



## What Is Spatial Mapping?

*Oxford Scholastica Academy*

### How does spatial navigation work?

When you're using a maps app on your phone, the GPS capacity activates and gathers a lot of information to work out where you are, and how best to get to your destination. This is exactly what our brains do in the background when we're in familiar environments. They gather internal and external information to work out where we are, and where we need to go.

Internal information includes something called proprioception. This is a fancy word for our sense of balance, head position and body movement. And this is what we use to work out whether we're walking up or down hill, or on flat or bumpy ground.

External information is gathered by all of our senses and creates an image of our surroundings. Things like recognising visual landmarks, hearing busy roads and even smelling the takeaway on the corner can help your brain to work out your current location, as well as the direction you're heading in and when you need to turn.

### How do we encode spatial mapping?

The most striking physical evidence supporting Tolman's cognitive map theory came when neurons (or brain cells) specifically used to encode spatial information were discovered. Professor John O'Keefe and his team at UCL made the discovery by recording single neuronal activities, and found place cells, grid cells, head direction cells and boundary vector cells.

Professor O'Keefe was awarded a Nobel Prize in Physiology or Medicine alongside Professor May-Britt Moser and Professor Edvard Moser in 2014 for the discovery of place cells. These are neurons which



activate when a certain location is entered, and support the theory of a kind of mental map in humans and animals. These seem to be mostly located in the hippocampus. This is the area of the brain most associated with memory.

Grid cells were found by Moser et al., and seem to be responsible for estimating angles and distances between any two locations. Head direction cells are exactly what you would expect from their name; they activate when a person or animal's head is pointing in a certain direction. In doing so, they facilitate self-location.

However, while these basic components of the internal map have been found, there is not yet a definitive theory linking them all together. The field is still rapidly developing. So we have no doubt that a theory will be proven in the coming years.

### Sherlock's 'Mind Palace'

Sherlock Holmes' mind palace is a technique where he mentally stores information in different rooms of an imaginary house for easy recall. Studies on a patient known as HM revealed that the hippocampus plays a crucial role in both spatial navigation and long-term memory, suggesting a real connection between memory and location-based strategies.

# EVENTS CORNER

## Curriculum Advisory Committee (CAC) Meeting



On February 7, 2025, the Curriculum Advisory Committee (CAC) at Kristu Jayanti College met to enhance the academic curriculum. Distinguished academicians provided insights on innovative teaching, research-driven learning, and skill-based training. The discussions aimed to enrich students' learning experiences and foster holistic education. The Department of Psychology expressed gratitude and looks forward to continued collaboration.

## Spiritual Awakening Through Mindfulness



On February 7, 2025, the Department of Psychology hosted an expert lecture on "Spiritual Awakening Through Mindfulness" for MSc Psychology students. Dr. Syeda Arifa Tasneem discussed mindfulness, its Buddhist roots, and modern applications, providing practical exercises. Students actively participated, gaining insights for personal and professional growth.

## Workshop on Psychological Well-Being



On February 11, 2025, the Department of Psychology held a workshop on Psychological Well-Being for IV Semester MSc students in Psychology, Counselling Psychology, and Clinical Psychology. Led by Dr. Soumya Jacob P, the session focused on practical approaches to enhancing mental health and well-being. It included interactive activities, guided imagery exercises, puzzles, and videos, fostering self-awareness and stress management.

## Stimuli 2025



On February 17, 2025, the Department of Psychology at Kristu Jayanti College hosted Stimuli 2025, an intercollegiate fest on mental health wellness. Inaugurated by Prof. Dr. Dwarkanath Srinivas, the event emphasized neuropsychology's role in patient care. Over 140 students from 12 colleges participated in discussions and competitions. The fest concluded with a vote of thanks from the coordinator.



"We need 4 hugs a day for survival. We need 8 hugs a day for maintenance. We need 12 hugs a day for growth."

- Virginia Satir



## Priscilla and The Stag

Jennifer Ann - 23PSYA25

Dark shawls of pinecones and laughter under fireworks of ponies and glitter mariposas and seaweed get locked in a swirling Centrifuge of churning emotion, an Amrit of Kesari and night jalebis in a swirling air of frost and chilled grapes; The wine chastised in velvet cottages dwelling in symphony of souls.

My mother's eyes are lifeless cordial timelapses, each moment a drooping heartbeat stuck in its own timeline, I glance to the glass which lays intact by my hand, as I offer unto her the final air of despondence, the minty green slithers into a vexing blue one that so closely resembled the portrait of the vespa she cherished close, the merlot drunk on sweet ambrosia and bewitching cider, the saffron star of Bethlehem a glass of glory against the pale night sky. Her eyes search my own, combing every vortex, deeming every paradise, and tantalizing every archive to witness my shrouded thoughts; an opera of dearest and sweet-scented lies to every visitor who she captured, a glass case whose translucent shell held within itself the unpossessing truth of a stolen heart.

I glance at the indented eyelashes of her face, each strand carefully curled to reflect vigor and Nazakat, fruition and virtue, love, and tenderness, that she so carefully escapes behind as her farce. Her eyes lay close to anyone else but me, I bear witness to the Frankenstein within, my eyes scan its peripherals as a young daughter does, hoping to bear the affection of their mother, whereas mine is an opera comprised of a ringmaster's forgotten pupil and their dexterity over their hidden ringlets of pride, and the shadowing figure that is a rapture to her audience as she glances at them. She offers a sip to her glass, the air of the cold dusk a brimming garden of ice and lingering pasts. I watch in subtle flows, the tresses she paraded around divulge in their extorted terror, the ghastly smile that clarified my childhood free of their happiness and bloomed in them high regard fracture into a grotesque baroque of augmented authority, with each regard, a fearful regent, broken by her own past, afraid by her own smile and aware of her clandestine marks.

She is aware now, like lacerations that desire the forfeit of their creators, like the sky who taints its makers, like the archers whose intelligence cost their breath, and their rosary whose owners cost them their mabrooks. She lumps to the ground, liquid spills across her fur-lined carpets, liberated now by impossible dreams. The cobalt glass breaks empty, every bubble of literature, the moon's shadow a glaze upon the ivory charade, the blood seeps in accordance.

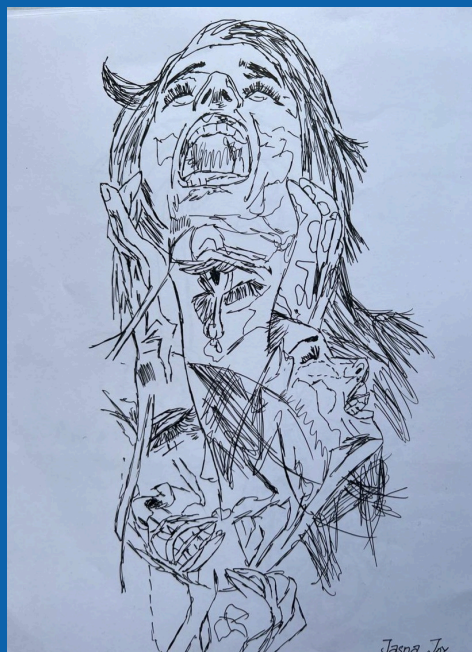
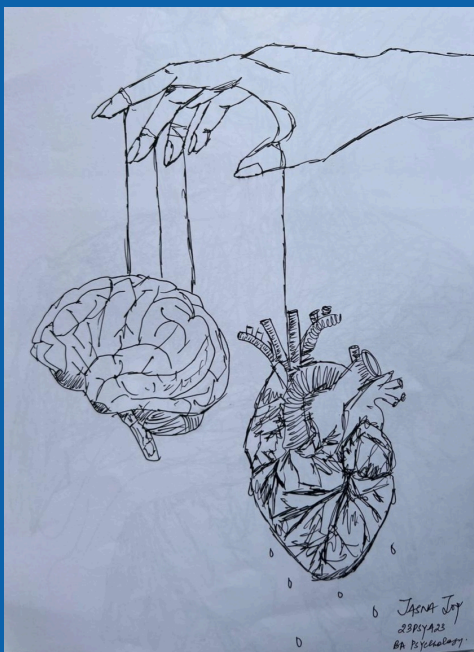
The grotesque shadow is my tamanna and my taj

The embery solace of my heart pulses anew

The dewy anklets of secrets rings out my hymns

The crystal eyes I see seep into shayaris that rivet my name, each cravate and charlatan a play of my own.

## ARTWORKS



Jasna Joy - 23PSYA23

## PHOTOGRAPHS



*Navya Hari - 23PSYB41*



*Angel Jose - 23PSYB06*



*Hitaishi - 23PSYB24*

## PSYCHOLOGY NEWS

- Scientists find key differences in male, female responses to stress: A new study led by researchers at UF Health has uncovered why males and females may experience stress differently.
- Empathy for other peoples' pain peaks in young adulthood: Empathy responses to others in pain peak in young adulthood according to a new study. Psychologists have discovered that young adults are especially sensitive to social pain, such as situations of embarrassment, grief and sadness, and empathize more strongly with others experiencing social pain than adolescents or older adults do.
- Carbohydrate cravings in depression: Depression affects 280 million people worldwide. The mental illness has been proven to lead to changes in eating behavior. Researchers have discovered that although patients with depression generally have less appetite, they prefer carbohydrate-rich foods.
- Researchers identify a brain circuit for creativity: Researchers analyzed data from 857 patients across 36 fMRI brain imaging studies and mapped a common brain circuit for creativity.

Source: [www.sciencedaily.com](http://www.sciencedaily.com)

## MOVIE REVIEW



A Beautiful Mind (2001) is a psychological drama based on the life of John Nash, a brilliant mathematician diagnosed with schizophrenia. The film portrays his struggles with delusions and paranoia while highlighting the impact of mental illness on personal and professional life. Russell Crowe's performance captures Nash's journey from denial to acceptance, offering a compelling insight into schizophrenia and resilience. The movie effectively blends psychology and emotion, making it a must-watch for those interested in mental health and human cognition.

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