

The world shifts to the right when you're sleepy

When you're drowsy, new research shows that what's happening on your left often sounds to you as though it's happening on your right. Perhaps that's why it can be so tricky to land a punch on the alarm clock in the morning!

Corinne Bareham and her team asked 26 healthy volunteers (17 women; all right-handers) to relax in a comfortable reclining chair, to close their eyes, and listen to a series of tones. The tones occurred either on the left or right side of space, some further from the centre than others.

After each tone, the participants pressed a button to indicate whether they thought it had originated on the left or right side of space. While this was going on, the researchers recorded the participants' surface brain activity using EEG (electroencephalography). This provided an objective marker of their sleepiness.

The task may appear easy, but when the participants were sleepy, they mislocated nearly 25 per cent of left-sided tones to the right. This compares to an error rate of under 14 per cent when they were alert. 'A participant was 17 times more likely to show a right-ward shift with drowsiness... than a leftward shift, or no shift,' the researchers said.

In contrast, the participants were slightly more accurate at locating right-hand tones when sleepy compared with when alert.

The finding that tiredness triggers a shift in attention to the right-side of space is not new – researchers have shown this before. However, past demonstrations of the phenomenon have used visual stimuli. This study is novel because of its use of auditory tones and because of the highly accurate measurements of participants' alertness.

Research on this topic has clinical relevance. The drowsiness-induced attentional shift towards the right side of space is similar to a phenomenon known as 'spatial neglect' that's observed in patients who have suffered right-hemisphere brain damage. People with left-sided brain damage show the opposite pattern – they tend to ignore the right-hand side of space. However, right-hemisphere brain damage leads to

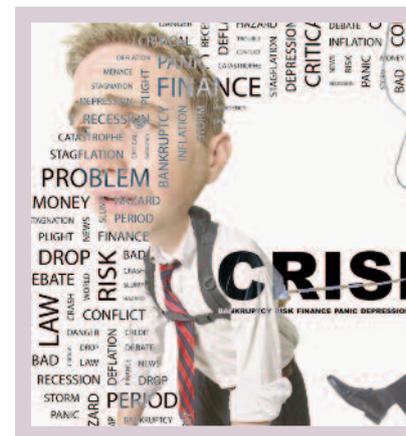
more prolonged and profound spatial neglect than left-sided damage, and this new study offers a clue as to why.

One explanation for spatial neglect following left- or right-sided brain damage is that the two hemispheres of the brain are usually in competition, so that when one is damaged, balance is lost, and attention is skewed towards the same side of space as the brain damage. However, people with right-sided brain damage suffer twice, because damage to the right hemisphere is known to induce sleepiness, which – as this study shows – also leads to a skewing of attention to the right side of space.

In the researchers' words, patients with right-hemisphere damage are 'doubly compromised' – by the loss of hemispheric balance, and by the effects of drowsiness. The good news is that this insight offers an avenue for treating patients with right-sided brain damage. 'The results here confirm that the maintenance of alertness should be... [an] important therapeutic target,' the researchers said.



In *Scientific Reports*



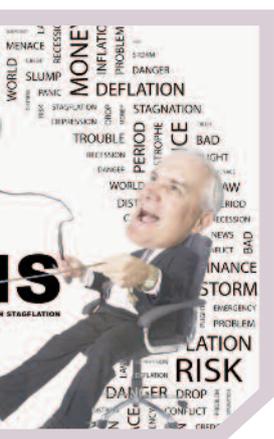
When the going gets tough, supervisors pick on their weaker staff

In the *Journal of Occupational and Organizational Psychology*

A crisis changes everything. Friends are gone, and survivors must adapt to a new, dangerous environment. In the aftermath, predators circle to exploit the weak and vulnerable. According to new research, this not only describes the red tooth and claw of nature, it also applies to the workplace. Pedro Neves at the New University of Lisbon provides evidence that following an organisational downsizing, employees are more likely to receive abuse from their supervisors.

Neves was guided by displaced aggression theory – the idea that workplace abuse is often a form of 'kicking the dog' – venting our frustrations not at their source, rather at those whom we have power over. Neves predicted that this leads supervisors to target those most unable or unwilling to retaliate: submissive individuals characterised by low 'core self-evaluation' (CSE; a combination of personal traits relating to self-image including self-esteem and belief in one's own abilities), and/or those with fewer co-worker allies.

Survey data from 12 large and medium-sized Portuguese organisations from a range of industries – financial to construction to health care – confirmed that individuals with lower CSE or less co-worker support were at the receiving end of more abuse, based on their self-ratings of items such as 'my supervisor blames me to



Using speech fillers such as 'I mean' and 'you know' is a sign of conscientiousness

In the *Journal of Language and Social Psychology*

save himself/herself embarrassment' or 'tells me my thoughts or feelings are stupid'. Four of the organisations had gone through downsizing in the prior two years, and in these, submissive employees were even more likely to be picked on. A post-downsizing environment involves uncertainty, ruptures to social networks, and a higher sense of individual risk – all of which heightens vulnerabilities and gives confidence to aggressors that their abuse is unlikely to be fought against.

The data also showed that submissive individuals performed more poorly and engaged in fewer organisational citizenship behaviours, which Neves argues is evidence of the employees also 'kicking the dog' – in this case channeling their resentment of the supervisor into minor acts to undermine the organisation.

As this was a cross-sectional survey we have to be careful about drawing such causal inferences, but further analysis suggested two obvious alternative explanations were unlikely: that submissive traits were the consequence of supervisor criticism; or that abuse was causing both poor performance and the submissive traits.

Neves advises facilitating co-worker support as a bulwark against exploitation of the vulnerable, and to build the CSE of employees. These are good things to encourage in any case – but ultimately, the responsibility for change lies not with the abused, but the abusers, to cease picking on the weak.

Few people are capable of speaking spontaneously without, er, you know, pausing and using filler words every now and again. However, we all differ in the extent to which we do this, and now a study has examined how use of filler words varies according to age, gender and personality.

Charlyn Laserna and her colleagues used recordings of everyday speech collected from hundreds of participants in earlier studies performed between 2003 and 2013. They specifically looked at utterances of *uh*, *um* (known as 'filled pauses') and *I mean*, *you know*, and *like* (known as 'discourse markers').

The purpose of these kinds of words is not straightforward – they can be a sign of being tongue-tied, but they can also be a way to keep hold of one's turn in a conversation, to form a bridge between phrases or sections of conversation, to seek consensus, or convey uncertainty.

Use of discourse markers was more frequent among younger people, and among women versus men. However, the gender difference was only present in teen and student participants, and had disappeared from age 23 and up.

Discourse markers were also used more frequently by people with a more conscientious personality. Uhs and ums became less common with age, but their use was not related to gender or personality.

This last point is somewhat surprising since such hesitations are often assumed to be a sign of anxiety.

Why should use of phrases such as *like* and *you know* be related to conscientiousness? One possibility is that this is a false-positive result – the researchers performed multiple comparisons looking for links between personality and word use, and this is known to increase the risk of spurious findings. However, assuming the finding is reliable, the researchers believe the explanation is that 'conscientious people are generally more thoughtful and aware of themselves and their surroundings', and their use of discourse markers shows they have a 'desire to share or rephrase opinions to recipients'.

Stated slightly differently, discourse fillers are a sign of more considered speech, and so

it makes sense that conscientious people use them more often. This is a result that may surprise some, including the veteran actress Miriam Margolyes, who publicly castigated pop star Wil.I.Am for his overuse of 'like'. The researchers didn't propose any explanation for why age and gender are related to use of discourse fillers.

Laserna and her team believe their findings are useful because they suggest that people's habits of speech can be used to make inferences about their personality, age and gender. 'From a methodological standpoint, the use of discourse markers can provide a quick behavioural measure of personality traits,' they said. So, you know, don't be put off next time you hear someone, like, using discourse fillers. I mean, it could actually be a sign that they're conscientious.



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