

WHICH TWO HEADS ARE BETTER THAN ONE?

HOW DIVERSE TEAMS
CREATE BREAKTHROUGH IDEAS
AND MAKE SMARTER DECISIONS

Juliet Bourke

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

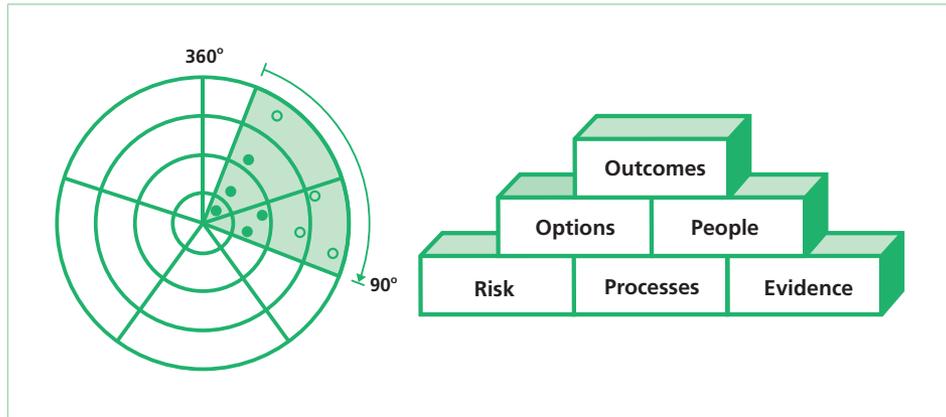
Before we discuss these elements, let us share one of our early missteps, which taught us an important lesson about the role of perspective and approach in team composition. In 2011, the CEO of a business division of a global commodities company asked us to help develop a three-year talent strategy. 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.

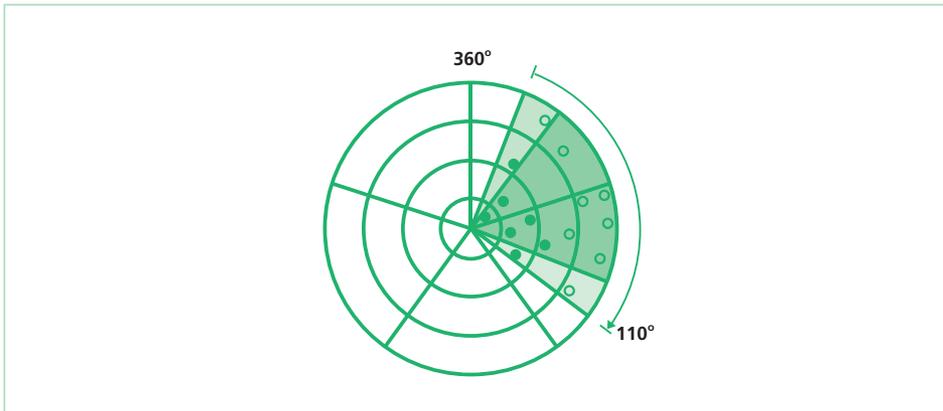
¹⁸ McPherson, M., Smith-Lovin L., and Cook, J. M., (2001) Birds of a feather: Homophily in social networks. *Annual Review Sociology* Vol 27 pp. 415-44.

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 Nielsens' 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.

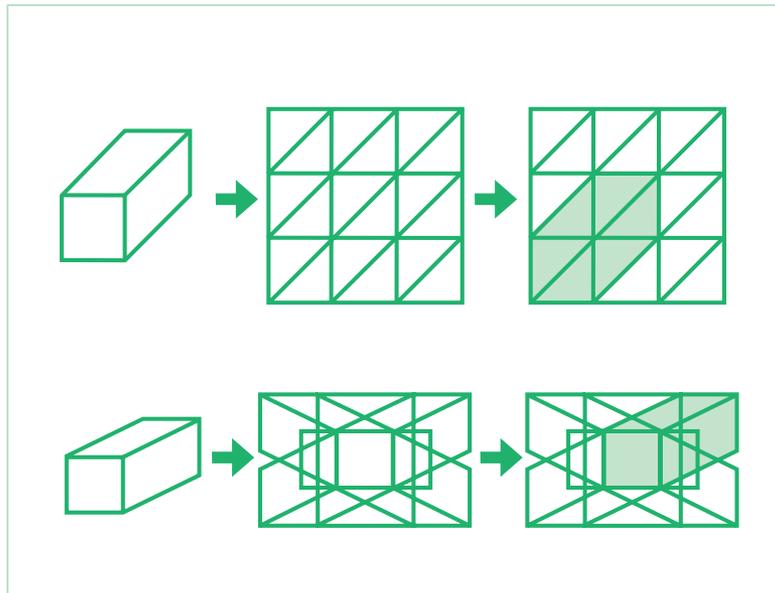
From these two studies you might assume that we have already answered the exam question, “Yes, there is a difference between the way people ‘see’ a situation, and that difference is influenced by race/culture”. Before you get too excited, you need to know that a surprise occurred in the panda study when 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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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.