expert to give them a leg up, meaning that they carried a key person risk. Lose the expert: lose the advantage.

To bring it all together: Hong and Page found that diversity of approach in a group can theoretically correct for an individual's inherent level of inaccuracy (based on using a single approach). Indeed they found that the equal combination of five-nine approaches yields accuracy levels from 67.5% to 90–100%.

West and Dellana applied their theory to real predictions (in relation to bankruptcy) and found diversity of approach lifted group accuracy between 11–47%. These findings reinforce the intuitive value of our research, namely that the collective intelligence of teams will be enhanced at the problem-solving stage, if team members approach a solution in six ways, and definitely more than the current focus on two approaches (that is, objectives and options).

The bottom line is...

1. Hong and Page's model found that using one approach generates 68.75% accuracy.
2. Hong and Page's model found that when groups give equal weighting to all five attributes they can theoretically lift a group's predictive capacity to 100% accuracy.
3. West and Dellana found that when groups approach real problems from four domains, group accuracy was lifted by 11–47%.
4. Groups dominated by people using one or two approaches have a significantly greater chance of making errors.

Working against the grain: effective strategies

Let's sum up our findings above and see how they can be put to work in practice.

Firstly, *we identified individual biases that cause people to prefer, and therefore attend to, one or two of the six approaches more than others.* In other words, while people might agree that they should consider all six approaches equally, their own capability and interests bias them to delve into one or two more deeply and the others more superficially.

Secondly, *we found that when groups are dominated by individuals with a bias to one or two of these approaches, they act as a 'voting block' and the decision-making conversations of those groups are weighted towards those approaches.* In the absence of a conversational protocol (that is, an alternative to brainstorming), groups do not appear to naturally correct for personal biases.

Thirdly, *we found that individuals and groups are likely to be blind to their personal/group approach biases, and will thus fail to take corrective action to ensure that all approaches are discussed equally.*

In practice what this means is that top executive teams tend to approach strategic problems (that is, how they will solve them), in one or two ways. In particular, they will spend more time talking about *what* they are trying to achieve (that is, the objectives or expected outcomes) and their options, rather than, for example, *how* they are going to *implement* their solution, the *evidence* they are relying upon to make their decision and measure success, how *people* will *feel* about the solution (and by people we mean customers and staff) and what could go wrong under various conditions (that is, the *risks*).

These findings are highly significant. They give us a clear picture of why smart teams can under-perform. And we have been able to use these insights to develop a better discussion process that gives groups a viable alternative to fingers-crossed random brainstorming. Specifically, we have developed, tried, tested and refined a 'diversity of approach' method to help inject diversity of thinking into critical decision-making moments. A process that helps groups to identify the full complement of problem-solving approaches (not just those in one's own head) and makes narrowness of thinking apparent, allowing leaders to deliberately create an environment where diversity of thinking can flourish.

This process represents an evolution from the unstructured brainstorming

process used by PP&L and Division A. We don't say it is the only process that could improve current practices, indeed there is a burgeoning field of research which demonstrates the effectiveness of 'electronic brainstorming' or crowd-sourcing to generate high quality ideas¹¹⁰, but our field research is very promising and demonstrably impactful.

Our process focuses on playing to an individual's bias – and reframing it as an individual's 'strength'. This reframing is critical because it causes team members to recognise other's *thinking expertise* and, much like content or knowledge expertise, team members are more likely to value diverse mental models when they are transparent. Further, rather than expecting each person to become fully adept at solving a problem by using all of the six approaches (as de Bono did by making everyone in a group "wear" the same thinking hat simultaneously), we prefer to rely upon the group to collectively be good at all six: deliberately drawing on the strength of individuals and creating a culture of appreciation and aggregation.

Putting this all together, we have created a deliberate conversation process in which micro-groups within a team analyse a defined problem using their dominant approach for a short time (say 10–15 minutes). This siloed exploration process is repeated for each minority DoA, followed by a process of disciplined elaboration. And the outcomes of these two processes (explore and elaborate) are used by the whole group, or a later sub-group, to develop options and a solution.

This process is markedly different to that used in traditional brainstorming activities where democratic groups randomly contribute ideas, which supposedly build on the previous speaker's idea. Such traditional activities are rarely effective because of the nature of the process. Firstly, because it involves people talking over each other and, even if there is polite turn taking, ideas come from all different directions (indeed, that is the intent). Thus, this process places a high cognitive load on people to rapidly switch between ideas, privileges extroverts and creates productivity losses (because individuals contribute more and more divergent ideas rather than exploring a single idea – or frame of analysis – in depth).

Secondly, brainstorming is a group process and in any group there are in/out groups, power differentials between people and biases towards groupthink: all of

110 Chamorro-Premuzi, T., (2015) Why brainstorming works better online, *Harvard Business Review*, 2 April 2015.

which create challenges for individuals to speak up. These problems are reduced, to some degree, when each group member has a designated role or recognised area of expertise. We have drawn on these insights by making each person's primary and secondary DoA (expertise) transparent, given it a value (by calling it a "strength") and creating a process to explore it in-depth.

The positive results from our field work tell us we are on the right track, and that adopting a deliberate process to address DoA has enhanced value for DoA outgroup members (that is, making them feel included), and thus for the collective intelligence of the team as a whole. Professors Sunstein and Hastie put it this way:

"... well-functioning groups need to take advantage of cognitively peripheral people. These people are especially significant. But in most groups, cognitively central people have a disproportionate influence in discussion and participate more in group deliberations. By contrast, cognitively peripheral people end up having little influence and participate less, often to the group's detriment."¹¹¹

In our experience, when leadership groups are made aware of their thinking (approach) bias, they usually recognise the current state and are eager to take a more robust approach: they just hadn't thought about it before. The act of providing decision-making teams with a framework to recognise their individual preferences, along with disciplined thinking processes to expand and integrate new approaches, helps to capture their latent collective intelligence.

Of course, implementing our new process is not without its challenges. Diversity of thinking is not a natural state of affairs, so leveraging the potential value won't happen without conscious focus and deliberate effort: discipline. People may say that they want diversity of thinking to generate innovation and protect against risk, but it's not a comfortable experience. And, as we saw with the Division A team, when there is discomfort and an absence of a process to extract the value of diversity, then it is more likely that people will revert to homogeneity of thinking even if they use the standard brainstorming approach. People need the presence of diverse thinking

111 Sunstein, C. R., and Hastie, R., (2015) *ibid* Loc 1138 – 1149 of 3122.

and they need a structured process to keep a team's thinking on track.

On the first point about the presence of diverse thinking, there are two issues that immediately spring to mind. One goes to the pipeline of talent. As we have already observed in Figure 9, without a deliberate strategy to preserve the diversity of thinking which enters an organisation at its base level, that pool of thinking will narrow over time. Indeed that entry level pool of talent may already be a reduction in the potential pool of external talent, assuming that selection processes and recruiters themselves are not immune from bias. So a strategy to preserve or grow diversity of thinking would need to counter the bias to self-clone through selection, sponsorship and promotion. A challenging task given that people seem unable to counter these biases even when they have a much more *visible* impact on the demographic diversity of organisations, leading organisations to become visibly similar with each level.

And doubly challenging when people realise, through the data we have shared in relation to Organisations A, B and C, that everyone is part of an ecosystem of talent, meaning that if one fishes from the large corporate pond in the building next door, it's likely that pond also has a shrinking population of diverse thinking. To put it bluntly, lateral hires, especially at senior levels, are likely to use problem-solving approaches that are quite similar to those in their new places of work.

The second issue is the importance of an open mindset in leaders (particularly those who lead the team as a whole), and a commitment to stay the course when diverse ideas become uncomfortable. We did wonder if leaders ever get past that discomfort and progress to another level (perhaps one just a little more comfortable?). We asked Mike Henry, President of Coal at BHP Billiton to share his insights. A self-identified options-based thinker (which Mike attributes to his background in science and hypothesis-based thinking), he's astute, thoughtful and very aware of the value of diversity of thinking. By definition, however, given that he's an options-based thinker, he's part of the "voting block". For more than five years, Mike has consciously and deliberately created a team around himself with an eye to diversity of thinking, and in particular, including team members who approach problems in different ways. One of those is X, whom Mike included because of his strong process orientation (as well as his skills and experience, of course). A positive step – active inclusion – and a positive mindset from Mike. So, happy days?

“It never gets entirely comfortable” Mike warned us, “I really value X’s input, but that doesn’t mean I find it easy. Sometimes he starts talking and I think ‘oh no, here we go again’, but then I remind myself of why I appointed him. I need to have people at the table who don’t see the picture as I do. And he will say something, not all the time, but every now and then, and I think: I just wouldn’t have seen it without him.”¹¹²

Developing a new thinking process: three case studies

Our first attempt to develop a deliberate “diversity of approach” discussion process came in late 2013, when we were tasked with running 25 focus groups, across three countries, for a large financial services company. With a total focus group population of 320 people, we thought it would be a wonderful opportunity to test our ideas, and the client agreed. So instead of separating people into random small groups of four to five people, each tasked with responding to set questions, we decided to first ask people to identify their “approach strength”. We then used this information to create micro teams populated by one representative of each “approach”. We thought of this method as our “Benetton colours” model, imagining each “approach” as represented by a colour. While the process always created interest and engagement (and led to considerable discussion about diversity of thinking), it did not appear to generate markedly deeper or broader insights than we might have acquired had we just used the traditional brainstorming process. Nothing lost, but nothing remarkable gained, and we went back to the drawing board.

Our next design marked a real turning point, and its value was endorsed by the sponsoring CEO Andrew Reeves of George Weston Foods Australia. At the conclusion of the group discussion Andrew reflected “... *when I look through these different lenses, I recognise issues I hadn’t seen. They force a balanced discussion. They make the invisible visible. That’s powerful stuff.*” What did we do that was so different? Essentially, we put more emphasis on understanding how each approach viewed a problem – and instead of creating multi-colour groups, we initially created single or solid colour groups, which we “blurred” with other colours over time.

To put this into context, Andrew is a great leader surrounded by a great top team, and together they have turned their business around from one of serious

¹¹² Interview Juliet Bourke and Mike Henry, 8 July 2015.

loss making to growth. To accelerate their green shoots, the team has developed six enabling strategies, with Innovation at the top of the list. Having worked with their top 50 leaders, it's clear that there's a strong and positive culture, but we also know that, as per usual, 70% of the leaders have a bias to approach problems from an objectives and options framework, and that includes Andrew.

His brief to us was this: *"I know what to do to turnaround a business. The choices are relatively narrow. It's all about cost cutting. But growth is different. We need to think differently."* It was classic Andrew: an open mindset and curiosity. A willingness to devote time and energy to exploring the idea that deliberately adopting a diversity of thinking framework might help the company's growth journey by improving its decision-making. Andrew also, as you might expect, has enormous business savvy. He wasn't going to let us loose on his business without a proof of concept. *"I want to look at our Innovation Strategy again to see if we have blind spots"*, Andrew told us. No pressure, but could we design a diversity of approach process, which could be applied in a three hour workshop, to reveal hidden insights about their Innovation Strategy?

It was just the moment we had been waiting for.

As discussed earlier, we knew that having diversity of perspective present in the workshop would be critical, as would a deliberate strategy to tap into diversity of approaches. We looked closely at the demographic backgrounds of the participants (both in terms of race/culture, sex and function) as well as their underlying capability to be part of the team, and hand-picked a team from Deloitte to complement the George Weston group. As you will recognise, we were tipping our hat to Diversity of Perspective at the same time as Diversity of Approach, believing that an holistic approach to diversity of thinking would deliver even bigger dividends than one just focusing on perspective *or* approach. This is one of the key messages of this book – teams need both surface level diversity and deep level diversity to perform at their peak.

Our start to the workshop was designed to scratch the team's itch to talk about the objectives of the Strategy (they were mostly objectives oriented individuals as you would imagine). We didn't want that conversation to dominate the workshop, so we used a contained question and answer tactic in which one person, Simon, interviewed the Innovation lead, Steven, to talk about the Strategy's expected

outcomes. It was enough to give the team clarity about the aim of the Strategy. We wanted to leave a lot of time to focus on the building blocks of evidence, process, people and risk, which were overall weaker in the group.

As a first step to getting to the heart of the workshop, we asked each person to complete the diversity of approach self-assessment and self-identify the factor they thought was the most important in problem-solving, just as we have done for all of our surveys of leaders and staff. We then asked them to select the second most important factor from the building blocks, knowing that the first factor would probably be either “outcomes” or “options” for most of the group. In this way, we were able to create small groups of sufficient size to discuss evidence, risk, people and process.

Each person was asked to move to one of the four corners of the room in which a Deloitte team captain was waiting, selecting the corner on the basis that it matched their primary or secondary strength. In a first “see the world through my eyes” exercise, the team captain led a discussion about what having a particular approach bias (or “strength”) meant for them: what they think about, what they see in themselves and others, what they hear and what they do. Key word prompts were written on a flipchart and added to by the people clustered around the team captain.

By way of example, here’s what the leader of the people corner (Pip Dexter, who is a Partner in Deloitte Australia’s Human Capital Consulting business) had to say.

“I think about people’s uniqueness, I think about what motivates people, who they are connected to, what makes them feel valued and gives them a sense of belonging. I don’t just think of who or what impacts a person directly, but indirectly as well, such as support systems and people’s tribes. In fact that’s my starting point. I write myself a mental list of all the people who could be impacted, and then I think about what impacts their behaviours. I know that people are visual and like to tell stories, so I ask myself: what are the stories and language that will resonate with people. I have an image in my head: it’s about people’s head, heart and their hands. Do they know what to do, are they engaged, do they have the right skills to do what they are being asked to do? Some people have told me I am like a Gardener. I like to help people grow.”¹¹³

113 Interview Juliet Bourke and Pip Dexter, 15 May 2014.

This “see the world through my eyes” exercise was designed not only to validate people’s self-assessment but to prime people to listen differently to Steven as he then described the Innovation Strategy. In real time, as Steven was speaking, each person wrote on Post It notes what they heard and what they didn’t hear but wanted to know. They focused on listening “through” just one building block, the block they had just been primed to think about, and writing down ideas that immediately came to mind. Then the group returned to their corner to explore and combine their reflections, and create collective insights. It turned out that this was an incredibly powerful activity. The discipline of exploring something from one domain, for longer than was normally comfortable, and thinking about it with peers who shared that approach, created the first wave of insights. *“It forces you to stay in the moment a bit longer”*, said Andrew.

Next we wanted to grow a new capability in the leaders and to create additive insights, so we asked the micro groups to rotate to a new corner, leaving the table captain behind to explain the ideas of the previous group. Our request was that the new group add a new layer of thinking. It turned out that this was the second most powerful activity, as people naturally started to integrate their first wave of insights with their second. By way of example, one leader had started in the “risk” corner, and spent time imagining the risks that could attach to the company’s Innovation Strategy and identifying “what if” scenarios. When he moved to the “evidence” corner he started developing insights about how evidence could help inform the risk decisions and define the “risk boundaries”. We called it “blurring” and have watched numerous teams insightfully elaborate on other’s insights through this very disciplined thinking process of slow additions.

Finally, we asked one of our creative designers from Deloitte, who has a strong options-based approach to decision-making, to draw the threads together into a series of options for the company to consider so as to deepen and broaden their Innovation Strategy. There were ideas about new processes, how people could be engaged, how success could be measured and risks monitored. Mission accomplished. In the space of just three hours, leaders had immersed themselves in new world views, deeply appreciated the value of diverse thinking and pushed through to create a list of potentially actionable insights. It wasn’t a clinical process with ideas falling into nice neat boxes, and it took concentration and real effort, but we proved the

point that the effort is worth the reward. Reflecting on the process Andrew said, *“Some of this just got ignored. It got missed. This process made the invisible visible”*.

The bottom line is...

1. Leadership commitment to thinking about diverse problem solving approaches is key to shifting a group’s attention and conversation.
2. Adopting a deliberate Diversity of Approach process makes people’s mental models transparent, enables diligent focus on each approach and makes the cognitively peripheral more cognitively central.
3. Using a disciplined method to explore individual approaches in isolation, and then elaborate, provides a productive alternative to brainstorming.

The experience with Andrew was fantastic, and it felt right, but, as Aristotle said, “one swallow does not a summer make”. What if we’d just been lucky? Even more significantly, how could we be certain that the new process we had created delivered outcomes qualitatively better than if we used random brainstorming, or even a process of deliberate consultation, for example by which a “position paper” is developed and sent out to critical and diverse stakeholders for consultation, or by which individuals are asked their views separately?

Our chance to answer that question came along in May–June 2014. We were engaged to run a “Proof of Concept” (PoC) project with the Australian Army in which we were given a challenging problem to solve (“develop a strategy to increase the retention of talented staff at the mid-point in their careers”). It was a problem the Army had already tried to solve through the efforts of a small team of four senior leaders and their consultation with key stakeholders such as Career Advisors. Now the problem was passed on to us to see what ideas we would generate by selecting a group of skilled senior leaders (8–11 people¹¹⁴), with an eye to diversity of perspective and taking them through a diversity of approach workshop (much like we had done for Andrew’s team).

Our intention was to compare the outputs generated by the original Army team and the PoC project team, and to evaluate whether the PoC outputs were more innovative and/or robust. The challenge of course was how to evaluate the quality

¹¹⁴ Eleven participants started the project in the project team, and eight completed the final workshop.

of the outputs, given that both groups developed ideas, and, as at June 2014, none of the ideas had been fully implemented. We also knew from our testing of the participants that they were quite cautious and therefore were likely to underestimate the differential value. Our solution was to ask the independent Army leaders, as well as the PoC team, to be the judges.

The result? From a quantitative point of view, 75% of the participants agreed that they had developed innovative ideas and 66% that they had helped make existing ideas more robust. To add another layer to that, participants rated the quality of their improvements as “slight” to “moderate”, with ideas ranging from creating function-based career pyramids, to using different and multiple performance assessment criteria, redefining “talent” and “red teaming” decision-making.

Stepping back, and also taking a conservative approach, Deloitte suggested (and Army leaders agreed) that overall the ideas developed by the PoC team represented a 15% improvement on the original team’s ideas (with a 20–25% improvement in relation to the ideas which drew upon insights about evidence and risk). Our assessment of the quantitative value of the PoC Group’s outputs sits comfortably within the range predicted by West and Dellana of 11–47%, and seems realistic and not over-inflated. The heightened improvement in relation to ideas about evidence and risk we attribute to the lack of that approach’s strength in the original team. This adds further weight to the idea that if an approach is “missing” in a group, and there is no deliberate framework to notice its absence, nor a process to bring it into frame, much less time and energy will be devoted to approaching the problem from that angle.

The question which bears asking is this: taking the minimum 15%, is this level of improvement worth the investment? It depends on the criteria: what one sees as the cost (effort) and reward. For the Army, which has a focus on limiting their own casualties, minimising collateral damage and containing costs, a 15% improvement is definitely worth it.

There’s also another way of thinking about reward, and it goes to the “stickiness” of decisions, that is whether decisions made by one team will be followed by others. In particular, the very process of decision-making has the capacity to build engagement and commitment to the final outcome or it can undermine it. Indeed, in the case of the Army, this could arguably have been an even stronger outcome from the Diversity of Approach process than the purely quantitative benefit. As

one of the leaders later told us, *“When people can see that their approach has been deliberately considered by the decision-making group, they are going to have a lot more confidence in the final decision”*.

We explicitly asked the PoC team members to evaluate the process and tell us about their experiences of the process. 63% of them agreed that the process of deliberately thinking about a problem using different approaches enabled existing ideas to be improved, with one in four participants feeling “strongly” about their experience. The qualitative comments tell it all and, as we found with Andrew’s team, participants felt that their way of thinking about a problem was valued by others; they recognised their individual thinking gaps and felt comfortable relying on others; and they felt confident that there was a high level of inclusion (that is, approaches were not missed or glossed over). In the words of the team members themselves:

1. **Personal growth:** *“DoA was particularly insightful as I was able to clearly identify key strengths in individuals within groups”; “DoA helped me to ask myself ‘Why didn’t I see it that way?’ ‘Why is that way important to someone else?’; and “It gave me a way to critically evaluate the way I make decisions”*.
2. **Appreciation:** *“I appreciated diverse opinions and solutions”; and “I felt valued as the group was open to others’ ideas”*.
3. **Value:** *“(There’s) value in forcing yourself to consider an issue from a different perspective”; “Forces me to stop and think and consider issues in more depth”; and “Eliminates the danger of groupthink”*.
4. **Participation:** *“DoA ensured everyone had a voice and was able to articulate and champion an approach they could best understand”; and “Everyone was included, encouraged to participate. This stimulated discussion and consideration of different perspectives”*.

Putting these findings into context, the Army is known for its diligent attention to decision-making. It has well-developed decision-making processes and a culture which values considered thinking. This stands to reason: when you are in their business, “good enough” is just not good enough. In this context, a finding that the PoC team had developed ideas which were 15% improvements on previous ideas is significant. What is obviously of greater significance is the findings about the process promoting individual feelings of being valued and included, and increasing

confidence in the final outcomes by reducing the possibility of groupthink. The findings were sufficient for the Army to ask us back in September–October 2014 to develop a Professional Development Program that would help them educate their staff about diversity of thinking and its application to problem-solving.

That second project validated, once again, the importance of taking a deliberate process to access deep level diversity during a group discussion. Once again, having defined a problem, we were tasked with generating ideas about a solution using a diverse group, and leveraging individuals' natural strength to think about solutions in terms of evidence, risks, people or processes, which we then combined to generate options. Figure 4 includes some of the questions we developed for the Army, to help each person identify their approach bias, and to ensure that any final decision covered all six approaches.

We have continued to refine our disciplined DoA process and test it in diverse settings (for example, a conference with 200 leaders and a strategy planning day with 25 executives and board members). One iteration has been to the corners activity. We now ask each micro-(DoA)-group to write their flip-chart additions in a different coloured felt-tip marker so as to enhance transparency of contributions. After doing a few rotations, the micro-groups then return to their original corner, review the elaborations the other teams have made to their initial ideas, and select the top three to report back to the whole group. This process of separating deep exploration, elaboration, and then selection, provides the whole group with a very rich source of divergent ideas and insights. It stands in marked contrast to random brainstorming.

A second iteration, which we have used in very small groups of three or four, is to record the conversation against a DoA checklist. Through this writing process it becomes clear to the team which areas of the DoA are over and under-weighted, enabling the group to reconsider and deliberately deepen their thinking before making a decision. Sometimes we might write the contributions on a white board, so all can see the areas of over and under weighting, other times we might write our own personal checklist. Either way, the process of reviewing ideas through a DoA lens helps to make contributions more transparent and therefore adjustable.

In summary, our field research keeps verifying for us the merit in taking a disciplined approach to problem-solving, and the unique value people experience when their specific personal “strength” is noticed and appreciated by others.

Moreover, focusing on diversity of approach gives people a framework to notice and appreciate how others approach problems, and therefore prompts people to search for diverse approaches and break down another element of homophily. It is not a sterile or formulaic experience, but one which gives colour and direction to the idea that the whole is greater than the sum of its parts. If we are on the right track, the question is: how can organisations build this individual and group capability efficiently and effectively?

The bottom line is...

Adopting a deliberate Diversity of Approach decision process:

1. Can increase the perceived quality of decisions by 15–25%.
2. Makes individual team members feel more valued.
3. Gives followers more confidence in the final decision.

Taking it forward: one step at a time

How might leaders and organisations create more “diversity of approach” at senior levels, if not in the composition of the team then in the process the team uses to debate and discuss? Here are five options, and these are not mutually exclusive:

1. **Building new “approach” capability via individual existing team members.** To a degree this is what we did with both Andrew and his team and the Army PoC team – and it reflects our belief that individual approaches are built over time, namely with repetitive use and reinforcement. Your individual strength, which now feels innate, is actually something you have learnt. And if you have learnt this strength, you could learn another, particularly if you have already identified yourself as having a secondary strength or a natural adjacency. This would be a longer-term solution, as relearning takes time.
2. **Lifting “approach” capability across all existing team members.** This would mean that all team members would take responsibility for synthetically addressing each building block, that is, without reliance on the natural “strengths” of individuals to keep decision-making on track. This could occur through the use of explicit tools and decision-making

protocols, for example, to ensure the team considers each approach. While raising the bar, we wonder about the robustness of this approach, knowing that under pressure, underlying default biases are likely to re-emerge, and that the additional effort to work against type will deplete energy for decision-making. Nevertheless, it is a strategy that would create collective accountability and, as we saw with Andrew's team, create insights as people naturally integrate different approaches within their own minds.

3. **Rebalancing team capability through supplementation.** In the short term, assuming that team members (especially in top teams) have already been selected for reasons other than the diversity of their approach capability, teams may decide to supplement via the addition of new members. This option has its pedigree in supplementing teams with domain or specialist expertise if there is a knowledge gap. We see problem-solving bias in the same way. The risk, of course, is that the additional team member is always seen as an outsider and not fully integrated into the team.
4. **Building bench strength.** A longer-term strategy is to build bench strength in diverse approaches, which will mean nurturing diversity of approach throughout all talent management systems, and deliberately selecting team members with an intentional eye to their natural approach biases.
5. **Using the six approaches as a review strategy.** Leadership teams might use the six approaches as a lens through which to review their own thinking as well as that of sub-ordinate teams. For example, leadership teams might ask sub-ordinate teams to address explicitly each of the six dimensions, thus building the sub-ordinate team's familiarity with the concepts.

All of these options rest on a team's awareness of its current individual and group biases. The aim of this chapter has been to help identify these biases, that is, the six different ways that people approach problems, the importance of using all of these approaches to create a robust solution, and the likely bias for individuals to favour one over the other five. We have also pointed to the bias in leadership teams to use

just two of the building blocks to problem solve, assuming that someone else will use the others for them. And we have demonstrated that a dedicated process is needed to keep people on track and extract the value of diverse thinking, otherwise leadership groups are likely to use a standard brainstorming process which assumes diversity of thinking will naturally prevail (as with Division A) and not realising that it does not.

The risk of defaulting to random brainstorming was made abundantly clear to us when we conducted the second project for the Army, developing a Professional Development Program. For this project, we built the team's capability on Day One, and gave them a problem to solve on Day Two. The process was going exceptionally well, even better than it had for the PoC team. We were nearly at the end of Day Two. We had built a strong level of individual capability and at this point the group had generated a rich set of ideas by exploring their own approaches and then elaborating on others' approaches.

Now we were at the stage of integrating the ideas, that is, creating agreed options for action, and validating these against the outcomes we were trying to achieve. We divided the group of eight into two smaller groups of four and set them their task. Far from integrating all of the fantastic ideas that they had already generated, they started to do random brainstorming, just calling out random new ideas that came to mind. It was as if they didn't know how to integrate ideas and were happy to abandon all of the hard work they had done so far. It demonstrated to us that random brainstorming is still the default setting for groups, and that disciplined thinking in groups is not a natural state of affairs, even when people are sensitised to the topic. Being explicit about the request – to integrate, not reinvent – helped the teams to get back on track.

The bottom line is...

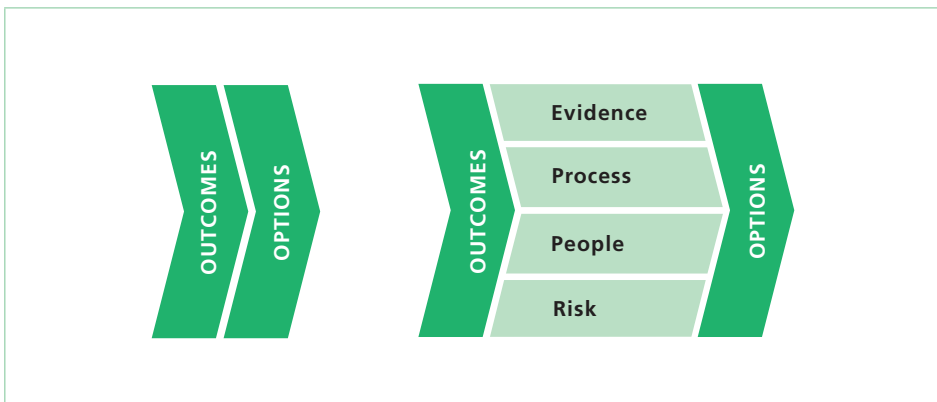
1. Interim strategies are needed to build the six approaches in leadership teams given the current propensity to be dominated by one or two approaches. These might include developing individual capability and adding supplementary team members.
2. Interim strategies are needed to guide group discussion processes so as to incorporate all six approaches. These processes might include decision making protocols or a disciplined discussion process.
3. The default setting of random group brainstorming is very strong.

Concluding comments on diversity of approach

Understanding and using team member's internal mental models for problem-solving offers significant opportunities to help improve the quality of group conversations and the team's overall performance. Presently, however, people appear unaware of their own deep level diversity, or indeed that others may analyse, or approach a problem in one of six different ways. Identifying each person's primary and secondary strength (it appears that people have a tendency to be highly adept at one or two models), and the overall capability of the group, is the first step towards making the DoA sub-strata transparent.

The next step is to engage in a deliberate process to focus on each of the six approaches. Assuming that a discussion about expected outcomes (that is, scenario definition) preceded a discussion about potential solutions/innovations, the solution conversation should (separately) concentrate on the DoA of evidence, process, people and risk. At the end of those separate conversations, options should then be discussed. In this way, a group's conversation is expanded from one which is likely to be dominated by outcomes and options to one which deliberately includes all six approaches (refer to Figure 10).

Figure 10: Straight from outcomes to options or including other DoAs?



Our field research confirms the power of an explicit process to address the six approaches, and in particular its value in including cognitively peripheral insights into the team's overall pool of knowledge from which to draw solutions. We expect that

other processes will be developed which further improve our suggested process, ones which embrace the fundamental principles of discipline, transparency, exploration and elaboration.

On a final note, both situation identification (perspective) and problem-solving (approach) are critical to decision-making, and diversity of thinking is required for both. What organisations often fail to realise is that generating a broad perspective and developing insights requires different types of diversity. Diversity of perspective has more to do with the composition of a group and surface level diversity, whereas insight creation is more about blending individual's mental models or problem-solving approaches and deep level diversity. Sometimes an individual's perspective and their approach may be connected, but that is not certain at all. If we assume that perspective and approach are the same, then our discussion about diversity of thinking is left at headlines (for example, "diversity of thinking improves business performance") and unfocused practices (for example, "let's brainstorm"). To be fair to those who speak in headlines, this is an emerging area of research and practice. But, based on our research above, we now know enough to think and act with greater discipline and effectiveness.

Now we need to discuss one final aspect to diversity of thinking, and it's about diversity of style. The importance of understanding thinking style differences became clear to us in the PoC and Professional Development Program projects. We noticed that when people were put under pressure, for example, to integrate new ideas or to "defend" their ideas, not only did they revert to random brainstorming, but they also defaulted to a personal behavioural default setting. In particular, if they were intolerant of ambiguity, or if they were risk averse, this would be the moment when we would see it clearly. This next chapter will help you to understand diversity of style, and therefore adjust your personal style to suit the moment and to suit others.

Insight 2

CLARITY OF THINKING

Identifying each team member's primary and secondary approach to problem solving is the first step to understanding a team's deep level diversity potential.

During a problem solving discussion, activating and deliberately engaging in a diversity of approach process to explore issues from an evidence, risk, people and process point of view separately, will help ensure the problem analysis is robust and not overweighted to options and outcomes. If the team lacks depth in one of the approaches, then interim strategies can assist (for example, using the questions in Figure 4) to force a discussion on that issue.

Leadership teams can use the six approaches as a way of reviewing the robustness of thinking in sub-ordinate teams (that is, have they addressed each approach with equal depth).

1.3 Diversity of thinking style and the asterisk model

Remember Professor Zhang, our navigation guide from chapter 1.1? She has spent her entire career researching intellectual styles and the last few of those reading 40 years' worth of academic articles for her 2013 book *The Malleability of Intellectual Styles*. With simple elegance, Zhang now defines the term "intellectual style" as referring to "*people's preferred ways of processing information and handling tasks*"¹¹⁵. That sounds straightforward, but once you scratch a little deeper, there are literally thousands of articles on the different ways that people like to do "information processing" and "task handling". Zhang describes those disparate points of view as comprising a "*massive and disjointed body of literature on styles*"¹¹⁶.

The project she set herself, together with Professor Sternberg from Cornell University – a project one might easily describe as Herculean – was to bring that body of work together and make sense of it. What does it say are the key dimensions of style? What does it say about whether people are stuck with their "style" for life, or can it be changed through context or effort? What does it mean to say that each of us has a preferred way of learning, processing information and communicating with others when "thinking"?

115 Zhang, L., (2013) *ibid* p. 4.

116 Zhang, L., (2013) *ibid* p. 20.

Unlike Zhang, ours is not an academic exploration designed to answer those questions in the abstract. At the end of the day, this book is about understanding how to identify and make sure people create and use diversity of thinking to improve a group's collective intelligence. This means that we are going to stand on the shoulders of giants, such as Professors Zhang and Sternberg, to help ensure that our point of view is grounded in fact and not opinion. We are going to pick out the eye teeth of the academic research, rather than summarise the 40+ years' worth of work for the sake of completeness. We are also going to show you how we have applied our knowledge about diversity of style to assist teams to work together more cohesively, so that they can make the most out of their perspective and approach diversity.

We assume you may already be familiar with some of the more well-known theories and assessment tools, such as the Myers-Briggs Type Indicator (MBTI)¹¹⁷, the Big Five Personality traits¹¹⁸, Belbin's Team Roles¹¹⁹ or Kirton's Adaptation-Innovation Inventory (KAII). From where we stand, these tools (valid or not¹²⁰), the disparate body of academic research Zhang reviewed, and the slew of management and self-help books published over the years, have helped to firmly implant the idea that everyone has a different "style". On the other hand, they have also *confused* people about the nature of diversity of thinking and where style fits in.

At its most basic level, even the language used to describe diversity of thinking is confusing: researchers and writers use the same language when discussing style (for example, "diversity of thinking") and have very different meanings or use different terms to refer to the same concept (for example, "cognitive styles", "intellectual

117 The Myers-Briggs Personality Type Indicator was developed during World War II and extended the model developed by Karl Jung in the 1920s on personality types. The MBTI assesses people against four personality dimensions: Favourite world: extraversion-introversion (that is, whether someone favours the outer or their inner world); Information: sensing-intuitive (that is, whether someone prefers to focus on "basic information" or to "interpret and add meaning"); Decisions: thinking-feeling (that is, whether someone prefers to look at logic and consistency or focus on people and special circumstances); and Structure: judging-perceiving (that is, whether someone prefers to get things decided or to stay open to options): www.myersbriggs.org citing the MBTI Manual: A guide to the development and use of the Myers Briggs Type Indicator.

118 The Big Five Personality traits describe five factors: openness (curiosity versus cautiousness), conscientiousness (disciplined versus careless), extroversion (outgoing versus solitary), agreeableness (friendliness versus analytical) and neuroticism (emotional stability). It could be said that the personality traits are different from the other three models and tools mentioned as personality is said to be quite stable, whereas styles can be malleable.

119 Belbin, M., (1981) *Management teams*, Butterworth-Heinemann: UK.

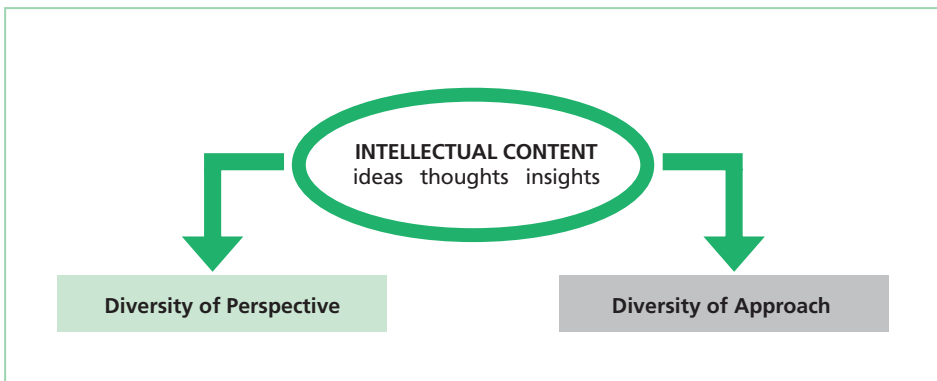
120 Cunningham, L., (2012) Myers Briggs: Does it pay to know your type. *Washington Post*, 14 December 2012, http://www.washingtonpost.com/national/on-leadership/myers-briggs-does-it-pay-to-know-your-type/2012/12/14/eaed51ae-3fcc-11e2-bca3-aadc9b7e29c5_story.html retrieved 2 October 2015.

styles” “mind styles” and “modes of thinking”).

Moreover, researchers and writers often focus on different elements of style diversity, leading to a piecemeal story, and, even worse, some imply that the element they are focusing on is in fact the whole story. How can boards, executive teams and individual leaders have a clear line of sight on what diversity of thinking is (and is not) if the literature is going in all different directions? We have tried to give clarity to this confusion by using the term “diversity of thinking” to mean diversity of perspective and approach, focusing on the different thinking outcomes these create for a group. We suggest that style is quite different.

In particular, in chapters 1.1 and 1.2 we have argued that it is diversity of perspective and approach that will add new thoughts to a group: we think about this in terms of building “intellectual content”. For those of you who are speed readers, we want to slow down this new idea, namely we have just rolled “diversity of perspective” and “diversity of approach” into a larger category which we have labelled “intellectual content” and it is this bucket which will generate new ideas, thoughts and insights that will inform a decision (refer to Figure 11).

Figure 11: It’s not how you think, but what you think



If we are right, this means that leaders can now focus, with a much higher degree of certainty, on the diversity of thinking that will add value to the pursuit of collective intelligence, and can situate demographic diversity (for example, race, gender and function) into that pursuit. So where does this leave diversity of thinking style?

We suspect that people assume intellectual style is the same as intellectual content, and we also suspect that people give too little or too much attention to style, but either way, not the right amount. We have bundled these two insights together because they are related. Let's start with the blurring of intellectual style and intellectual content.

Our observation is that there has been significant focus on understanding *how* people like to think, that is, the process of taking in new information, rolling it around in one's mind, testing and applying it. In part, this has been driven by the academic discipline of education, as educators have been very interested in understanding how students learn so teachers can accelerate their ability to impart knowledge. It has also been driven by the rise in knowledge work and teaming, leading organisations to seek tools that will help team members understand each other better and build team cohesion. The MBTI is a popular example, apparently being one of the most widely used tools around the globe to measure style, since its introduction in 1943¹²¹, notwithstanding significant concerns about its validity. More recent style tools, like Deloitte's "Business Chemistry"¹²², focus on understanding clients' thinking styles, that is, moving beyond a focus on team cohesion to thinking about service provider/client cohesion. Together, this focus on style, and these tools, have helped people to consider their preferred style of learning and working, as well as the styles of others.

That's fabulous¹²³, but the issue for us is that some tools purport to focus on "diversity of thinking" (back to the confused language again), and they purport to cover the field or, at least, imply that thinking style is all there is to know about diversity of thinking. This means that those who have used these tools are left with the impression that they understand what "diversity of thinking" is all about, when it would be more accurate to say that they understand "diversity of thinking styles", which is something a little different.

121 Zhang, L., (2013) *ibid* p. 33.

122 <https://businesschemistry.deloitte.com/Login/Index?ReturnUrl=%2f> retrieved 28 June 2015.

123 We're not commenting here on the efficacy of these tools, more that it's "fabulous" that people think about styles per se, rather than assuming everyone is just like them, or, more commonly, that others should adjust to their style needs.

It's not what you think but how you do it

By way of example, a well-known style difference is that of extraversion and introversion. When this is talked about in terms of intellectual styles, as per the MBTI or the Big Five personalities, it does not mean a behavioural difference (that is being outgoing or shy), but a difference in the way people prefer to process information. In this sense, extroverts like to “think” about an idea through talking out loud, through social interaction (that is in groups) and “in the moment” (that is, they jump right in). Conversely, introverts prefer to “think” through inner reflection, perhaps through talking with one or two close associates, and over a longer time frame.

In practice, this means that if one gave the same problem to an introvert and an extrovert (“What colour should the front door of the house be painted?”), they will process their response (that is, “think”) differently. The extrovert might say immediately, *“What do you think? I’ve always loved red. Red’s one of my favourite colours. I think it helps the house stand out, and that’s good for visitors. On the other hand, it’s a bit showy, but on balance, probably a good idea”*. Then she’ll say, *“Red, yes red”*. The introvert might say *“Good question. Let me think about that. I’ll come back to you”*. Sometime later the introvert would say, *“It should be red”*.

It’s clear from this example that intellectual style diversity did not lead to intellectual content (idea) diversity. And yet if intellectual style is synonymous with “diversity of thinking”, then all other things being equal, the introvert and extrovert should have come up with different ideas just because they were stylistically different. It seems like we’re heading in the wrong direction if we equate style diversity with content diversity.

We know it’s a simplistic example, but the implication behind some of these style tools is equally simplistic, namely that if one understands style diversity, one will understand a deeper level of thinking diversity. You won’t. You will understand how people like to process information. That’s important, but it’s not everything by a long shot. Our aim in this chapter is to separate style diversity (which is more about *how* people think) and content diversity (which is more about *what* people think). There will be some who will argue that the line is blurred¹²⁴, and we agree

¹²⁴ Zhang notes that some researchers think that analytic/holistic thinking is a style rather than a matter of perception, whereas others, like us, see “style” as more behavioural than perceptual, meaning that analytic/holistic thinking is not a style: Zhang, L., (2013) *ibid* p. 28.

that there may sometimes be an interaction between style and content, but given the history of positioning style and content as the same, we have opted to put daylight between these two groups. It's why we have dealt with style in chapter 1.3, *after* discussing perspective and approach.

Now that we have distinguished style from perspective and approach conceptually, we can have a meaningful discussion about defining style and identifying individual intellectual styles. To be clear, we still think attending to style is important, we just don't think it is the "be-all and end-all". We think that understanding style is important to the extent that it will help ensure information is communicated in multiple ways to cater for style diversity. Adaptation is the key word here, that is, adapting to others' styles is a threshold issue to ensure that diverse perspectives and approaches can be elicited and built upon. So let's go down the path of understanding style differences for the purpose of understanding and adapting to other's behaviours and enhancing decision-making.

The bottom line is...

1. "Diversity of intellectual style" refers to people's preferred way of processing information and handling tasks.
2. Intellectual content – ideas – are generated by diversity of perspective and diversity of approach.
3. Adapting to someone else's style of communication helps elicit their perspective and approach.

What's my style?

Zhang and Sternberg describe five fundamental dimensions of style, which, in their view, incorporate all of the different types of styles or sub-categories of styles they identified in their large-scale review of research on "intellectual styles"¹²⁵. Their opinion is that all of the research findings and models of style differences can be plotted against five basic dimensions, each of which is a continuum, namely preferences for:

¹²⁵ Zhang, L., and Sternberg, R. J., (2005) A threefold model of intellectual styles, *Educational Psychology Review* Vol 17(1) pp. 1-53 at pp. 34-36.

1. High degrees of structure or low degrees of structure
2. Cognitive simplicity or cognitive complexity
3. Conformity or non-conformity
4. Authority or autonomy
5. Group or individual activity.

We can well imagine that reducing the enormous and disparate body of work to five dimensions would have irritated some scholars,¹²⁶ and it may not be perfect¹²⁷ or completely comprehensive¹²⁸, but it provides a way to cut through the noise to reach practical ways of understanding others and ourselves. It lifts academic exploration off the pages of a journal and makes it applicable to daily life. So what do each of these five dimensions mean, individually and collectively?

We think of one's individual style as like an asterisk, with each of these five dimensions crossing over each other at a single point. The location of that single point will be different for each person, depending on where one places oneself on each individual dimension continuum. Having said that, Zhang and Sternberg also suggest that there are three main "types" of asterisks (or clusters of dimensions).

Type 1 represents a person who prefers "*tasks that have low degrees of structure, that require the individuals to process information in a more complex way, and that allow originality and high levels of freedom to do things one's own way*"¹²⁹. Using some of the sub-categories of style that map to this cluster, Zhang and Sternberg suggest that this person's style will be reflected in divergence and innovation (to use the

126 "If you look at it solely from the viewpoint of summarisation of data, the evidence has just a tinge of ugliness. It's oversold. If you look at it from the viewpoint of reductionism, it's irrelevant. If you look on it as the use of a theory of intelligence in educational settings, the criteria change – it is an interesting and worthwhile effort... Check it out." Hunt, E., (2008) Applying the theory of successful intelligence in education – The good, the bad and the ogre: Commentary on Sternberg R. J., et al (2008). *Perspectives on Psychological Science* Vol 3(6) pp. 509-515 at p. 513.

127 Zhang clearly references the MBTI in her analysis, but makes no mention of the Big Five personality traits. This may not be a significant point of concern (in terms of the reliability of her five dimensions) given that there is considerable overlap between the MBTI and Big Five, with the exception of the neuroticism factor: Furnham, A., (1996) The big five versus the big four: the relationship between the Myers Briggs Type indicator (MBTI) and NEO-PI five factor model of personality. *Personality and individual differences* Vol 21(2) pp. 303-307.

128 Zhang and Sternberg were explicit that they integrated research which furthered one of ten models, which had been selected on the basis that they were "influential in the styles literature", and "empirically based" and "tested against at least one other style construct" Zhang, L., and Sternberg R. J., (2005) *ibid* pp. 19-20.

129 Zhang, L., and Sternberg, R. J., (2005) *ibid* at p. 34.

KAI), intuition¹³⁰ and perceiving¹³¹ (to use the MBTI) and they will have a more reflective (less impulsive) tempo.¹³²

Type 2 represents a person who is at the opposite end of those same dimensions, a person who prefers “*tasks that are structured, that allow individuals to process information in a more simplistic way, and that require more conformity to traditional ways of doing things and high levels of respect for authority*”.¹³³ Again, using some of the sub-categories of style that map to this cluster, Zhang and Sternberg suggest that this person will be best suited to a “conventional” occupation (as defined by Holland¹³⁴), prefer the adaptation of existing tools to starting from scratch (to use the KAI), have a sensing¹³⁵ and judging¹³⁶ personality type (to use the MBTI) and use convergent thinking.

Type 3 The third intellectual style falls neither into the first type of person described above or the second type. Instead, in this cluster people “*manifest the characteristics of both Type 1 and Type 2 intellectual styles, depending on the stylistic demands of a specific task and on an individual’s level of interest in the task*”¹³⁷. Zhang and Sternberg suggest that with Type 3, a preference to work individually or as part of a group is a more significant differentiator within this Type.¹³⁸

These five dimensions of intellectual styles, and the three typical “types”, can help people to identify their own preferences more accurately, as well as those in their teams. This is not to say that they are set in stone, it’s a bit of a moving target

130 On the MBTI “intuitive” refers to a “person who seeks the broadest view of what is possible and insightful”: Zhang, L., (2103) *ibid* p. 33.

131 On the MBTI “perceiving” refers to a person that “tends to be attuned to incoming information and open to new events and changes”: Zhang, L., (2013) *ibid* p. 33.

132 Zhang, L., and Sternberg, R. J., (2005) *ibid* at p. 36.

133 Zhang, L., and Sternberg, R. J., (2005) *ibid* at p. 36.

134 The Holland Career Personality type connects career choices with personality types, classifying occupations as Realistic (that is, practical), Investigative (that is, thoughtful), Artistic, Social (that is, caring), Enterprising (that is, persuasive) or Conventional (that is, organising). Holland’s model suggests that people will flourish in environments and occupations best suited to their personality, and that the six classifications need not be discrete but can be combined. Holland, J. L., *Making vocational choices: A theory of careers*. Englewood Cliffs: Prentice Hall (1973) cited in Zhang, L., (2013) *ibid* at p. 35.

135 On the MBTI “sensing” refers to a person who “has a predilection for seeking the fullest possible experience of what is real and immediate”: Zhang, L., (2103) *ibid* p. 33.

136 On the MBTI “judging” refers to a person who “tends to be concerned with seeking closure, sometimes without seeking sufficient exploratory activities”: Zhang, L., (2103) *ibid* p. 33.

137 Zhang, L. F., and Sternberg, R. J., (2005) *ibid* at pp. 34-36.

138 Zhang, L. F., and Sternberg, R. J., (2005) *ibid* at p. 36.

for everyone (not just Type 3s), as there are always relativities, meaning that the style one employs is dependent on the task, the situation and other people one is dealing with. Nevertheless, we suspect that misunderstanding someone else's style is a major cause of conflict within teams, as well as a major source of error and inefficiency. It's not hard to imagine what will occur if everyone plays to personal preferences, for example a need to know about tasks and sub-tasks, resources, role allocations and timeframes, only to be working with someone who is happy working with abstract ideas and loose associations. Nightmare.

All of this presumes, of course, that people are aware of their own individual style. However, this presumption was thrown into doubt for us when we were working on the Army PoC project we mentioned in chapter 1.2. At the beginning of that project we asked team members to complete a self-assessment survey to evaluate aspects of three of the five dimensions described above, namely structure, cognitive complexity and conformity. In particular, we asked team members whether they preferred "certainty" or had a "tolerance for ambiguity" (which is an aspect of structure); whether they liked "thinking about thinking", or preferred a more "immediately tangible outcome" (which is an aspect of cognitive complexity); and whether they would approach problems "cautiously" or relished "risk taking" (an aspect of conformity).

Sample diversity of thinking style questions along three dimensions:

Preference for certainty or ambiguity: I believe a good job is one where what is to be done and how it is to be done are always clear. (Agree indicates a preference for certainty)

Preference for thinking or acting: I like to have the responsibility of handling the situation that requires a lot of thinking (Agree indicates a preference for thinking)

Preference for caution or risk taking: overall I am more oriented to achieving success than preventing failure (Agree indicates a preference for risk taking).

The aim of our questions wasn't to select team members on the basis of their answers, but to understand preferences so that we, as project leaders, could adapt

to the groups' needs in the way we structured project tasks, and so that each of the team members would understand the implications of their preferences and adapt to others. By way of example, if a person had a low tolerance of ambiguity, they would feel uncomfortable with a wide-ranging loose conversation more quickly than someone with a high tolerance of ambiguity, and we could adjust to that need by providing a clear idea of the process, timing and expected outcomes.

The self-assessment survey results revealed to us that most people in the group saw themselves as having a moderate tolerance for ambiguity, a high preference for thinking and thought of themselves as open to risk-taking rather than being cautious. If we only had these data to hand, we would have designed team interactions that were loosely structured (ambiguous), involved discussions about conceptual ideas and provided opportunities for people to take risks. And the result would have been sub-optimal. How do we know that?

In addition to the self-assessment survey, we asked the group members to participate in a second on-line assessment, designed to measure two elements of intellectual style, namely (i) a preference for certainty or ambiguity and (ii) a preference for caution or risk taking. The assessment tool, developed by Dr Jen Whelan, Director of Psynapse and Honorary Fellow at Melbourne Business School, was designed explicitly to measure participants' implicit or unconscious preferences. Not what they consciously thought of themselves, but what they unconsciously preferred. Through a word association task, and by recording people's response times, this tool measured the speed with which people associated two words. For example, if a person had a high tolerance for ambiguity it would reveal itself through their quick association of words connected to ambiguity, and their slower association of other words connected to certainty¹³⁹.

The results of the on-line assessment were confronting. Far from people being tolerant of ambiguity and open to risk-taking, in fact the group had a stronger preference for certainty and, perhaps therefore not surprisingly, a cautious mindset. This misperception meant that group members were unlikely to be on the look-out for triggers (from activities or from others) that would generate their default response. Moreover, as we alluded to previously, this misperception meant that they would

¹³⁹ This style of assessment for implicit preferences – or unconscious biases – has a strong pedigree in Harvard's Implicit Association Test as discussed in Banaji, M. R., and Greenwald, A. G., (2013) *ibid*.

behave differently from their own expectations when they were under pressure. It was almost as if the self-report reflected who they wanted to be, and the on-line assessment reflected who they were at heart (or at least under pressure). Even when we helped people to become more conscious of their personal “default” settings by sharing their results with them, we still observed that when the group was under pressure (for example, to complete an activity, to undertake a difficult task, or to respond within a constrained timeframe), they became more cautious in the ideas they put forward individually and pushed others harder to justify their “different” ideas. So there’s a word of caution here, before assuming you are certain about your intellectual style, it might be prudent to test your view by taking an assessment like that of Dr Whelan’s, or conducting a 360 degree assessment (that is, by seeking feedback from those who are your peers, as well as those who are more senior and junior).

The bottom line is...

1. Each person has a unique intellectual style comprising preferences in relation to structure, complexity, autonomy, conformity and team.
2. People may not be conscious of their intellectual style, or might judge themselves within a narrow context (that is, against immediate peers).
3. Undertaking both self-report and implicit testing helps gain insight into one’s intellectual style.

Defaulting to type under pressure

We took on board these lessons when we developed the Army’s Professional Development Plan. We wanted to give team members the ability to see their own style clearly as well as that of others, and focused in on the styles that seemed to make the most impact on group discussions. In particular, we helped people see if they were more of an analytic or holistic thinker; preferred conversations which diverged or converged; whether they were tolerant of ambiguity or preferred certainty; whether they were risk tolerant or risk averse; and whether they liked to make decisions autonomously or collectively. Not only did we show them their personal scores, but we showed them how they compared with the group.

The need for this information became clear when we came to the integration stage. When put under pressure, people demonstrated their default position, just

as they had done in the PoC project. This time around however, we had a clearer insight into the fact that different thinking styles were interfering with listening and deciding. It was not the different ideas that were creating the conflict, it was more that some people wanted to conclude the discussion quickly, and others wanted to explore. Some wanted to take risks, and others wanted to be cautious with their suggestions. Having the language and insight into the drivers of these conflicts went some of the way to reducing their impact.

Our finding that similarity of style can ease communication, and dissimilarity create conflict, is the nub of our insight into the value of attending to diversity of style. Our view is that understanding style preferences (one's own and others) is important along multiple stages of a decision-making cycle, from the first stage of situation identification, through to problem-solving, implementation and refinement. Moreover we suggest that attention to style is absolutely critical when each of those moments are put under pressure to produce an outcome (for example, the definition of a situation, a solution, an implementation plan, or an improvement plan). It's in these moments, as we saw with our two projects for the Army, that personal style default settings are likely to become manifest. Moreover, failing to correctly self-identify and address diversity of style could be the difference between project failure and success, or more likely the difference between productive and unproductive team tension.

The bottom line is...

1. People default to their preferred intellectual style under pressure.
2. Style differences between team members can create conflict if not managed, particularly in pressure scenarios.
3. Having a realistic view of one's own personal style assists in self-management.

Concluding comments on diversity of thinking style

In comparison to the relatively new concepts of diversity of perspective and diversity of approach, much is already known about intellectual styles. It is for this reason that we have spent far less time exploring diversity of thinking style than diversity of perspective or approach.

We know that there are some controversial issues surrounding the issue of style, particularly in relation to gender and race-based stereotypes. We accept that cultural and gender norms influence style expectations and their expression, but we see limited merit in exploring these issues given Zhang's conclusion that they are highly malleable (just as a preference for analytic or holistic thinking is malleable). Our aim is not to categorise intellectual styles by demography, or to reinforce stereotypes, but to focus on the behaviours which will promote group collaboration (awareness, adaptation and conversation).

The bottom line is that understanding individual style differences, and default settings, helps ensure that everyone is brought into the conversation so their ideas can be elicited and elaborated upon. In that regard, there's a critical role that a leader needs to play to get the diversity of style *disadvantage* to neutral, and the *advantage* of perspective and approach diversity to reach its potential.

Insight 3

CLARITY OF THINKING

1. Understanding personal style preferences can help set realistic expectations for communication exchange.
2. Adapting to individual style differences helps elicit valuable perspective and approach differences.
3. Ignoring individual style differences is risky at the idea-generation and problem-solving stages of decision making, but even more so when a decision is being implemented, given the heightened need for harmonious interactions between team members.

1.4 Final words on clarity of thinking

In this first part, we have drawn together threads of research on group diversity and collective intelligence to understand, and therefore exercise a higher level of control over, this nebulous thing called “diversity of thinking”. Why? Because accessing and generating the intelligence of the collective is much more valuable than the insight of a subject-matter expert or the smartest individual; it is even more valuable than a group of experts and smart people. Diversity of thinking is the polish that makes a group shine. It doesn't replace expertise, capability and experience – those

are threshold issues that get someone onto a team. Diversity of thinking takes team performance up to the next level and enables *breakthrough thinking* and *stronger risk identification*.

Value lies, we have suggested, in two very different things: diversity of perspective (enabled by focusing on group composition) and the diversity of approach (enabled by focusing on deep level diversity and the group discussion process). Clarity on the difference between perspective, approach and style is critical to putting diversity of thinking into a box and making it part of “business as usual” decision-making processes. To assist clarity and memorability, we have used the simple metaphors and imagery of a radar (circle) and building blocks (rectangles) and an asterisk.

In relation to the radar model, we have suggested that when insights are being formed about the nature of a problem or opportunity, teams should be created by deliberately taking into account members’ race, sex, functional role and educational background. In this way, team members’ individual arcs of perspective are likely to combine to generate more of a 360 degree perspective. Interestingly, when we have asked staff in a range of organisations to reflect on the diversity of their leaders, it is these factors which dominate discussion, and particularly race and sex. And while there may not be a high degree of rigour behind their reflections (that is, they cannot identify how these factors shape thinking, or in what context), the wisdom of the crowd intuitively looks to these features of leadership groups as indicators of diversity of thinking.

In relation to the building blocks model, we have suggested that teams, be they governance boards, executives groups, or teams more broadly, are likely to approach problem-solving activities using one or two dominant frameworks. Further, that top teams are likely to be dominated by individuals who have a particular bias (or strength) in thinking about outcomes and options, meaning that the other equally important elements of a solution (namely process, evidence, people and risk) are given much less attention. In essence, the team may look like a group, but it is behaving like an individual (or two), meaning that collective intelligence has not been generated and a 30% error margin (to use Hong and Page’s estimate) is likely. On a more positive note, our preliminary field research shows that attention to diversity of approach will help improve idea generation by about 15%-25%. Additionally, it provides group participants and outsiders with a higher level of

confidence in the group's decision, and thus enhances the likelihood that the decision will be implemented.

We started this book by suggesting that the value of diversity of thinking is enabled through discipline rather than random selection and thinking processes, and that part of that discipline is clarity about what generates different ideas. Now that we have greater clarity, we can discuss the conditions which will enable the diversity of thinking within a group to be converted into collective intelligence. Our view is that without thoughtful attention to those conditions, the potential for breakthrough ideas and robust insights is reduced. Part 2 will discuss the biases and behaviours which promote, or inhibit, an inclusive team. Part 3 will focus on the hands-on role played by inclusive leaders charged with creating collaborative diverse teams, as well as the influencing and shaping role played by leadership groups, such as boards and executive teams, on diverse-thinking organisations.