Issue 140 Contents:

1. The harm caused by witnessing rudeness
2. Head-size and attention linked in autism
3. Paralysis deniers helped by witnessing video of themselves
4. How Obama could be bad for racial equality
5. It’s those Voodoo correlations again
6. Classroom lighting harming pupils’ performance
7. What do children make of robot dogs?

Further information

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The harm caused by witnessing rudeness

Seeing one person be rude to another can stunt a person's creativity, impair their mental performance and make them less likely to be civil themselves. Christine Porath and Amir Erez, who made this finding, say it has profound implications for the workplace, where rudeness has been described by some as a modern epidemic.

Across three studies, Porath and Erez recruited undergrad students to take part in what they were led to believe was an investigation into personality and task performance. Porath and Erez contrived situations in their lab so that the student participants witnessed either a researcher be rude to a student for turning up late, or one student be rude to another student for taking so long over a consent form.

Witnessing an act of rudeness, whether committed by a researcher or student, led the participants to solve fewer anagrams, come up with fewer uses for a brick (and to come up with more aggressive uses!), made them less likely to offer to participate in another study, and lowered their mood.

A third study showed that the harmful effects of witnessing rudeness were greater when students were enrolled in a collaborative group task, compared with when they were enrolled in a competitive group task where they had something to gain from the rudeness victim's ordeal. Although the harmful effects were lower in the competitive scenario, they were still present.

Porath and Erez said this is the first study to their knowledge that has investigated the direct effects of merely witnessing rudeness as opposed to being the target of rudeness. Future research is needed to explore the mechanisms by which witnessing rudeness leads to the harmful outcomes reported here.

"The conclusion that rudeness may not be contained within the instigator-target dyad and that it affects performance is theoretically and practically significant because it implies that the organisational functioning and climate could be affected by isolated rude incidents," the researchers said.


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Head size linked with attention-to-detail in autism

Like many people with autism, the celebrated artist Stephen Wiltshire has an incredible ability to focus on small details, as evidenced by his beautifully intricate art-work (see image). However, in the lab, psychologists have struggled to pin down this feature of autism.

Some studies have revealed a global-processing deficit, some haven't. Others have shown a local-processing bias, some haven't. The very latest findings suggest that some, but not all, children with autism specifically show an exaggerated difficulty switching from the local detailed level to a more big-picture global level: an anomaly that can actually lead to advantages when attention is left focused on tiny details. Now a new study has linked this attentional style with head size. It's an exciting finding that could help explain why not all children with autism show the attentional anomaly, and which could also help link the cognitive anomaly with a neurological mechanism.

Sarah White and colleagues tested 49 high-functioning children with autism and 29 neurotypical controls on a task that required them to flick their attention back and forth from a local to a more global level. Specifically they had to either identify large letters made up of smaller blocks, or they had to identify lots of smaller letters that were the size of those blocks.

Consistent with recent findings, a portion of the children with autism showed a very specific deficit - that is, their performance was poorer than the other children when switching from processing at the local to the global level. Crucially, it was the autistic children with abnormally big heads who were the ones to show this anomaly.

A possible neural mechanism underlying this local-global switching deficit seen in some autistic children is abnormal brain wiring, perhaps originating during the pruning phase of neural development when many neurons and synapses are destroyed in a carefully controlled biological process. The new findings suggest that an enlarged head could be a marker for the existence of this abnormal wiring.

A follow-up study tested 12 neurotypical children with big heads and found that, unlike autistic children with big heads, they did not show a deficit in switching from local to global processing. However, these neurotypical children were physically larger in height as well as head size, unlike the big-headed autistic children who were the same height as their smaller-headed peers. This reinforces the idea that it is only when head size is a marker for abnormal brain wiring - as seen in some children with autism - that it is linked with a cost switching to global processing.

"The tentative hypothesis can therefore be proposed," the researchers said, "that head size may be a biological marker of abnormal neural connectivity, resulting in a locally oriented processing style, and may provide a useful endophenotype for investigating the genetic basis of a subgroup of individuals with autistic spectrum disorder."


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Paralysis deniers could be helped by seeing video of themselves

People with limb paralysis caused by a recent stroke or brain injury often deny that they have a problem -a condition known as "anosognosia". As well as being a neurological curiosity, anosognosia has serious practical implications. Such patients often won't cooperate in rehabilitation exercises or will deny they need certain medications. Now Aikaterini Fotopoulou and colleagues think they may have stumbled on a way to ameliorate the condition.

The intervention involves the patient watching a video of themselves attempting to perform a given movement instruction. Fotopoulou's team tested this on a 67-year-old woman who for 22 days since her stroke had displayed anosognosia for her left-sided paralysis. For example, when asked to reach the doctor's hand with her left hand, she would consistently use her right hand. She knew it was her right hand but couldn't or wouldn't explain why she hadn't reached with her left.

By contrast, when the woman was shown a 90 second video clip of herself performing these tests, she showed sudden and immediate insight into her condition. "I cannot move at all," she said. Asked what made her change her mind, she said: "The video. I did not realise I looked like this." Anosognosic symptoms do usually fade with time, but not in an abrupt fashion like this.

The researchers explained that different regions in the brain support a first-person and third-person recognition of ourselves and it's possible that the areas supporting a third-person perspective were spared in this woman (and likely will be in many other people with anosognosia too), thus allowing her to appreciate the reality of her condition on the video.

Another explanation for the finding is that there may be a difference between a patient's insight during an attempted movement and their insight when watching themselves retrospectively.

This would be consistent with another recent study by Fotopoulou's group, in which patients with anosognosia had to judge whether a prosthetic hand, made to look like their own, had moved or not. The patients, but not controls, were more likely to erroneously report the hand had moved if they'd simultaneously been planning a movement of their own. In other words, the patient's intention to move seemed to override the visual feedback showing that no movement had occurred. In the current study, the patient may have understood events when watching the video because she wasn't engaged in any concurrent attempt to move.


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How Obama could be bad for racial equality

America may have a Black president, but the country's racial inequalities, in relation to education, health, incarceration, and wealth, remain rife. In two new studies, psychologists have documented effects that suggest the election of President Obama could, ironically, exacerbate this racial inequality rather than help eradicate it.

Daniel Effron and colleagues presented dozens of predominantly White undergrad students with one of two scenarios that would reveal their favouritism towards White people: one was a hiring decision, the other related to the allocation of funds to communities. Crucially, the students were asked to make their choices about the hiring or funding either before or after they had declared whether they planned to vote for Barack Obama, in what was then the upcoming Presidential election.

Students who declared their intention to vote for Obama before making the hiring/funding decisions subsequently showed more favouritism towards White people than did students who made their decisions first. A third study showed this effect was particularly apparent among more racially prejudiced students.

"Our findings raise the possibility that the opportunity to vote for an African-American for President could have reduced some voters’ concerns about appearing prejudiced, thereby ironically increasing the likelihood that they would favour Whites in subsequent decisions," the researchers said.

In a separate study, Cheryl Kaiser and colleagues compared the support of dozens of predominantly White undergrad students for anti-racist social policies ten days prior to, and one week after, the election of President Obama. They found that support for anti-racist social policies - for example, encouraging diversity in business - was lower after Obama's election compared with before. The students also stated that America had made more progress towards racial progress, and they expressed more support for meritocracy, when asked after Obama's election compared with when they were asked before.

"Barack Obama's presidential victory may have ironic and unintended consequences for remedying racial injustice in the United States," Kaiser's team said. "Specifically, construing President Barack Obama's victory as an achievement in race relations may hinder efforts to eliminate the racial disparities that continue to plague and divide the United States."


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It’s those Voodoo correlations again ... Brain imagers accused of “double-dipping”

This time there's no explicit naming and shaming, and the title may not be as colourful, but a new study out today in prestige journal Nature Neuroscience echoes many of the same concerns voiced earlier this year in the leaked paper "Voodoo Correlations in Social Neuroscience" (since renamed as "Puzzlingly High Correlations ...”). And the new paper's implications are surely just as profound for the cognitive neuroscience community.

Nikolaus Kriegeskorte and colleagues analysed all the fMRI studies published in Nature, Science, Nature Neuroscience, Neuron and Journal of Neuroscience, in 2008, and found that 42 per cent of these 134 papers were guilty of performing at least one non-independent selective analysis - what Kriegeskorte's team dub "double dipping".

This is the procedure, also condemned by the Voodoo paper, in which researchers first perform an all-over analysis to find a brain region(s) that responds to the condition of interest, before going on to test their hypothesis on data collected in just that brain region. The cardinal sin is that the same data are used in both stages.

A similarly flawed approach can be seen in brain imaging studies that claim to be able to discern a presented stimulus from patterns of activity recorded in a given brain area. These are the kind of studies that lead to "mind reading" headlines in the popular press. In this case, the alleged statistical crime is to use the same data for the training phase of pattern extraction and the subsequent hypothesis testing phase.

Kriegeskorte's claim is not that all the studies guilty of this procedure are invalid, but that their data will have been distorted to varying degrees. "To decide which neuroscientific claims hold, the community needs to carefully consider each particular case, guided by both neuroscientific and statistical expertise," they wrote.

To support their case, Kriegeskorte's team performed two "mock" experiments of the "region of interest" and "pattern extraction" types. In each case they showed how double-dipping can drastically distort results. For example, in a mock pattern-information analysis they achieved a significant result with double-dipping even after feeding purely random data into the analysis.

The ramifications of these statistical observations don't end with brain imaging. They also have implications for work with electroencephalography, in which researchers are prone to use the same data for selecting relevant channels and testing hypotheses, and for research using single-cell recording.

"A circular analysis is one whose assumptions distort its results," the authors concluded. "We have demonstrated that practices that are widespread in neuroimaging are affected by circularity."


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Lighting conditions in UK classrooms could be needlessly harming children's school performance, psychologists have claimed. Mark Winterbottom and Arnold Wilkins assessed 90 classrooms in 11 secondary schools across the UK during the Summer of 2006.

Past research has shown that fluorescent lights that flicker imperceptibly at a rate of 100Hz are harmful to mental performance. They're easily replaced by more efficient and less harmful lights, yet Winterbottom and Wilkins found 20 per cent of classrooms were lit solely by the harmful variety. In the remaining classrooms, an average of 90 per cent of lighting was of the harmful variety.

Excess or inadequate luminance is another problem in classrooms, usually caused by a lack of control over lighting in different areas of a room. The researchers found that luminance exceeded recommended levels in 88 per cent of the classrooms they investigated. More fine-tuned light control and more use and servicing of blinds could easily ameliorate these issues.

Another lighting problem, brought about since the introduction of data projectors into classrooms, is glare reflecting off the projection screen into pupils' eyes. The researchers found that all bar one of the classrooms they studied had equipment arranged in such a way as to exacerbate this problem, with projectors on the ceiling and screens mounted vertically. The situation can be improved by tilting the screen upwards slightly, so that the glare is directed towards the ceiling.

"Most of these problems are unnecessary and appear due to poor policy decisions," Winterbottom and Wilkins concluded. "In most cases, action to correct the problems would be simple, and any costs would be offset in the medium term, due to increased efficiency, reduction of wastage, and benefits in terms of health of pupils and staff."


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What do children make of robot dogs?

Whether something is living or not is a crucial distinction, and it's one that children already understand by the age of five. What then do children make of the latest generation of robot pets - toys designed to be as "alive" as possible? It's a surprisingly little researched area, but with the shuttle rate of technological advance in toy-land, it's one that's bound to become increasingly relevant.

Gail Melson and colleagues filmed 72 kids, aged 7 to 15 years, playing for 45 minutes with a Sony Aibo robot dog and for 45 minutes playing with a real-life pooch of the Australian Shepherd breed. The Sony 210 Aibo dog was the most advanced robot dog at the time this research was conducted. It was capable of walking after a pink ball, kicking and headbutting it. It could also shake itself, sit down, lie down, offer its paw, learn, and display positive and negative emotion via lights.

As well as filming the children, the researchers also asked them questions about the biological (e.g. does X eat?), mental (e.g. can X feel happy?), and social (e.g. does X like you?) properties of the two dogs, as well as their moral standing (e.g. is it OK or not OK to hit X?).

The picture that emerged was mixed. On the one hand, the children clearly saw the real dog as more real and alive than the robot dog. They also examined the robot dog as if it were an object rather than a creature - prodding it and picking it up. On the other hand, there were signs that the children saw the robot dog as more than a mere toy. For example, over 80 per cent of the children spoke and gave commands to the robot dog as often as they did to the real dog. Nearly half the children petted the robot dog gently at least once, despite its metallic surface. Moreover, the children were no more likely to say it was okay to hit the robot dog than they were to say it was okay to hit the real dog! In all cases there was a trend for older children to see the robot dog as less real.

"These children were surprisingly willing to treat the robot dog as 'dog like',' the researchers concluded. "...[S]uch findings may be evidence of the emergence of a new ontological category, neither artifact nor living being."


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