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Malaysian Mensa Kelong gathering p5

**The IBD (International Board of Directors) will meet
in Perth, Australia next month. Details on p4**

MENSA INTERNATIONAL

**TO READ OUR WELCOME LETTER OR ACCESS LINKS TO USEFUL
INFORMATION & SERVICES FOR NEW
MEMBERS, PLEASE GO TO**

https://bit.ly/MI_welcome

from the editor..



Hi All,

*- news of the 2024 Mensa International Scholarships is on p2
- on p3, our new Director of Administration tells us of the new Mensa Hub and the value of volunteering - in any capacity - within Mensa
- the 2024 IBD meeting is on next month and will be held in Perth, Australia. Details are on p4
- a report of the Malaysian Mensa Kelong gathering is on p5, while on p6, Features Editor Taryn Dryshout looks into whether higher intelligence lowers the risk of having a stroke
- our Member Profile is on p7
- the latest research into how the brain processes emotional situations is on p8, and on p9, we learn that sleep is essential for memory retention
- Supplementally is on p10
- the Officer Directory is on p11
- and Therese's Teasers are on p12.*

Happy reading!

Kate

2024 Mensa International Scholarships

The Mensa Education and Research Foundation (Mensa Foundation) has announced the winners of the 2024 Mensa International and Ed Vincent Scholarships. Applicants submit an essay of up to 550 words explaining their career, academic or vocational goals and how they plan to achieve those goals.

The Mensa International Scholarship is open to international (non-American) Mensans studying at non-American universities or colleges. The 2024 winners are:

- USD \$2,000 – Theresia Veronika Rampisela of Mensa Indonesia
- USD \$1,000 – Oscar Lapidus of Mensa Sweden
- USD \$1,000 – Sofia Schoenbauer of Mensa Austria
- USD \$1,000 – Kevin Boon Chun Kee of British Mensa

The Ed Vincent International Scholarship is open to international (non-American) Mensans studying at American universities or colleges. The 2024 winner is:

- USD \$1,000 – Linn Zapffe of Mensa Norway

A dedicated panel of international Mensan judges scores the essays and they deserve to be recognised and applauded for their efforts. The 2024 judges were: Andreas Athanasakis (Mensa Greece), Aleksandra Borovic (Mensa Serbia), Willem Bouwens (Mensa Netherlands), Zabeda Abdul Hamid (Mensa Malaysia), Delma Murray (Mensa Canada), Cinthia Reyes (Mensa Mexico) and Elissa Rudolph (American Mensa).

The 2025 scholarship program opens on September 15, 2024, and entries will be accepted up to January 15, 2025. All international (non-American) Mensans who are studying at universities and colleges are welcome to apply. Please see Mensa international scholarship (mensafoundation.org) for further details.

Important – Only current Mensa members are eligible to apply. Lapsed members will be disqualified. Make sure your membership stays current.

Vicki Herd

Chair - Mensa International Scholarships

**Log in to www.mensa.org to read or download the MWJ
in full colour**

from your ExComm

*from your Director of Administration,
Robin Crawford*

Thank you for the opportunity to serve as your new Director of Administration. Even before the new ExComm took office this past July, we were all working hard - studying governing documents, meeting and learning from our predecessors, setting priorities, making lists, preparing for our first face-to-face meeting in Bucharest, Romania, and working on putting together the agenda for the IBD meeting in Perth, Australia, next month.

There's so much to do!

The most exciting project has been the creation of the new **MENSA HUB**, a one-stop hub for all things Mensa: discussions, ISIGs, national Mensas, IBD, governing documents, committees and teamwork, and so much more.

If you're already signed up on the old Workplace, you should have received an invite to its successor: Mensa Hub. As we go forward in a staggered series of phases, we'll open the Hub to more members, a process made easier due to the new and long-awaited international member database, which will enable quick access to the Mensa Hub, easier sign-up for gatherings abroad, and other member benefits.

Why yet another online platform?

In May, it was announced that Workplace, Mensa International's flagship online community, was being discontinued by its provider, Meta (yes, the same company that owns Facebook). In less than a month and a half, Past Chair Björn Liljeqvist led a volunteer team (comprising Eivind Olsen, Lorenzo Dami, Cinthia Reyes, Anni Saloranta, Lyn Taylor, Terry Lee, and myself) to set up an entirely new online platform from scratch.

We duplicated the active and necessary groups from the old Workplace community, created graphics, and drafted policies and FAQs. We even had a fun bunch of volunteer test subjects who let us practise various moderation and settings tools on them as they discussed cupcakes and argued about the cultural differences between Mensa Antarctica and Mensa Atlantis.

Calling all Volunteers

Speaking of volunteers, the official 2024 call for applications went out in July. To see which MI appointee and committee positions are available, to access the application form,



and to find out more, please take a look at our Volunteer Roles page on the international website,

www.mensa.org

Not quite ready to jump in at the international level? That's absolutely fine. Your national Mensa and local chapter need help, too.

You're already volunteering

We so often read things like, "Volunteers are the lifeblood of Mensa," and "We have volunteer openings for this officer and that coordinator." Sure, that's all true, but volunteering takes many forms. Chances are that each and every one of you is already helping make Mensa better. Really.

When you send an email to share a concern or suggest an idea for improvement, you may be pointing out something important that others have missed or helping to identify an innovative solution.

Continued on p4

(Continued from page 3)

Brainstorming is part of the process for improvement; **you're volunteering.**

When you participate in an online conversation, you're helping move the discussion forward, adding to the overall vivacity of the online community: **you're volunteering.**

When you smile or share a joke with someone at an event, you're making others feel welcome and wanted and making it more likely that they'll be there at the next event: **you're volunteering.**

Imagine Mensa without new ideas, without posts in online groups, without playing games or smiling at each other. If you're engaged in Mensa, even in a seemingly small way, **you're volunteering your time and effort for the greater good.** It's the collective combination of all those acts of goodwill that makes Mensa such an amazing organisation to be a part of.

Your contributions make Mensa better for everyone. Thank you!

Robin Crawford
Director of Administration
admin-mil@mensa.org

articles - poetry -
member achievements

Send your submissions
to the Editor at
mwjeditor@mensa.org

Deadline for each issue is the
1st of the month two months
before publication.

IBD Meeting 2024 Perth, Australia October 10 - 13

The International Board of Directors (IBD) meets once a year (except during Covid) at a different city and country. Perth, Australia, will be the host city for 2024.

Information, registration and event bookings are available online at <https://ibd24.org>

The delegates, who are the International Executive Committee (ExComm), the National representatives of Full National Mensas (usually the Chair/President) and some invited guests (eg International Officers, Chairs of International Committees or leaders of small up and coming Mensa chapters) have a meeting that runs all day Friday and Saturday and Sunday morning. Formal social events include an Ice-breaker on Thursday, a Gala Dinner on Saturday and a tour on Sunday afternoon. It has become customary to have a self-funded windup party on Sunday and a post-meeting tour, with pre-meeting tours becoming common.

In recent years, both before and after Covid, many other members have been attending these events. While occasionally they look in on the meeting, they are mostly there to meet up with Mensa friends and have a good time.

Perth was chosen as the 2024 host at the IBD meeting in 2022, after the geographic area was



changed from Europe to Asia-Pacific at the 2021 meeting.

The main venue for the IBD is the 5-star Pan-Pacific in Adelaide Terrace in the CBD, which will accommodate the delegates and host the actual meeting and the ice-breaker. The 4-star Novotel Langley is literally across the road, and will be somewhat cheaper for other guests. There are also other cheaper hotels nearby and even backpacker hostels further down the terrace.

Public transport within the city area is free and even the train from the airport is only around \$5AUD.

The Gala Dinner will be held at the Novotel, with a 3-course meal and drinks and a DJ till midnight.

The Sunday tour will be to a wildlife park.

The post-meeting tour will be in two parts – a one-day tour to Rottnest Island on Monday, followed by a three-day tour of the Southwest from Tuesday to Thursday. This will allow those interested to have time to get to Sydney for the Australian Mensa Conference on Friday, October 18.

For the non-delegates, we will be organising various activities and tours, both before and during the meeting.

Please join our Facebook WhatsApp or Workplace groups. Links on the website: <https://ibd24.org>

Kymerley Wilson, organiser

Kelong Trip

by Victor Tan

The lyrics of BEYOND's "Boundless Oceans" resounded over the karaoke system, filling every inch of the space and, I imagine, our collective consciousness. Suddenly...

SPLASH.

There went the first cast, then the second, as the sound of rope-twirl signalled fishing rod lines flying from the shores into the waters.

Opening my eyes, I saw it: the boundless ocean, the vast sky, and the shimmering waters hinting at infinity beyond the edge of the horizon. I stood on a wooden platform at the ocean's edge, taking it all in.

Six nations had gathered here: Malaysia, Singapore, Hong Kong, India, Indonesia, and Japan. Nationality mattered less than usual in this place, where strangers transformed into friends, fish were caught for the first time, and joy and discovery characterised each moment.

This was the Malaysian Mensa Kelong gathering.

A *CLACK* of billiards scattered my thoughts, bringing the N-body problem to life with each satisfying click of the balls, followed by uproarious screams.

On other tables, cards and mahjong tiles flipped with the "FWIP FWIP FWIP!" of each game piece. A game of Hogwarts chess proceeded at 15 million calculations per second. In Kahoot quizzes, friendly

adversaries engaged in battles of wits and exuberant conversation about the history of Mensa and properties of square numbers, with sly, high-IQ smirks on their faces.

But what really cemented it for me? Oddly enough, it was... *Metal Slug*.

I couldn't believe my eyes at first, but there it was: my childhood brought to life. Children collaborated with their parents to squish aliens and pixelated bad guys in button-mashing frenzies, uniting generations through common experiences and collective memory.

In that moment, as images, memories, and music combined, I stood transfixed by *déjà vu*, knowing this was a magical moment.

Our group picture was taken in the rain, capturing expressions that were uproarious and magical. The picture alone doesn't do justice to the memory of how we gathered, played, laughed, cried, learned, and sang our souls out. It was a young, wild, and free symphony that transcended nations and boundaries. This incredible collection of experiences is one of my fondest memories of the Mensa family.

Thank you, Mensa Johor committee, for creating this world-class experience!

As I close, I hope many of you read this piece as a remembrance.



It was my honour to chronicle it for you! Remember, Mensa is best celebrated together. If this inspired you to join us, come hang out with us soon. I look forward to meeting you!

Yours,
Victor.

PS: It's a real invitation!

Kelong was a prelude to the celebration of the 40th anniversary of Malaysian Mensa and the 35th anniversary of Mensa Singapore, from October 5th to 6th, 2024, at Tunamaya Resorts in Desaru, midway between Kuala Lumpur and Singapore.

We're looking forward to seeing each other again and would love to invite you, wherever you are from, to join us. To register, please do so here!

<https://mensa.my/desaru-anniversary>

Looking forward to meeting you, thank you for reading, and catch you soon!

Higher Intelligence Associated With Lower Risk Of Stroke

New research recently published in the *Journal of Epidemiology & Community Health* claims that young people who have lower levels of intelligence are more likely to have a stroke than others.

The study focuses on adolescents, and their risk of stroke before the age of 50. Those who had poorer mental abilities were found to be three times more likely to have a stroke, than those with an average or higher IQ. The research picks up on previous studies which also attempted to prove that there is a clear correlation between mental ability in young people and chances of suffering a stroke.

I find this particularly interesting, as a Mensa member who had a stroke at the age of 30. Clearly I was not an adolescent, but it does make me question how intelligence played into my odds.

There is plenty of increasing evidence now that strokes and TIAs among people under the age of 50 are becoming more common. Roughly half of all stroke survivors go on to live with long-term impairments, both physical and psychological, so prevention is crucial.

We also know from an abundance of research on the topic that lower mental ability in young people has been linked to higher risks for cardiovascular diseases, as well as metabolic disorders. It may come as no surprise then, that we can now add risk of stroke to this list.

This most recent study, led by the Gertner Institute for Epidemiology and Health Policy Research in Ramat Gan, Israel, involved carefully examining data from 1.7 million young people spanning over 25 years. The data came from military intake exams that 16-20 year olds had completed, as is required by Israeli citizens before entering military service. The test checks for suitability across multiple areas including physical health (weight, blood pressure, and diabetes), educational achievements, socio-economic background, and mental ability.

The mental aptitude portion of the test was the focus for the research, as it showed how the young people scored on following instructions, abstraction, categorisation, mathematics, concentration, conception, reasoning, and problem-solving.

The results showed that out of the 1.7 million test-takers, 12% demonstrated a high level of mental ability, 70% a medium level, and 18% depicted a low level. This information was then matched with the Israeli national stroke database which produced some interesting connections. Those who were deemed to be the least intelligent - having scored lower in the mental aptitude portion - were almost three times more likely to have a stroke before the age



of 50, than those who scored in the medium or high ranges of the test. These results were still regarded as accurate even after a range of factors were taken into account.

It is unclear at this stage why there is a correlation between intelligence and chance of stroke, and the research does acknowledge that lifestyle factors that are known to increase the risk of stroke need to be taken into consideration. One important question this issue does raise, is whether wider, and more comprehensive assessments for stroke risk need to take place that are not just focused on lifestyle factors. If lower mental ability increases the risk, there may be other fixed factors that need to be highlighted earlier in life in order to create an accurate risk profile.

Taryn Dryfhout

**Log in to the
www.mensa.org
for the calendar of
national events**

member profile

by Susan Jensen

Brazilian Mensan José Augusto Mercês dos Santos blends a studious, ambitious personality with a free-flowing attitude toward life, allowing him to “follow the breadcrumbs” and walk through every open door life presents.

José, 50 years old, grew up in Rio de Janeiro and Salvador, Brazil, with his parents (both public servants) and two older brothers.

From a young age, José pursued knowledge. In 1993 he entered the highly competitive Army Cadets Preparatory School and later the Agulhas Negras Military Academy with the goal of becoming a career military officer. He served as an instructor for fellow paratroopers for ten years and was a member of the Army basketball team. During his time in active service, he served for two years in the amazing Amazon jungle.

His insatiable curiosity has led to many degrees: Military Science (1997), Postgraduate studies in Superior Education (2006), BA in Physical Education (2007), Post-



graduate studies in Geopolitics (2011), and degrees in Philosophy and History (2024).

José was moved by watching Israeli humanitarian efforts in 2019 in his home country of Brazil, after the rupture of a major dam. He volunteered to serve with a mission to Haiti after their 2010 earthquake and again was impressed by the rapid response of the world humanitarian teams and the advanced technology they brought with them.

José felt moved to spend time in Israel because of his fascination with the long history of the Jewish people and with Israeli innovations

in technology and agriculture. At the beginning of 2024, after the current war broke out, José moved to Jerusalem, accepting a post helping adults with various intellectual disabilities.

José lives and works at a residential facility where the disabled adults reside, grouped according to their level of independent function. The clients, also known as “friends” are stimulated and cared for from the time they awaken until they go to bed.

Like most Mensans, José is able to see patterns easily, which ironically helps in his work with the intellectually challenged. He is able to pick up quickly on where their deficiencies lie. Though he doesn’t speak Hebrew and his clients mostly don’t speak English, Spanish or Portuguese, José has found a way to communicate with them.

One client, for example, who doesn’t speak and doesn’t like to be touched, came over to sit by José after a month of José patiently working with him.

José loves working with his friends and living in Jerusalem, a place steeped in history with an unparalleled cultural diversity and unique ambiance. Should any Mensan be visiting Jerusalem, he would welcome hearing from you at: jose.santos@mensa.org.br

How the Brain Processes Emotional Situations

The ability to recognise and respond to emotionally-charged situations is essential to a species' evolutionary success.

A new study published today in *Nature Communications* advances our understanding of how the brain responds to emotionally charged objects and scenes.

The research, led by Trinity College Dublin neuroscientist Prof. Sonia Bishop and Google researcher Samy Abdel-Ghaffar while he was a PhD student in Prof. Bishop's lab at UC Berkeley, has identified how the brain represents different categories of emotional stimuli in a way that allows for more than a simple 'approach avoid' dichotomy when guiding behavioural responses.

The research was funded by the National Institutes of Health, USA.

Sonia Bishop, now Chair of Psychology, in Trinity's School of Psychology and senior author of the paper explains: "It is hugely important for all species to be able to recognise and respond appropriately to emotionally salient stimuli, whether that means not eating rotten food, running from a bear, approaching an attractive person in a bar or comforting a tearful child.

"How the brain enables us to respond in a nuanced way to emotionally-charged situations and stimuli has long been of interest. But, little is known about how the brain stores schemas or neural representations to support the nuanced behavioural choices we make

in response to emotional natural stimuli.

"Neuroscience studies of motivated behaviour often focus on simple approach or avoidance behaviours – such as lever pressing for food or changing locations to avoid a shock. However, when faced with natural emotional stimuli, humans don't simply choose between 'approach' or 'avoid'. Rather they select from a complex range of suitable responses.

"So, for example, our 'avoid' response to a large bear (leave the area ASAP) is different to our 'avoid' response to a weak, diseased, animal (don't get too close). Similarly our 'approach' response to the positive stimuli of a potential mate differs to our 'approach' reaction to a cute baby.

"Our research reveals that the occipital temporal cortex is tuned not only to different categories of stimuli but it also breaks down these categories based on their emotional characteristics in a way that is well suited to guide selection between alternate behaviours."

The research team from Trinity College Dublin, University of California Berkeley, University of Texas at Austin, Google and University of Nevada Reno, analysed the brain activity of a small group of volunteers when viewing over 1,500 images depicting natural emotional scenes such as a couple hugging, an injured person in a hospital bed, a luxurious home, and an aggressive dog. Participants were asked to categorise the images as positive, nega-

tive or neutral and to also rate the emotional intensity of the images. A second group of participants picked the behavioural responses that best matched each scene.

Using cutting-edge modelling of brain activity divided into tiny cubes (of under 3mm³) the study discovered that the occipital temporal cortex (OTC), a region at the back of the brain, is tuned to represent both the type of stimulus (single human, couple, crowd, reptile, mammal, food, object, building, landscape etc.) and the emotional characteristics of the stimulus – whether it's negative, positive or neutral and also whether it's high or low in emotional intensity.

Machine learning showed that these stable tuning patterns were more efficient in predicting the behaviours matched to the images by the second group of participants than could be achieved by applying machine learning directly to image features — suggesting that the OTC efficiently extracts and represents the information needed to guide behaviour.

Samy Abdel-Ghaffar, Google, commented: "For this project we used Voxel-Wise Modelling, which combines machine learning methods, large datasets and encoding models, to give us a much more fine-grained understanding of what each part of the OTC represents than traditional neuroimaging methods.

"This approach let us explore the intertwined representation of cat-

Continued on page 11

Sleep or Cram? Sleep is Key for Memory Retention

Imagine you're a student, it's finals week, and you're preparing for a big exam: do you pull an all-nighter or do you get some rest?

As many a groggy-eyed person who's stared blankly at a test knows, a lack of sleep can make it extraordinarily difficult to retain information.

Two new studies from University of Michigan uncover why this is and what is happening inside the brain during sleep and sleep deprivation to help or harm the formation of memories.

Specific neurons can be tuned to specific stimuli. For example, rats in a maze will have neurons that light up once the animal reaches specific spots in the maze. These neurons, called place neurons, are also active in people and help people navigate their environment.

But what happens during sleep? "If that neuron is responding during sleep, what can you infer from that?" said Kamran Diba, Ph.D., associate professor of Anesthesiology at U-M Medical School.

A study, summarised in the journal *Nature* and led by Diba and former graduate student Kourosh Maboudi, Ph.D., looks at neurons in the hippocampus — a seahorse-shaped structure deep in the brain involved in memory formation — and discovered a way to visualise the tuning of neuronal patterns associated with a location while an animal was asleep.

A type of electrical activity called sharp-wave ripples emanate from the hippocampus every couple of

seconds, over a period of many hours, during restful states and sleep.

Researchers have been intrigued by how synchronous the ripples are and how far they travel, seemingly to spread information from one part of the brain to another.

These firings are thought to allow neurons to form and update memories, including of place.

For the study, the team measured a rat's brain activity during sleep, after the rat completed a new maze. Using a type of statistical inference called Bayesian learning, they were for the first time able to track which neurons would respond to which places in the maze.

"Let's say a neuron prefers a certain corner of the maze. We might see that neuron activate with others that show a similar preference during sleep. But sometimes neurons associated with other areas might co-activate with that cell.

"We then saw that when we put it back on the maze, the location preferences of neurons changed depending on which cells they fired with during sleep," said Diba.

The method allows them to visualise the plasticity or representational drift of the neurons in real time. It also gives more support to the long-standing theory that reactivation of neurons during sleep is part of why sleep is important for memories. Given sleep's importance, Diba's team wanted to look at what happens in the brain in the context of sleep deprivation.

In the second study, also published in *Nature*, the team, led by

Diba and former graduate student Bapun Giri, Ph.D., compared the amount of neuron reactivation - wherein the place neurons that fired during maze exploration spontaneously fire again at rest - and the sequence of their reactivation (quantified as replay), during sleep vs. during sleep loss.

They discovered that the firing patterns of neurons involved in reactivating and replaying the maze experience were higher in sleep compared to during sleep deprivation.

Sleep deprivation corresponded with a similar or higher rate of sharp-wave ripples, but lower amplitude waves and lower power ripples.

"In almost half the cases, however, reactivation of the maze experience during sharp-wave ripples was completely suppressed during sleep deprivation," said Diba.

When sleep-deprived rats were able to catch up on sleep, he added, while the reactivation rebounded slightly, it never matched that of rats who slept normally. Furthermore, replay was similarly impaired but was not recovered when lost sleep was regained.

Since reactivation and replay are important for memory, the findings demonstrate the detrimental effects of sleep deprivation on memory.

Diba's team hopes to continue looking at the nature of memory processing during sleep and why they need to be reactivated and the effects of sleep pressure on memory.

neurosciencenews.com June 13, 2024

supplementally...

by John Blinke

Roaches

ScienceDaily, May 24, 2024. "Entomologist Sheds Light On 250-Year-Old Mystery Of The German Cockroach."

The German cockroach seems to be everywhere. But where is its home in the wild? According to scientists at Virginia Tech, the insect has been an uninvited guest of humans for such a long time that it only exists in our dwellings with no wild home at all. Before moving in with us, related species had lived in Southeast Asia. The creepy creature is a major health hazard everywhere, spreading asthma, allergies, and food contamination.



(with @scottmanley and @MarcusHouse)"

The SpaceX Starship enjoyed a spectacular test flight. Live cameras on drones and ocean buoys and on the rocket caught the action from every angle. It was one heck of a show for TV viewers. The Super-heavy Combo landed softly in the Indian Ocean, as planned, even though it lost an engine and one of its control fins melted. SpaceX might have to rethink the hinge design on its stabilisers.

Dinky

ScienceDaily, May 29, 2024. "Moon Orbiting 'Dinky' Asteroid Is Actually Two Tiny Moons Stuck Together." (Nature)

How do planets grow? It seems simple. Rocks in space presumably collide and stick together. But, the reality is that pieces scatter everywhere when rocks hit each other in space. This would seem to make it

impossible for small objects to aggregate into planets and asteroids. The Lucy asteroid mission is on its way to Jupiter's Trojan asteroids to learn about this process. Along the way, it observed the small asteroid, Dinkinesh, and found that it has a binary moon that is now named Selam. Dinkinesh is about 790 metres wide while the two lobes of its companion are each about 220 metres wide. The observation shows that Lucy can autonomously track targets as

it flashes by them at thousands of kilometres per hour.

Carbon Sponge

ScienceDaily, June 5, 2024. "Electrified Charcoal 'Sponge' Can Soak Up CO2 Directly From The Air." (Nature)

The best way to reduce carbon dioxide in the air is to stop producing it. But more help is needed to control climate warming. To that end, researchers at Cambridge have found they can use "activated charcoal sponges" to remove CO2. They soak an activated charcoal sponge with hydroxide ions and use it to absorb the gas from the air. Then, they run electricity through the sponge to drive CO2 out so can be stored somewhere. This patented lab bench process uses much less heat than other carbon removal schemes and the materials are inexpensive.

(Photo by Erik Karits on unsplash.com)

Betelgeuse

ScienceDaily, June 16, 2021. "Mystery solved: Dust cloud led to Betelgeuse's 'Great Dimming.'" (Nature) The red supergiant star, Betelgeuse, has a habit of going dim for a while, and then returning to its normal brightness. Astronomers using the European Southern Observatory's Very Large Telescope have an explanation for this. Gigantic gas bubbles rise in the star's atmosphere and then spew massive dust clouds when they burst. The dust temporarily hides some of the star's light. This cannot be observed directly in most stars, but Betelgeuse is huge and fairly nearby.

Starship Test

From Universe Today on Youtube: "IFT-4 and the Future of Starship: All You Need to Know

(Continued from p8)

egorical and emotional scene features, and opened the door to novel understanding of how OTC representations predict behaviour.”

Prof. Bishop added: “These findings expand our knowledge of how the human brain represents emotional natural stimuli. In addition, the paradigm used does not involve a complex task making this approach suitable in the future, for example, to further understanding of how individuals with a range of neurological and psychiatric conditions differ in processing emotional natural stimuli.”

The team used a novel large dataset of 1,620 emotional natural images and conducted functional magnetic

resonance imaging with adult human volunteers, acquiring over 3,800 3D pictures of brain activity while participants viewed these images. Participants judged these images on valence (positive, negative or neutral) and arousal (or emotional intensity).

Modelling this data using small 2.4×2.4×3mm chunks or ‘voxels’ of brain activity, the researchers found that regions of occipital temporal cortex, in the back of the brain, showed differential representation of both stimulus semantic category and affective value. For example, positive high arousal faces were represented in slightly different regions to negative high arousal faces and neutral low arousal faces. Furthermore,

when a completely new set of participants were asked to select behaviours that went with each image, the top dimensions of this neural coding representational ‘space’ better predicted the behaviours selected than the top dimensions based directly on image features (for example is the stimulus animate? positive?).

This suggests that the brain chooses which information is important or not important to represent and hold stable representations of sub-categories of animate and inanimate stimuli that integrate affective information and are optimally organised to support the selection of behaviours to different types of emotional natural stimuli.

(*neurosciencenews.com July 10, 2024*)

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Therese's BRAIN TEASERS

Cryptosum

Each symbol represents a different digit from 1 to 9. The sum of the digits in each row and column is shown. Find the sum of the numbers along the diagonal line from the top left-hand corner.

				22
				21
				16
				24
10	24	19	30	?

Odd Ones Out



1 2 3 4 5



1 2 3 4 5

Number Patterns

- a) 20, 21, 16, 18, 13, 16, 11, 15, 10, ?
b) 1, 3, 8, 19, 42, 89, ?

Rebus

What the auditor found:

A A U T U M

Cryptic Wordsquare

Each of the five clues has a solution of five letters. Place your five solutions into a 5 x 5 grid to form a wordsquare, such that 1 Across = 1 Down, 2A = 2D etc.

- Southern chop round right scold!
- Carnivore = headless rotter.
- Fasten tailend. 'H' loses one.
- Not true. Not a gain for fine silk.
- Vision seen around, fourth black in.

Elemental Riddle

Put inside Platinum, a drug you will find;
Put inside Mercury, a pig comes to mind.
What am I?

Anagram

Rearrange the letters of a word meaning
HAVING A NOTCHED EDGE to form a
word meaning RENOVATED TYRES

Answers

Cryptosum: 23 (3+9+2+9) **Odd Ones Out:** 4, 3
Number patterns: a) 15 (10+5); b) 184 (double last term and add 6) **Rebus:** A shortfall; All in all **Cryptic Wordsquare:** Floss, Latch, Otter, Scene, Shrew
Elemental Riddle: Oxygen (making POt and HOg)
Anagram: Serrated, Retreads

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