

East meets west: How the brain unites us all

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Similarities between different groups of people are far greater than the differences (Image: Danny Lehman/Corbis)



AS A SPECIES, we possess remarkably little genetic variation, yet we tend to overlook this homogeneity and focus instead on differences between groups and individuals. At its darkest, this tendency generates xenophobia and racism, but it also has a more benign manifestation - a fascination with the exotic.

Nowhere is our love affair with otherness more romanticised than in our attitudes towards the cultures of east and west. Artists and travellers have long marvelled that on opposite sides of the globe, the world's most ancient civilisations have developed distinct forms of language, writing, art, literature, music, cuisine and fashion. As advances in communications, transport and the internet shrink the modern world, some of these distinctions are breaking down. But one difference is getting more attention than ever: the notion that easterners and westerners have distinct world views.

Psychologists have conducted a wealth of experiments that seem to support popular notions that easterners have a holistic world view, rooted in philosophical and religious traditions such as Taoism and Confucianism, while westerners tend to think more analytically, as befits their philosophical heritage of reductionism, utilitarianism and so on. However, the most recent research suggests that these popular stereotypes are far too simplistic. It is becoming apparent that we are all capable of thinking both holistically and analytically - and we are starting to understand what makes individuals flip between the two modes of thought.

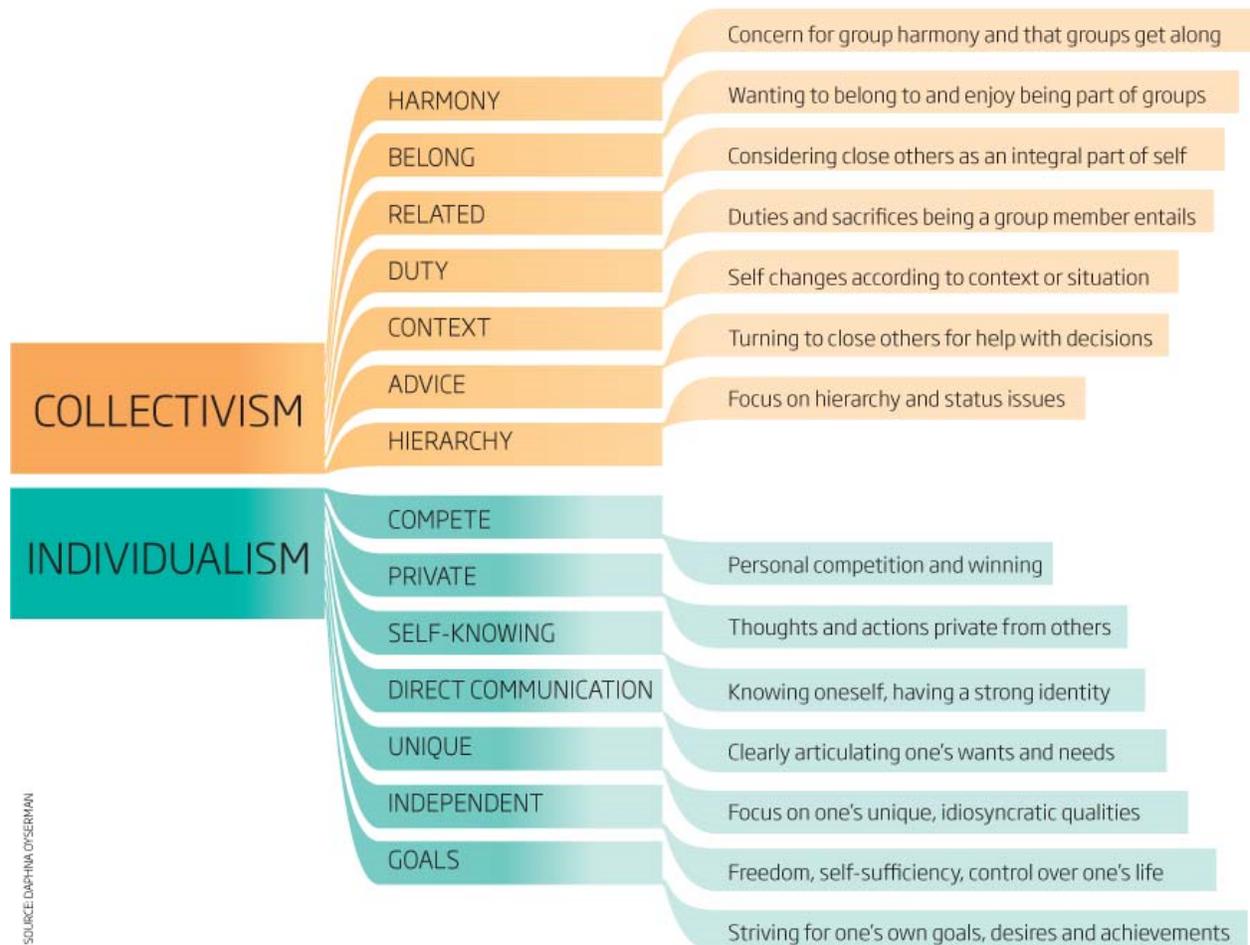
One of the pioneers of this research is Richard Nisbett from the University of Michigan, Ann Arbor. In his book [The Geography of Thought](#), he recounts a study done in 2001 in which he asked American and Japanese students to describe animated videos of underwater scenes. As befits the stereotype, the Americans were more likely to start by mentioning prominent objects such as brightly coloured moving fish or aquatic plants, while the vast majority of the Japanese students started by saying something about the context - the scene looked like a stream, or the water was green. They also mentioned more relationships between the objects and their environment. In another experiment, using eye-tracking equipment and a picture of a tiger in a jungle, Nisbett found that Americans tended to look at the tiger more quickly and focus on it for

longer than did Chinese people, whose gaze flicked more often between the animal and the background.

Over the years, Nisbett and others have amassed evidence to suggest that such differences in visual attention influence the way in which

Solo or combo?

The way you see yourself may shape the way you think. If the characteristics associated with collectivism describe you, then your world view will tend to be holistic. If you fit the description of an individualist you are likely to think in a more analytical way



SOURCE: DAPHNA O'SERMAN

people from east and west think about the world. For a start, they affect how people categorise objects, with east Asians tending to group things according to how they relate to each other and Americans tending to rely on shared features. When shown pictures of a chicken, a cow and some grass, and asked to decide which two objects belong most closely together, for example, most American kids choose the chicken and cow, since they are both animals, while Taiwanese children tend to group the cow and the grass together because one eats the other ([International Journal of Psychology, vol 7, p 235](#)). Likewise, Nisbett found that American students usually group "monkey" with "panda", while Chinese students see "banana" as a better fit for "monkey" ([Journal of Personality and Social Psychology, vol 87, p 57](#)).

There also seem to be distinctly eastern and western views of causality. Americans are more likely to explain murders and sports events by invoking the traits and abilities of individuals,

while Chinese tend to refer to historical factors. One study compared English-language newspaper accounts of a recent killing in the US, in which a postal worker shot his boss along with several bystanders, with Chinese newspaper reports of a graduate student who shot his adviser and bystanders. The English-language papers speculated heavily on the killer's state of mind, while the Chinese papers emphasised his relationships with his superiors and the wider societal factors that could have led to the killings, such as the lack of religion in China or recent massacres elsewhere in the world ([Journal of Personality and Social Psychology, vol 67, p 949](#)).

Cultural differences may even extend to the way people wield logic. Chinese people are happier with contradictions and try to find a middle ground between two opposing positions, while Americans are more inclined to reject one proposition for the other. For example, Nisbett found that when faced with a brief vignette of daughters rebelling against their mothers, three-quarters of Americans suggested that one party was at fault. By contrast, three-quarters of Chinese students assessed the situation from both sides and tried to reconcile the differences between mothers and daughters ([American Psychologist, vol 54, p 741](#)).

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Time and again, studies like these seem to support the same basic, contrasting pattern of thought. Westerners appear to perceive the world in an analytic way, narrowing their focus onto prominent objects, lumping them into categories and examining them through logic. Easterners take a more holistic view: they are more likely to consider an object's context and analyse it through its changing relationships with its environment.

Nisbett has suggested that historical cultural factors are the key to understanding these differences. The intensive, large-scale agriculture of ancient China involved complex cooperation among farmers and strict hierarchies from emperor down to peasant. "You had to pay attention to what other people were doing and you had to obey orders," he explains. "These kinds of strong social constraints on behaviour have been characteristic of east Asian life ever since." The situation in ancient Greece, often thought of as the fount of western culture, was very different: agriculture on such a scale was impossible and most occupations did not require interactions with large numbers of people. The Greeks led independent lives and valued individualism. That allowed them to focus better on objects and goals in isolation, without being overly constrained by the needs of others - traits that persist to this day in western culture. "If that story is all correct, it's not east versus west, it's interdependence versus independence," says Nisbett.

False dichotomy?

Certainly it is appealing to think that a single dimension - individualism/collectivism - can account for much of the difference in people's behaviour around the world. That might explain why many psychologists have been happy to go along with it. However, recently it has become apparent that the east-west dichotomy is not as clear-cut as this.

For a start, the simplistic notion of individualistic westerners and collectivist easterners is undermined by studies designed to assess how people see themselves, which suggest that there is

a continuum of these traits across the globe. In terms of individualism, for example, western Europeans seem to lie about midway between people in the US and those in east Asia.

So it's not all that surprising, perhaps, that other studies find that local and current social factors rather than the broad sweeps of history or geography tend to shape the way a particular society thinks. For example, Nisbett's group recently compared three communities living in Turkey's Black Sea region who share the same language, ethnicity and geography but have different social lives: farmers and fishers live in fixed communities and their trades require extensive cooperation, while herders are more mobile and independent. He found that the farmers and fishers were more holistic in their psychology than herders, being more likely to group objects based on their relationships rather than their categories: they preferred to link gloves with hands rather than with scarves, for instance ([Proceedings of the National Academy of Sciences, vol 105, p 8552](#)). A similar mosaic pattern of thought can be found in the east. "Hokkaido is seen as the Wild West of Japan," says Nisbett. "The citizens are regarded as cowboys - highly independent and individualistic - and sure enough, they're more analytic in their cognitive style than mainland Japanese."

Is it time we moved beyond simplistic notions of eastern and western psychology? Daphna Oyserman from the University of Michigan in Ann Arbor certainly thinks so. She is not happy invoking history to explain modern human behaviour. "We can't test if history mattered," she says. "But we can test how contexts can evoke one or other mindset."

Isolation and conformity

Take social isolation. It has been suggested that the stereotypical eastern world view stems partly from a greater concern about being isolated from social groups, which makes people more likely to conform and attend to interpersonal relationships. Art Markman and his then colleague Kyungil Kim at the University of Texas in Austin wanted to see how isolation would affect the mindset of American students, so they asked them to remember occasions either when they had been ostracised from a group or when they had excluded others ([Journal of Experimental Social Psychology, vol 42, p 350](#)). The students then studied photos of different cows against various backgrounds and later had to pick out the animals they had seen from a larger set. For students who recalled shunning others, it made little difference to their performance whether the cows appeared against new backdrops. However, students who had recalled being socially snubbed were better at spotting cows they had seen before against the same background, indicating that they paid more attention to the relationship between the cows and their environment. In fact, they behaved much as you might expect east Asians to do when given the same task.

This experiment suggests that while the psychology of westerners may be superficially distinct from easterners, when social isolation is an issue there is little difference between the two. In fact, Oyserman's analysis of 67 similar studies reveals just how easily social context can change the way people think. For example, psychologists have "primed" east Asian volunteers to adopt an individualistic mode of thought simply by getting them to imagine playing singles tennis, circling single-person pronouns or unscrambling sentences containing words such as "unique", "independence" and "solitude". In many of the experiments volunteers from a single cultural

background - be it eastern or western - show differences in behaviour as large as those you normally get when comparing people from traditionally collectivist and individualist cultures.

The ease with which priming can alter our modes of thought makes it very unlikely that a penchant for either analytic or holistic thinking stems from deep-seated differences in the brains of westerners and easterners. Instead, it seems that the cultural context in which we grow up simply gives us more practice in thinking about the world in a particular way. "Everyone can think both ways, but on average, people tend to do more of one than the other," says Oyserman.

Brain imaging supports this. In an experiment that involved subjects looking at a series of squares with lines in them, Trey Hedden from the Massachusetts Institute of Technology found that in east Asians the areas of the brain involved in focusing attention worked harder if they had to identify lines of the same length regardless of the surrounding squares - an "absolute" task that requires you to focus on an object regardless of its context. But with Americans the same brain areas were working harder to identify lines whose sizes varied proportionally with their squares - a "relative" judgement where context is key ([Psychological Sciences, vol 19, p 12](#)). In other words, people had to think harder to perform tasks outside their cultural comfort zone. The brain uses the same mental machinery to solve complex tasks, but cultural differences can affect how well trained these areas are.

Intriguingly, Hedden also discovered that in both groups, people who identified more strongly with American culture found the absolute task easier. Such ease of transition between different modes of thinking is even more pronounced in people with roots in more than one culture. Verónica Benet-Martínez from the University of California, Riverside, found that it takes very little to prime the perception of people who have grown up with cultural influences from both east and west. When she asked a group of Chinese students in Hong Kong to watch a video of a single fish swimming in front of a shoal, those who had previously seen American symbols such as the US flag were more likely to claim that the solitary fish was leading the others. However, subjects primed with Asian symbols, including a Chinese dragon, perceived the event's context as more important and were more likely to describe the scenario as a shoal chasing after a renegade ([Journal of Cross-Cultural Psychology, vol 33, p 492](#)).

Clearly, the dichotomy between holistic eastern and analytical western thinking is more blurred than the stereotypes suggest. If we all flip between different modes of thought depending on social context, says Oyserman, psychologists should be trying to find out which contexts provoke the holistic and which the analytical mindset, rather than perpetuating a false divide.

This approach is all the more important, she says, because the supposed dichotomy is based on limited evidence, with China and Japan representing the east in most studies and the US and Canada flying the flag for the west. In many regions, from southern Asia to Latin America, studies are extremely scarce, and even better-studied Europe is mostly embodied by the unrepresentative duo of Germany and the Netherlands. "The kind of things that cue analytic or holistic thought may be very different in these [neglected] societies," Oyserman says. "Honour, for example, is a hugely important issue in areas that haven't been studied very thoroughly, like the Middle East, Africa or Latin America."

What is clear is that the minds of east Asians, Americans or any other group are not wired differently. We are all capable of both analytic and holistic thought. "Different societies make one option seem to make the most sense at any given moment," says Oyserman. But instead of dividing the world along cultural lines, we might be better off recognising and cultivating our cognitive flexibility. "There are a lot of advantages to both holistic and analytic perception," says Nisbett. In our multicultural world it would benefit us all if we could learn to adopt the most appropriate mode of thought for the situation in which we find ourselves.

Instead of dividing the world along cultural lines we should recognise and cultivate our cognitive flexibility

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