



The safety of cultures

Just say 'no'. Or perhaps you can't.
Nick Hallale looks at the inherent dangers
of cross-cultural communication

I grew up in South Africa in the 1970s and 1980s, and although many historic things happened during that era, one small occurrence also stands out for me. One of my teachers had worked at a school for Zulu children, and he told an interesting story about how the pupils would all refuse to stand up for him when he entered the room.

Now, at my own school, refusing to stand for a teacher was seriously disrespectful, and was typically rewarded with a caning. However, none of the Zulu children were punished. Why?

The reason is that in Zulu culture, it is considered rude to stand higher than someone older than you. At their schools, you show respect by sitting down in the presence of a teacher, and so those children were doing exactly the right thing.

I have always liked this story – it illustrates two themes important to this article. Firstly, it shows how we all see things through the filters of our own societies. Secondly, it demonstrates how people from different cultures can have totally different ways of interacting with people they perceive as senior. As we will discuss, this is a hugely important phenomenon which can have disastrous consequences if not recognised.

how culturally aware are you really?

I like to break cultural awareness into three levels of achievement. Many engineers – especially those working in large multinational companies – have probably been exposed to initiatives about diversity and inclusion, with the goal of teaching respect and tolerance for people regardless of their race, gender, religion and so on. Of course, this is all very commendable, but only just scratches the surface, and is merely level 1.

Level 2 is when you start to learn about the specific customs and etiquette of a particular culture. This is very valuable for keeping relations smooth, and avoiding giving offence or making a faux pas. Many of these pointers are not intuitive, but you can learn them pretty easily from books, websites or training courses.

Although a significant improvement over level 1, there is still more. Level 3 is something different, and is when you are able to ‘get inside’ the head of someone else, truly understand their thought processes, and extract the real intent behind what they are saying. You also need to be able to convey your own intent without miscommunication. (A perfect example of someone at level 3 would be Neil Armstrong’s interpreter, as discussed in the box on page 26.)

Of course, reaching this level of ability is very difficult, and so I would like to discuss some tools that can help.

tools for understanding different cultures

In the late 1960s, Geert Hofstede¹, a Dutch mechanical engineer who later switched to psychology, carried out a research project for IBM into cross-cultural behaviour and collaboration. His pioneering work showed that different societies could be given numerical scores to represent various aspects of behaviour. Currently, his methodology comprises six cultural dimensions: power distance index (PDI); individualism versus collectivism (IDV); masculinity versus femininity (MAS); uncertainty avoidance (UAI); long-term orientation (LTO); and indulgence versus restraint (IVR).

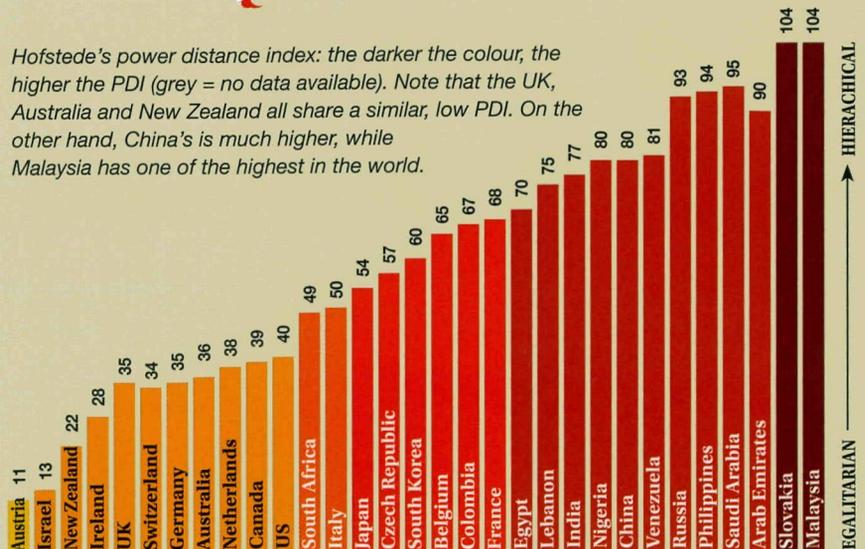
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pdi: POWER DISTANCE INDEX

Power distance index (PDI) is the degree to which the less powerful members of a society accept and expect that power is distributed unequally. Societies with a high PDI tend to be very hierarchical, with very clear divisions between juniors and seniors. On the other hand, low-PDI societies are flatter and more egalitarian.



Hofstede’s power distance index: the darker the colour, the higher the PDI (grey = no data available). Note that the UK, Australia and New Zealand all share a similar, low PDI. On the other hand, China’s is much higher, while Malaysia has one of the highest in the world.



Data from <http://geert-hofstede.com/countries.html>

When addressing a superior, a person from a high-PDI society would tend to soften or mitigate their speech, often hinting about a concern, rather than stating it directly. Provided that the listener is attuned to the subtleties of the culture, the message still gets across.

This article will only discuss PDI (see box). The other dimensions are still highly interesting and can be found on Hofstede's website, <http://geert-hofstede.com/dimensions.html>.

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Now, obviously, no attempt to quantify human nature could ever be perfect, but Hofstede's dimensions are still very valuable, as long as we remember to treat them like any other engineering rule of thumb.

recognising different forms of speech

In societies with a low PDI, managers are often seen as 'first among equals', and communication tends to flow easily in both directions. However, in those with a high PDI, this is certainly not always the case. Juniors tend not to disagree with, or criticise, their seniors, and may even use a different form of grammar, depending upon their relative positions.

In addition, when addressing a superior, a person from a high-PDI society would tend to soften or mitigate their speech, often hinting about a concern, rather than stating it directly. Provided that the listener is attuned to the subtleties of the culture, the message still gets across. However, it is very dangerous to assume that a non-native will have that level of sensitivity.

the art of refusing without refusing

In many societies – often also those with high PDIs – people have a strong aversion to saying the word "no". Asian countries like Japan are probably the most famous for this, but it occurs elsewhere too. In those societies, having to say no is seen as a loss of face, particularly when saying it to a superior. Conversely, it is considered boorish to put someone in a position where they have to say no.

As a result, these cultures have developed elegant ways of communication that avoid the situation completely. Requests can be made obliquely, and refused subtly, without anyone being put in an awkward situation, while to an outside observer, it would just appear to be two people talking.

To make it even more confusing, some of the responses that really mean "no" can sound like a "yes" to an outsider.

Again, provided that both parties understand the nuances, this works. However, when somebody from a different culture enters the picture, it becomes far less reliable.

Although dealing specifically with Japan, some interesting insights can be found in this online article: http://www.kuis.ac.jp/icci/publications/kiyo/pdfs/14/14_06.pdf

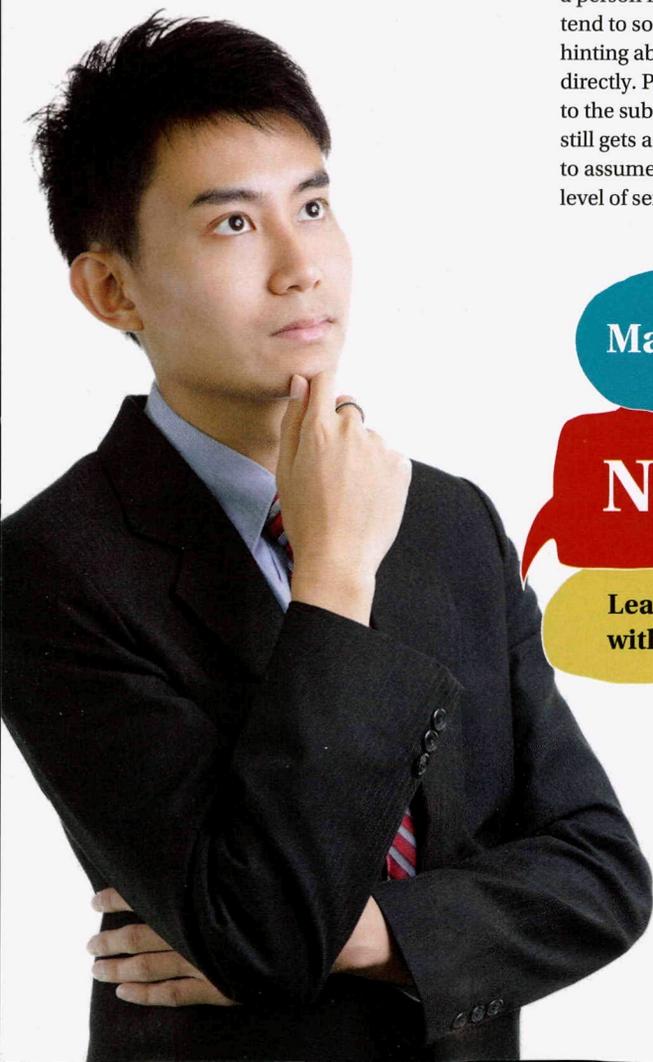
so what does this have to do with process safety?

The connection comes via an engineering topic known as 'human factors,' which analyses the way people interact with complex systems.

Gladwell² does a fascinating job of correlating cross-cultural factors to several high-profile aviation disasters. Although a different industry to our own, the lessons are still valuable, and I highly recommend his book.

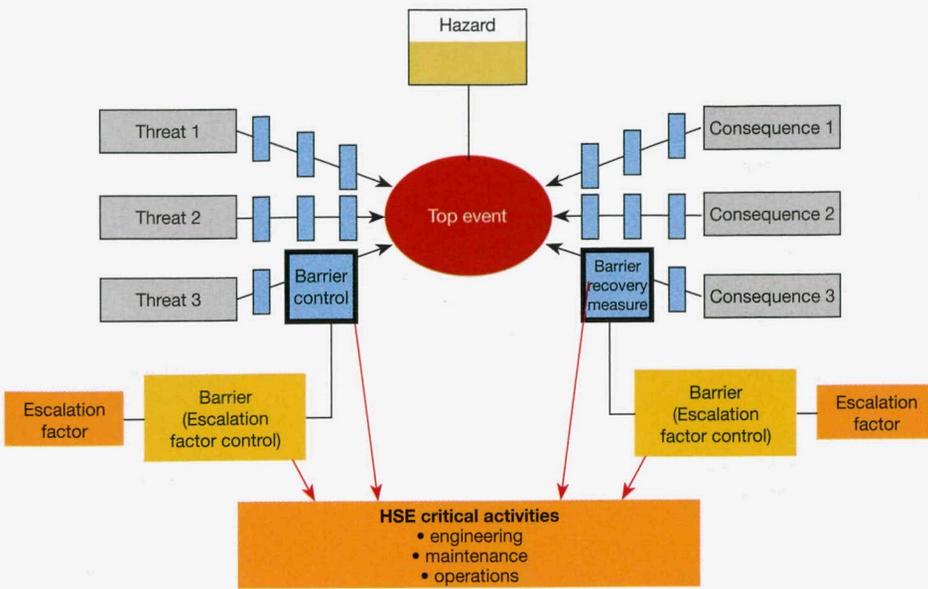
It does not take much of a stretch to see how similar scenarios could play out in the manufacturing industry. In the popular bowtie model for analysing process safety (see Figure 2), human beings are often considered to be a barrier against a hazardous situation developing or escalating. However, this line of defence is not infallible, and is more likely to fail when it relies on more than one person, and where cultural differences lead to miscommunications during safety-critical moments.

For example, imagine that an operator in a control room receives an alarm that gas has



In many societies – often also those with high PDIs – people have a strong aversion to saying the word "no" and tend to use other words to express a refusal. Just because something sounds like a "yes," don't assume that this is really the case.

Figure 2: The popular 'bowtie' model for process safety relies on operators as barriers



been detected in an LPG storage compound. He radios the outside operator and tells him to shut an isolation valve immediately to stop the leak. The outside operator sees that the LPG leak is too big and that he simply cannot approach the valve safely. Hopefully he would radio back and explain that this is impossible and an alternative should be found. But imagine if he came from a culture where he was not happy saying "no" directly, especially to a senior. He might tone down his response by saying something like "It's a big leak, but I'll see what I can do." In his mind, he has refused, but the inside operator, depending on his background, could easily take this as a "yes." Both would assume that the other person was dealing with the crisis and that no further action was required on their part. All it needs is for the continued leak to find an ignition source, and this

fictional scenario could end very badly.

Another example: a junior operator is working with one more experienced to drain water from a gasoline tank. Imagine that the older operator deviates from the written procedure and wedges the spring-loaded draining valve open with a piece of wood, rather than holding it open manually. You would hope that the second operator would intervene and insist that the proper procedure be followed. But if the junior originated from a high-PDI society, would they really feel able to challenge their superior? Possibly not. They might try hinting at their concern, saying something like "That's an interesting way of doing it!", but this could have little meaning unless the senior came from a similar culture. Even worse, the junior may believe that they are mistaken because of their own 'inferior'

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status, and put the incident out of mind. If the older operator remembers to remove the wedge, things would probably proceed without incident. But if forgotten about, leaving the tank to drain until the next shift, the company could end up with a bund full of gasoline, and potentially another Buncefield on its hands.

what can we do?

The above examples should certainly make our industry question the strength of our human barriers, but fortunately this does not mean they are necessarily invalid. It just means that they may need some bolstering in today's world.

Gladwell described how one Korean airline addressed its poor safety record by changing the cockpit culture. Regardless of the culture outside work, the company retrained staff to lower the PDI in the workplace, empowering junior crewmembers to act assertively on their safety concerns.

On the topic of training, a little bit of awareness building can go a long way. If a company knows that significant interaction with another culture is looming - for

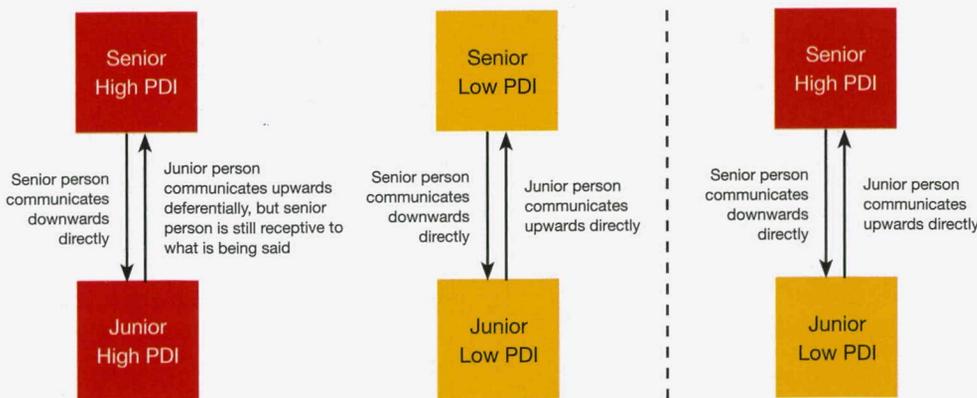


Figure 3a: All other things being equal, when both individuals have the same societal PDI, the risk of miscommunication is reduced.

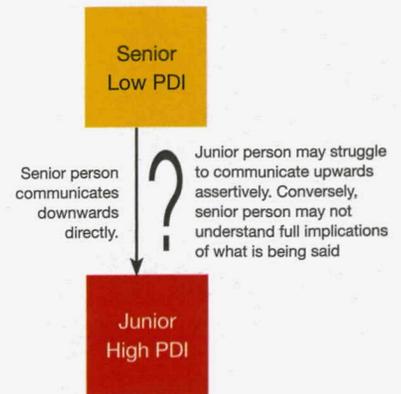


Figure 3b: Mismatched PDIs can introduce risks of miscommunication when the high-PDI individual is junior to the low-PDI individual



What's it like up there?

In 1972, still at the height of his fame after the successful moon landing, Neil Armstrong was on a world tour, and one of his speaking engagements was at a school in Japan for very young children. One of them asked him, via an interpreter, "Mr Armstrong, what was it like on the moon?"

Armstrong replied jokingly, "Well, I didn't see any green cheese, that's for sure!"

The interpreter turned to the child and said, in Japanese, "Well, I didn't see any rabbits, that's for sure!"

Huh? What kind of incompetent interpreter was this? Mistranslating green cheese as rabbits! He should have been fired, right? Actually, no.

In fact, this interpreter did an outstanding job, and demonstrated the highest level of cultural awareness. You see, in Japan, children are not brought up with the story that the moon is made of green cheese. That's a Western idea. In Japan, children learn a fairytale about a rabbit who lives on the moon making rice cakes.

That interpreter knew that if he just relayed Armstrong's words, the answer would have been meaningless. Instead, he deciphered the intent behind the words and then seamlessly repackaged it in a form that the Japanese child would understand. The end result was perfect.

Granted, this is a somewhat childish story, but it brilliantly illustrates the principle that taking someone's words at face value, without properly appreciating the intent behind them, can be misleading, even dangerous.

Every society has evolved certain behaviours, styles and conventions that work for it, within its own particular environment...blindly transplanting these systems into a completely different environment is simply looking for trouble.

instance, a Chinese company acquiring a plant in the UK – it would be wise to let people on both sides know what to expect from their future colleagues.

Finally, the engineer in me likes the idea of using PDIs to flag up potential miscommunication risks between specific combinations of team-members (see Figure 3). All other things being equal, you would be less concerned about two operators from the same culture working together as senior and junior. A high-PDI operator in a senior role to a low-PDI operator could also probably work well, since neither would feel culturally inhibited from speaking frankly to the other. On the other hand, the combination of a high-PDI operator in a junior position to a low-PDI one might potentially have some challenges. With a bit of knowledge, though, these could be overcome easily.

raising capabilities

This article is not about 'right' or 'wrong' approaches. Please do not come away thinking that somebody from one culture is inherently more or less safe than somebody from another. That would be an incorrect conclusion, and is most emphatically *not* the message here.

Rather, the message is this: Every society has evolved certain behaviours, styles and conventions that work for it, within its own particular environment. As long as everyone follows them, they continue to work as designed. But, like computer software, blindly transplanting these systems into a completely different environment is simply looking for trouble. Since the globalisation of the manufacturing industries is not going to go away, the only real option now is to raise our own personal capabilities. **tce**

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further reading

1. Hofstede, G, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, SAGE Publications, 2001
2. Gladwell, M, *Outliers: The Story of Success*, Little, Brown and Company, 2008

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