

A rising movement has been taking place in the world in recent years. It is a movement that decries all acts of cruelty and unnecessary violence against the animals on the earth. Its members range from those who merely won't eat or wear anything made from animal flesh or skin to those who actively campaign in every way against these practices in any form. World Vegan Month celebrates them and the strides they're making towards eliminating unnecessary cruelty to animals as well as to the earth.

#INTERRELATIONSHIP

Environment impacts young brains

The findings highlight the importance of the urban environment in mental health. There is a critical window during childhood and adolescence where environmental factors can shape future cognitive and behavioural development.



A pioneering new study links satellite and brain imaging data to identify how environmental factors can affect mental health, cognition, and brain development in young people. The study represents an advance in understanding how specific environmental conditions may affect the brains of young people.

"The findings highlight importance of the urban environment in mental health. We see a critical window during childhood and adolescence where environmental factors can shape future cognitive and behavioural development," says the study's senior author and principal investigator, Vince Calhoun, a professor of Psychology at Georgia State University. Calhoun has faculty appointments at Georgia Tech and Emory University, and leads the Center for Translational Research in Neuroimaging and Data Science Center.

The researchers used a dataset from the Adolescent Brain Cognitive Development (ABCD) study, which is the largest ongoing study on child brain development in the US. For the study, the team analyzed data collected from 11,900 children across 21 US cities.

Calhoun says that by linking fMRI imaging with satellite data, including the location of study participants, researchers were able to more robustly identify how the physical environment influences cognition and mental health outcomes in children, aged 9 to 10.

Collaborating closely with the ABCD team, the researchers released their results as part of ABCD Data Release 5.0. This enables the research community to address critical questions regarding the connection between environment and mental health. Lead author

and New Light Technologies Chief Scientist, Ran Goldblatt says that researchers analyzed satellite-based observations, including different types of land cover and land use and the amount of light emitted at night as captured by satellites. These 'UrbanSat' data can be coupled to neuroimaging and behavioral measures to provide insights.

"The ABCD dataset provides a unique opportunity for a much deeper understanding of associations between a range of indicators of the complex physical urban environment and their impacts on mental health," Goldblatt says. "This dataset also allows us to observe dynamic environmental changes and their impact on mental health over time, pinpointing specific interventions to boost mental well-being in various communities." The study looked at how land is used, including factors like light pollution and the number of buildings in an area, as a way to understand the area's social and economic status. The researchers found that places with more light at night and more buildings tended to have lower levels of parental education and household income, while areas with more trees and plants were linked to higher education and income.

"With the precise, objective measurements of environmental aspects such as greenspaces, density of urban areas, and water bodies, ABCD dataset can enrich our understanding of how physical surroundings impact brain activity through diverse complex physiological, psychological and social processes," Calhoun says.

"In this new study, we see that unique environmental and physical features may impact the extent and patterns of the brain's gray and white matter and its functional network connectivity."



Ragamala, translated from Sanskrit as 'garland of ragas', is a series of paintings depicting a range of musical melodies known as ragas. Its root word, raga, means colour, mood, and delight, and the depiction of these moods was a favoured subject in later Indian court paintings.

Attempts to synthesise the visual and musical worlds of the arts have a longstanding history. Goethe, Walter Pater and Wassily Kandinsky are famous Western scholars, who held up the idea that the union of music with art can be seen everywhere. Goethe even said that architecture was but 'frozen music.'

Starting from the sixteenth-seventeenth centuries, Ragamala paintings used images of Hindu deities to personify musical notes in the raga. In that vein, Raga Bhairava became Lord Shiva, with his vaahana (vehicle) Nandi. Raga Megha was pictured as Lord Vishnu, wearing a garland of flowers, with a peacock sitting at his feet. The ragas, moreover, are also associated with the six seasons.



Ragini Todi

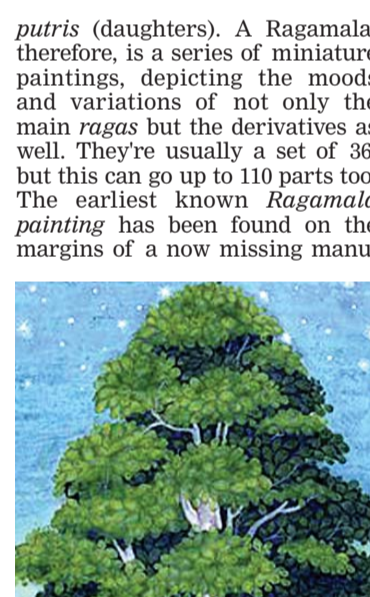
Songs You Can See

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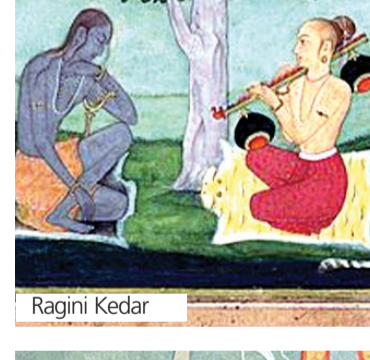
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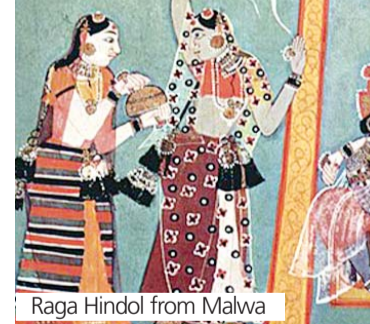
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Ragini Kechar



Ragini Gauri



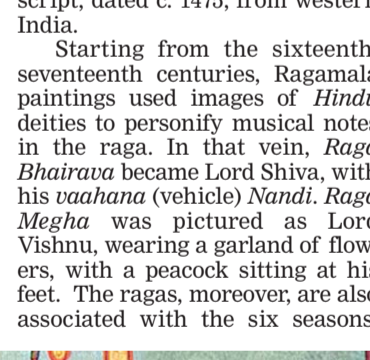
Ragini Vasanti



Raga Deepak



Raga Malkaus



Ragini Bhairavi



Raga Hindol from Malwa

summer, monsoon, autumn, early winter, winter and spring, and different times of the day, dawn, dusk, night, and so on. Thus, it is no surprise that the music of the ragas/raginis, and their paintings inspire a connection to a time of day, year, mood or god. Ragamala paintings were created in most schools of Indian painting, starting in the 16th and 17th centuries, and are today named accordingly as *Pahari Ragamala*, Rajasthan or



Raga Malkaus

Rajput *Ragamala*, Deccan *Ragamala*, and Mughal *Ragamala*. Also, it originated in Rajasthan. In these paintings, each raga is personified by a colour, mood, a verse describing a story of a hero and heroine (*nayaka* and *nayika*). It also elucidates the season and the time of day and night, in which a particular raga is to be sung, and finally most paintings also demarcate the specific Hindu deities attached with the raga like *Bhairava* or *Bhairavi* to Shiva, Sri to Devi, etc.

The six principal ragas present in the *Ragamala* are Bhairava, Deepak, Sri, and Megha, each having five Raginis and eight Ragaputras, except Raga Shri, which has six Raginis and nine Ragaputras, thus making a *Ragamala family* of 86 members.

Most of the extant works of *Ragamala* are from Deccan style, where Ibrahim Adil Shah II of Bijapur, was himself a fine painter and illustrator, though

In 1570, Kshemakarna, a priest of Rewa in Central India, compiled a poetic text on the



Raga Lalit



Ragini Gauri



Ragini Madhumadhavi



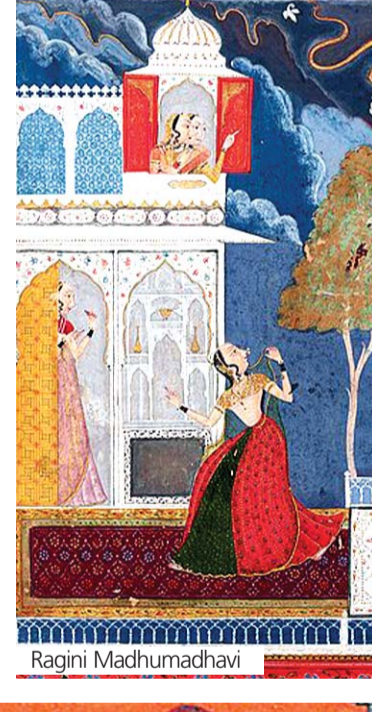
Raga Madhav



Ragini Gauri

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some Rajput style also exist, of which the work of an artist of the 'Chavand' (a part of Mewar) school of painting, Sahibdin, whose *Ragamala* (musical modes) series dated 1628, are now in National Museum of India. *Ragamala* sets discovered in Odisha are in the *Pattachitra* style, based on the ragas of Odissi



Ragini Madhumadhavi



Raga Madhav



Ragini Gauri

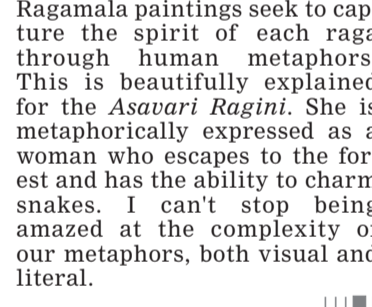
music and show distinct iconography and raga groups from other regions.

Six are male (parent) ragas, the thirty raginis are their wives and the remaining forty-eight are their sons. These are listed as follows,

- Parent Raga: Bhairav raga**
Wives: Bhairavi, Bilawali, Punyaki, Bangali, Asleghi. Sons: Panchami, Harakh, Disakh, Bangal, Madhu, Madhava, Lalit, Bilawal.
- Parent Raga: Malkaus raga**
Wives: Gaundkari, Devagandhari, Gandhari, Seehute, Dhansari. Sons: Maru, Mustang, Mewara, Parbal, Chand, Khokhat, Bhora, Nad.
- Parent Raga: Hindoi raga**
Wives: Telangi, Devkari, Basanti, Sindhoori, Aheeri. Sons: Surmanand, Bhaskar, Chandra-Bimb, Mangalan, Ban, Binoda, Basant, Kamoda.
- Parent Raga: Deepak raga**
Wives: Kachheli, Patmanjari, Todi, Kamodi, Gujri. Sons: Kaalanika, Kuntal, Rama, Kamal, Kusum, Champak, Gaura, Kanra.
- Parent Raga: Sri raga**
Wives: Bairavi, Karnati, Gauri, Asavari, Sindhavi. Sons: Salu, Sarag, Sagra, Gaund, Gambhir, Gund, Kumbh, Hamir.
- Parent Raga: Megh raga**
Wives: Sorath, Gaundi-Malari, Asa, Gunguni, Sooho. Sons: Biradhar, Gajdhar, Kedara, Jablidhar, Nut, Jaldhara, Sankar, Syama.

In the Indian lexicon, *Ragamala* paintings seek to capture the spirit of each raga through human metaphors. This is beautifully explained for the *Asavari Ragini*. She is metaphorically expressed as a woman who escapes to the forest and has the ability to charm snakes. I can't stop being amazed at the complexity of our metaphors, both visual and literal.

At least when it comes to short-term learning and motor skills which this study investigated," says Mikkel Malling Beck, the research article's lead author and a former PhD student at the Nutrition, Exercise, and Sports department, who now works as a researcher at the Danish Research Centre for Magnetic Resonance at



Ragini Vasanti



Ragini Vasanti

#LEARNING SKILLS

Kids don't learn motor skills faster than adults

Both teenagers and younger adults are better equipped to quickly acquire new skills as compared to children.

Contrary to popular belief, children aren't better at learning new skills than adults, according to new research. It's widely believed that children learn new motor skills faster than adults, whether it's mastering slopes on skateparks, learning new languages, doing cartwheels, or picking up new dance moves from TikTok.

"There's an assumption in popular science literature and various textbooks that children in a certain age range, from roughly the age of eight until puberty, are better at learning new skills than adults," says Jesper Lundbye-Jensen, associate professor at the University of Copenhagen's Nutrition, Exercise, and Sports department and head of the section Movement and Neuroscience.

"This is often described as a 'golden age for motor skills learning.' But there's no actual physiological basis for this so-called golden age." The popular notion of a pre-adolescent motor learning peak prompted the researchers to investigate how age-related differences in our central nervous system affect motor skill learning.

In the study, the researchers tested motor learning abilities of 132 participants from four age groups, 8-10 years, 12-14 years, 16-18 years, and 20-30 years. In a lab setting, participants practiced moving a cursor on a computer screen with fast and precise finger movements.

Who Learns Faster?

Participant performance was measured immediately after being introduced to the task (as a baseline), during the training session, and again 24 hours later.

During the training session itself, both the 16-18 year olds and 20-30 year olds improved their skills significantly more than the 8-10 year olds. "So, it appears that both teenagers and younger adults are better equipped to quickly acquire new skills as compared to children, who showed smaller and slower improvements."

"At least when it comes to short-term learning and motor skills which this study investigated," says Mikkel Malling Beck, the research article's lead author and a former PhD student at the Nutrition, Exercise, and Sports department, who now works as a researcher at the Danish Research Centre for Magnetic Resonance at

Hvidovre Hospital. While the researchers cannot pinpoint the exact reasons for why the adults learn faster, they have a few theories. "The results demonstrate that the older the participants are, the more skillful they become during the early stages of training. This suggests that they get more out of the task introduction. We suspect that cognitive development and an increased ability to process information play a role, meaning adults may have more experience receiving instructions and translating them into action," says Lundbye-Jensen.

The difference may also be because the fully developed nervous system of an adult provides better structural conditions for learning. In other words, after many years of schooling, adults may be more experienced learners, and thereby, more efficient at learning new.



Kids and Sleep

The picture changes when it comes to retention.

"When we look at what happens from the end of training until the participants return the next day, the dynamic reverses. While the youngest participants actually improve overnight, adults lose some of their ability to perform. This means the youngest ones are better at consolidating and reinforcing their memory after they've practiced," says Beck.

According to the researchers, this suggests that sleep benefits children's learning and memory more. But other factors could also be at play. For example, older children and adults typically sleep less and have more 'competing' activities throughout the day. Memory consolidation processes in the nervous system continue for hours after the training ends.

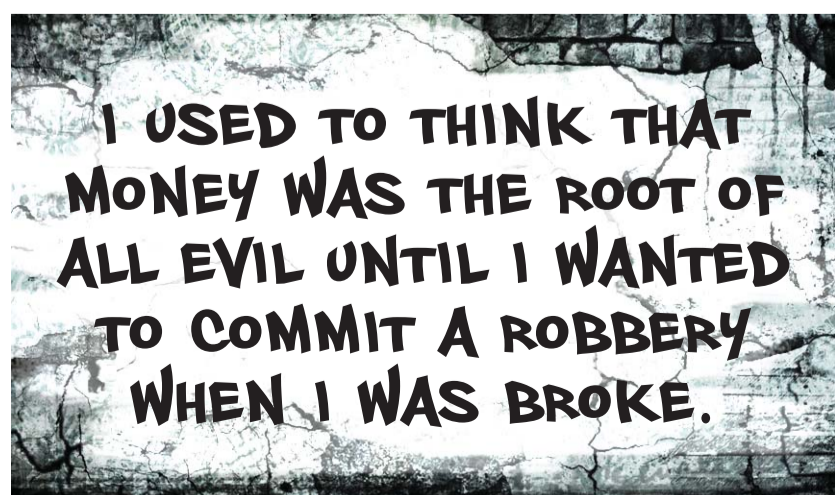
"When a math class ends, the brain keeps working on what was taught, and in doing so, reinforces memory. Sleep is known to aid consolidation. But engaging in other activities in the hours after, especially those that involve learning, can interfere with memory processes and the consolidation of what was just learned," explains Lundbye-Jensen.



Potential Applications

While the overall learning outcome doesn't vary drastically across age groups, the study does show that the learning process differs significantly depending on age, with underlying mechanisms influenced by the maturity of one's central nervous system. According to the researchers, the results could be useful in teaching and training fields that involve skill and movement, such as sports and music.

THE WALL



BABY BLUES



By Rick Kirkman & Jerry Scott

ZITS



By Jerry Scott & Jim Borgman