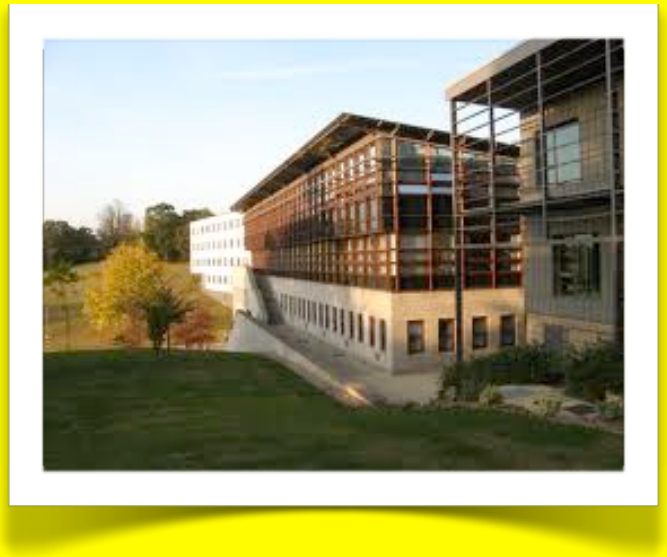
Psychology

Newsletter

Welcome to our October 2013 issue!



It's this time of year again! The new term has started and both the department and the campus are once more filled with students. It's always lovely to see the campus come to life after a quiet and sunny summer.

The newsletter is back and we are looking forward to another academic year filled with interesting stories and news to share! If you would like to become part of the team, please get in touch with Dr Silke Paulmann. The same goes to those of you who do not want to commit to becoming a regular team member but would like to contribute only occasionally. We are always looking forward to receiving your news, comments, pictures, ideas, and more. Also, please let us know what you would like to read about. We love to hear from you.

Have a successful and exciting term everyone!

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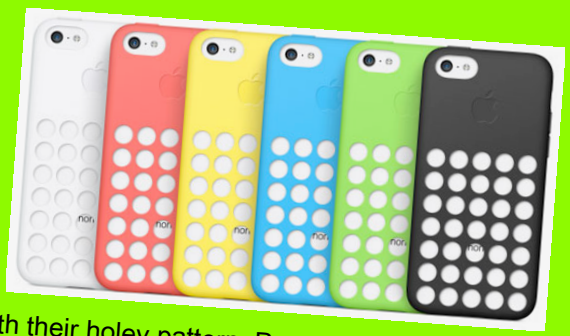
Ever wondered why you had this urge to run away from the new iPhone?

By Arnold Wilkins

One day a colleague of mine told me of a phobia he has. He is afraid of holes. A single hole is not a problem, but a cluster of holes is. He gets the creeps from a cheese grater or a honeycomb or a crumpet or indeed from pictures of these objects. We decided to investigate this phenomenon – it's called trypophobia. It turns out that trypophobia is quite common and occurs in about 5% of the population. Clusters of holes or pictures of holes gross people out. When we analysed the pictures mathematically we found that their properties differed from that of most other images, particularly images from nature. The trypophobic pictures had characteristics that made them very easy to pick out and intrinsically uncomfortable to look at in exactly the same way as some modern art can be very uncomfortable. We had previously found that some modern art is uncomfortable to look at because of the particular mathematical properties of the images. So then we turned to pictures of other phobic objects – pictures of snakes and pictures of spiders, which are associated with some of the most common phobias. These images also had characteristics that made them both easy to pick out and also intrinsically uncomfortable to look at. We got the same result with pictures of skin disorders, which are images that make most of us feel queezy. It was when we tried pictures of highly poisonous animals, and found the same thing again that we realised what might be going on. Humans have obviously evolved to avoid poisonous animals and skin diseases. So we think humans may have developed a visual mechanism that picks out objects that pose a threat very quickly, so quickly that we know something is a threat before we even know what it is. Perhaps it is this overactive early warning system that is responsible for the phobia.



The iPhone 5c cases with their holey pattern. People suffering from trypophobia can not stand to look at them. Prof Arnold Wilkins and Dr Geoff Cole from the Dept of Psychology have found out why.

One of psychology's few mysteries

By Shelby M. Aldous

Déjà vu – yes, we've all experienced it at some point. But have you ever given much thought into what it is and why it happens? Perhaps you have, and are left puzzled about its strangeness.

Psychologists are quite open to most of the possible theories surrounding the cause of déjà vu, including neuroscience and philosophical ideas. But which approach really gains the upper hand, if there is an upper hand at all?

Déjà vu is a French word meaning "already seen", and it quite literally is an experience whereby some or all of the elements within a scene appear to have already happened before. For example, having a conversation with a friend about a particular topic, and it feels so familiar that you can already predict what your friend says next. On top of that, the room and layout is the same, and you are standing (or sitting) positioned in the same way as the previous occurrence.

In many topics within psychology, the biological role outweighs other fabrication theories. This may not be the case in the topic of déjà vu, however, as some more interesting ideas do crop up! Nevertheless, although the understanding of what causes déjà vu is limited in biological terms, many agree that a minor seizure to the temporal lobe in the brain, is a link. A little scary? So it may sound, but déjà vu truly is harmless. Those who suffer from epilepsy are thought to have the incidents of déjà vu more often, for this reason. Age is also thought to be linked in some way, as déjà vu is most common between the ages of 15-25 years old.

Claire Flaherty-Craig, a clinical neuropsychologist, had the theory of déjà vu being a 'visual disconnect'. "It was thought that one hemisphere of the brain would process the visual information first and so the delayed information reaching the other hemisphere was processed like a memory," she said. Sounds like a theory you could trust, right? Well actually, after recent studies using blind participants to challenge this idea, one participant did report déjà vu including hearing, touch and smell, which goes against the idea of déjà vu corresponding with vision.

With the main question in mind again, how is it possible that these strange experiences, whereby everything within a setting (visual, auditory, smell and touch) has already happened before in exactly the same way? If neuroscience can't fully explain it, what else could?

Some, but not all, religious people and 'deep thinkers' believe that déjà vu is a memory from a past life. In more depth, it could be seen as a chance to experience a memory again, but to live it differently (after realising you are experiencing déjà vu). For instance, you may have regrets about something, with which you wish you could do the memory again but make things different so you don't end up feeling regretful. That is, if déjà vu really is the repeating of a memory or experience. If it is true, then I'm sure all of us can think of a time we would like to go back and 'relive'!

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However, how likely is this theory to be realistic? The problem is the idea is unfalisifiable, meaning it can't really be tested, thus leaving us with no evidence. But then again, consider how well known the psychodynamic approach is, and yet it cannot be tested. Actually, good old Sigmund Freud did devise an explanation as to what causes déjà vu, and of course it was related to repressed desires. No surprises there then. Furthermore, Carl Jung suggested déjà vu arose from "tapping the collective unconscious", (another theory that cannot be tested). The fact that each of these theories are very weak, is an interesting matter, as almost all human behaviour can successfully be explained by psychologists, or tested in some way to provide evidence. Déjà vu is not a broad topic, but it is a topic nonetheless, and although psychologists have attempted research into the topic, it is still mostly a mystery. Perhaps déjà vu is one of life's mysteries, making it all the more unusual.

60 seconds with...
Dr Silke Paulmann

What was your best subject in school?

I was always good at languages.

What do you think the greatest invention has been?

For me, personally, the Internet (or should I say google is my friend?).

If you won the lottery what would you buy first?

A swimming pool, or even better, a house by a lake.

What is your favourite TV show?

Friends

What three things would you take to a desert island with you?

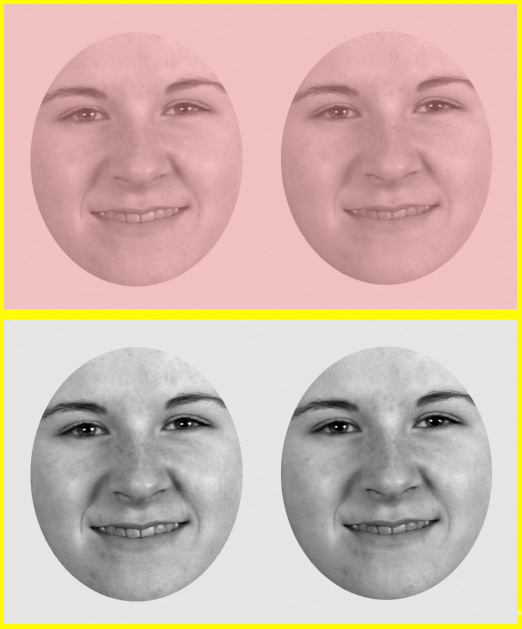
Given that you asked about "things" not "people", I'd have to say: a tent with a built-in comfy mattress so I can sleep well, a solar-powered Kindle so I can read and take notes, and, of course, a speedboat to get off the island again.

Coloured tints help discriminating intensities of facial expressions in children with autism spectrum disorder

New research by PhD student Lydia Whitaker and Psychology Professors Arnold Wilkins and Debi Roberson (in collaboration with Catherine Jones from Cardiff) suggests that individuals with autism spectrum disorders benefit from the addition of coloured tints when discriminating intensities of facial expressions. Based on the observation that many individuals with autism spectrum disorder (ASD) may have difficulty recognising emotion in faces, the authors wanted to find out whether any difficulties recognising facial expressions may be related to atypical sensory processing and/or so-called visual stress.

Visual stress is often reported by sufferers as either blurring or apparent movement of text on the page while reading. To this aim, Lydia and colleagues measured judgments of emotional intensity of facial expressions in 16 children with ASD and 16 healthy controls. Children judged which of two simultaneously presented faces expressed the most intense emotion. The face pairs were presented with or without coloured tints, chosen individually by each child (see picture on the right).

Results showed that in children with ASD, judgments of the emotional intensity of the expression improved with the addition of the coloured tints. There were no corresponding improvements for children without ASD. These findings suggest that differences in processing sensory information may relate to difficulties children with ASD have when recognising facial expressions.



Which face gives the strongest emotion?

Why we need what others have...

By Chelsea Harmsworth

Dr Matthews and Dr Callan (pictured) recently received a

research grant for a project called "Personal Relative Deprivation and Status Consumption". They received £129,479 from The Leverhulme Trust for this 3-year project to investigate consumer spending, with a particular emphasis on the decision to buy "status" goods. These are items which are bought not because of their intrinsic value or usefulness, but because they serve as a signal of our social position and prestige. For this month's newsletter I questioned both Dr Matthews and Dr Callan about their grant and research:

What will the project investigate?:
The project will examine the role of *personal relative deprivation* on this kind of consumer behaviour. Personal relative deprivation refers to the feelings of injustice that arise when a person feels that he or she has less than other people who are "like them", and has been shown to influence a variety of important social and economic behaviours, including the decision to gamble.

How will you investigate this topic?
Our research will have three strands. First, we will examine the "social cognition" of relative deprivation by asking how, exactly, people compare themselves to others – how do they select a comparison group and how does their precise position in that group shape their feeling of deprivation? Second, we will examine the effects of relative deprivation on the perceptual and cognitive processes that underlie consumer behaviour (e.g., the ways that people attend to, evaluate, and remember arrays of consumer products). Finally, we will examine the effects of relative deprivation on actual consumer behaviour, using a variety of field studies and ecologically-valid tasks, such as tracking the spending of shoppers in Colchester town centre.

What do you hope/expect the outcomes to be of the research?
'We hope that our research will clarify an important determinant of spending behaviour, and inform the development of strategies to alleviate the problems that can arise when consumer spending becomes problematic – for example, when people borrow excessively in order to purchase high-status goods.'

Lydia Whitaker is awarded *Colour Group Travel Award 2013*

For her work on coloured tints and children with ASD (see article on page 5), Department of Psychology PhD student Lydia (second from the right) received the *Colour Group Travel Award 2013.* She presented a poster at the 36th European Conference on Visual Perception Conference which was held in Bremen, Germany, in August this year. Congratulations!

Geoff Ward is awarded prestigious research grant

Prof Geoff Ward is part of an international consortium that has been awarded a grant of 1,999,814 Euros from the European Commission.

The funded research project will explore how we can use technology to help improve our memories. It builds on improved technology now widely available in smart phones (GPS location, cameras, wifi access), SatNavs, electronic diaries, specialised cameras, social media, and life-style apps (e.g., fitness apps, calories tracking, life logging) to record autobiographical memories for later review, and to second-guess which information might be most relevant to present to users to help augment their memory (reminders of what they want to do, where they want to go, information about their environment or who they are likely to meet, etc). It will also look at the effects of reviewing subsets of memories on the retrieval of events that were not reviewed.

The project is called "RECALL - Enhanced Human Memory", and will run for three years in collaboration with the University of Lancaster, University of Stuttgart, Germany, and the Università della Svizzera italiana, Lugano, Switzerland. Congratulations!