

#RESEARCH

Can an organ transplant really change someone's personality?

The donor organ could change the recipient's mood and personality through the substances it releases



Changes in personality following a heart transplant have been noted pretty much ever since transplants began. In one case, a person who hated classical music, developed a passion for the genre after receiving a musician's heart. The recipient, later, died holding a violin case. In another case, a 45-year-old man remarked how, since receiving the heart of a 17-year-old boy, he loves to put on headphones and listen to loud music, something that he had never done before the transplant.

A recent study suggests that heart transplant recipients may not be unique in experiencing personality changes. These changes can occur following the transplantation of any organ. So the donor organ, which may have a different base level of hormones and peptide production from the original organ, could change the recipient's mood and personality through the substances it releases. It has been shown that natriuretic peptide levels are higher following transplantation, and never return to normal. Although, some of the elevation is probably a response to the trauma of surgery, it may not account for everything.

Memories stored outside the brain

The body stores memories in the brain. We access them when thinking or they can be triggered by sight or smell. But memories are basically neurochemical processes, where nerves convey impulses to each other and exchange specialised chemicals (neurotransmitters) at the interface between them. While in transplant surgery, many of the nerves that govern the function of the organ are cut and are not able to be reattached, this doesn't mean that the nerves within the organ do not still function. In fact, there is evidence that they may be partially restored, a year after surgery. These neurochemical actions and interactions could feed into the nervous system of the recipient, enacting a physiological response that then affects the recipient's personality according to memories from the donor.

However, there is some evidence to suggest that these personality changes aren't all psychological. Biology may play a role, too.

The cells of the transplanted organ will perform their expected function, heart cells will beat, kidney cells will filter and liver cells will metabolise, but they also play a role elsewhere in the body. Many organs and their cells release hormones or signalling molecules that have an effect locally and elsewhere in the body.

The heart seems to be most commonly associated with personality changes. The chambers release peptide hormones, including 'atrial natriuretic peptide' and 'brain natriuretic peptide', which help regulate the balance of fluid in the body by affecting the kidneys.

They also play a role in electrolyte balance and inhibiting the activity of the



Another one of my joys, while living in Mango Range, was the time I got to spend with Mr. Siasp Kothawala and his wife Zarine, at their lovely guesthouse in Masanigudi called *Bamboo Banks*. Masanigudi is in the foothills of the Nilgiris, at the edge of the Mudumalai-Bandipur National Park, so, there is a lot of wildlife around. You see a lot of *Chital*, some *Gaur*, and some *elephant*, the latter being dangerous as they are too close to human habitation and often in conflict with people. Mudumalai is also supposed to be a tiger reserve though, I have never seen a tiger in it.

PART:2



Mango Range Tea gardens.

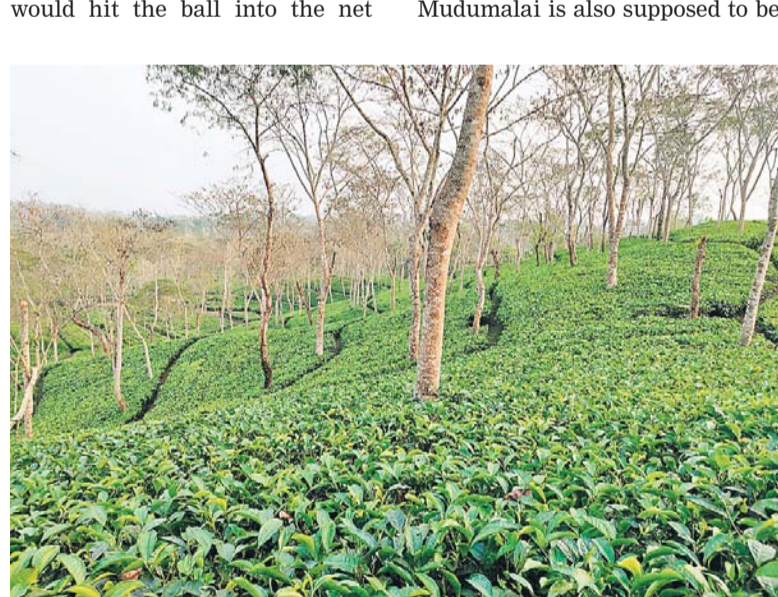
All Play And No Work!!!!



Mirza Yawar Baig
Naturalist and wildlife conservationist

One of the things that I was very appreciative of and thankful for was the leisure that I had in Mango Range. I had no specific work except what I decided to do for myself. And I was still getting my salary. I decided to learn to play golf. I got a caddy from Ooty *Cymkhana Club* (Ooty Gym) to come and stay with me in the estate for three weeks. His name was Frank Augustine (I used to call him Frankenstein) and he looked like a dried prawn. But when he swung the club, he always hit the ball with that sweet 'phut' that all golfers love to hear. And the ball would travel straight like a bullet down the freeway. Shows that it's technique and not strength of the arm that works in golf. Also, in many other things in life. My club, on the other hand, would come up with a good measure of earth and top the ball to boot. Frankenstein believed in hard work, meaning, making my hard work.

He set up a practice net, produced a set of a hundred used golf balls, and we were good to go. I would hit the ball into the net



Tea garden in Assam.

until I felt my arms would drop off! All the while, Frankenstein would sit on his haunches under the *Champa* tree, that was to one side and watch me and make 'clucking' noises. The effect of all this clucking and my swinging at the ball became clear when one day about midway in our training, Frankenstein suggested that we should go and play a round at the club. So, off we went on the three-hour drive to Ooty. After a cup of tea and a sandwich, I teed off and that is where all the practice paid off.

Ooty Gym has very narrow freeways, bordered by spiky gorse. If you didn't hit your ball straight, you would send it into the gorse and then, you may as well forget about it because if you want your ball back, you must pay by leaving your blood and skin on the gorse and acquiring gorse thorn furrows in your hide. As Frankenstein continued his mother-her-act, I could see the distinct improvement in my style and capability.

Another one of my joys, while living in Mango Range, was the time I got to spend with Mr. Siasp Kothawala and his wife Zarine, at their lovely guesthouse in Masanigudi called *Bamboo Banks*. Masanigudi is in the foothills of the Nilgiris, at the edge of the Mudumalai-Bandipur National Park, so, there is a lot of wildlife around. You see a lot of *Chital*, some *Gaur*, and some *elephant*, the latter being dangerous as they are too close to human habitation and often in conflict with people. Mudumalai is also supposed to be

#GROWING



Tea Plantation Agriculture in India.

a tiger reserve though, I have never seen a tiger in it.

The gate of *Bamboo Banks* was an ingenious contraption. It was a pole, suspended horizontally across the road and had a plastic water container on one end. There was a sign for you to tug on a rope, if you wanted to open the gate. The rope was connected to an overhead tank, so, when you tugged it, water would flow into the plastic can on the pivoted side of the pole, which then went down and lifted the other end. All this happened while you were comfortably sitting in your car. The water would then drain out of a hole in the can and flow into an irrigation ditch and into some fruit trees, closing the gate.

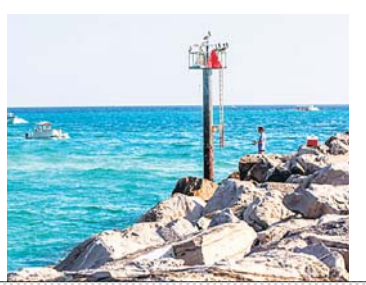
Siasp was a tea planter and had worked for the Bombay Burma Tea Company (BBTC). He then went into the tourism business and did very well. We would spend lovely afternoons talking about the tea industry and the general state of the world and drinking tea. Siasp always had an angle to everything, which he would put across in a hilarious and entertaining way.

Siasp also had horses on his farm and having had tea, I would take one of the horses and go riding in the buffer zone of Mudumalai National Park. This had its exciting moments and I recall two of the best. One day, late in the afternoon, I was riding out of the farm and into the dry fields that surrounded it, before the track entered the bamboo thickets that bordered Mudumalai, when I saw a *Peregrine falcon*, hovering in the sky ahead of me. I pulled up to watch it and saw a *dove* break out of cover from a hedge and head for

the safety of the forest, flying very fast. The falcon folded his wings and stooped coming down like an arrow out of the heavens. The dove had almost made it to the forest cover, when the falcon hit it in middle of its back with a slap that I could hear, where I was sitting on my horse. The dove must have died with the impact, but the falcon bore it to the ground, and then holding it in its claws, looked up right and left, its pale yellow eyes scanning the world to challenge any takers. What a magnificent sight that was! The image is engraved in my memory.

As I rode on, I took a path that went along the middle of a forest glade, which had scattered clumps of bamboo. After a kilometer or two, the path passed between two very thick and large clumps of bamboo and dipped into a dry stream bed and went up the other bank. I used to like to gallop this stretch and my horse knew the routine. Strangely on that day, as we came near the bamboo clump, my horse shied and stopped and refused to go forward. This was odd behavior, but I have enough experience to know that in the forest, your animal is your eyes and ears and you only ignore its signals at your own peril. I listened to the horse and turned around and then took a long and circuitous route to go around whatever it was that was bothering my horse. As we came around, I saw what was bothering him. It was a lone *male elephant*, which was hiding behind the clump of bamboo.

Now, I have no idea what the elephant's intention was, but I was not taking any chances. My horse obviously didn't like the idea of passing close to the elephant and



Mother Ocean Day

Though marine biologists are unsure just how many kinds of creatures reside in our planet's five oceans, it is estimated that about one-quarter of all of the Earth's species do. Not to mention how very important the oceans are to our civilization, for thousands of years, braving their waters has been one of the bravest feats a human being could accomplish, one that often led to amazing discoveries and the general increase of our knowledge of the planet we inhabit. For all of these reasons and many, many more, *Mother Ocean Day* is a long-overdue celebration of our oceans in all of their majesty and peril.



Tea Planters in Kerala.



Munnar Tea Mountain Plantation in Kerala.

That was a lone wild tusker, that you were standing next to. I have no idea why he let you get that close or why he did nothing. Your lucky day! That is a 'wild elephant' and a lone one at that. Don't do these stupid things! And he went on for a while in the same vein. I was so shocked that I listened in silence. And of course, how can you get angry with someone who is only interested in preserving your life? But I still have the picture, which is very impressive.

Final story here involving my good friend, Siasp. Siasp had a very good friend in Mysore, who was the Commandant of Police, in charge of the Karnataka Armed Reserve Police Mounted Company, called SG Mariba Shetty.

Mariba Shetty was known for his high standards and a visit to the stables of the Armed Reserve Police Mounted Company was a delight to say the least. I love the smell of freshly groomed horses and fresh hay. Yes, there is the smell of horse dung also but it is a pleasant smell. I spent a lot of my youth grooming horses, because that is how we were taught riding at the AP Riding Club, in Hyderabad, by our ex-cavalry *Ustaads*, Abdul Hameed Khan and Sayeed Khan. Our training was rigorous.

You started one hour before it was time to ride, by mucking out the stable and grooming your horse. Then, you saddled up and you were ready to go. All this was unwritten. Nobody forced you. If you didn't want to do that and wanted to ride a horse like you ride a motorcycle, by just getting

on and getting off and handing it to a sycor, you could do that. But then, you were given the worst nag in the stable. If you wanted to ride the *Thoroughbreds* or the *Kathiavari* and *Marwari* horses, then, the unwritten rule was that you showed your readiness by starting with mucking out the stables. Great character building, if you ask me. To return to Siasp's story with Mariba Shetty, let me tell you how Siasp told me. "You remember Mariba Shetty? The Mysore Mounted Police Commandant?"

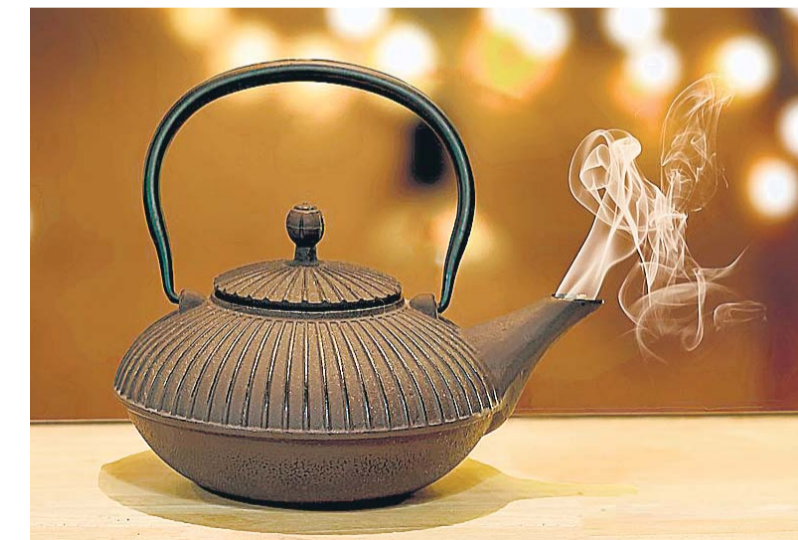
"Yes, I do. What happened to him?" "I heard that there was a riot during a Dussehra procession, and he tried to stop it but was pulled off by his horse and killed. I was very sad to hear this. You know he was a great friend of mine. So, I wrote a long letter to his wife, telling her what a wonderful man he was and how much I appreciated our friendship."

A couple of weeks passed. Then, I got a call from Mariba Shetty. He says to me, "Mr. Khotawala, I called to tell you that I am well and that report about my death was wrong. Thank you very much for your letter. I didn't know you thought so highly of me."

Big lesson in telling people that we appreciate them while they are alive, instead of writing moving obituaries, after they are dead. In this case, the man got to read his obituary but in most cases, it is a waste of effort.

Concluded.

rajeshsharma1049@gmail.com



Hot tea after a long day golfing.

#BOTANY

Buried Seeds Viable For 144 Years

The team always thought that a hybrid was somehow mixed in with the original seeds, but never had the tools to confirm it, until now.

How long can seeds remain viable? New findings hold an answer, but the mystery continues. In April 2021, four plant scientists met at an undisclosed area of the Michigan State University campus to dig up a bottle containing 'seeds' buried more than 144 years ago by botanist William J. Beal.

Fast forward to 2023, more than two years after the seeds were excavated from their secret location, molecular genetic testing has confirmed that a 'hybrid' plant was accidentally included among the seeds in the bottle, a discovery that would have surprised and amazed Beal because DNA was unknown at the time.

During his time on campus, Beal wanted to help farmers increase crop production by eliminating weeds from their farms, so, he was determined to find out how long the seeds of these undesirable plants could remain viable in soil.

He filled 20 glass pint bottles with sand and 50 seeds from 23 weed species. Beal buried the bottles with their mouths slanting downwards so that water would collect, replicating as best he could the natural seed and soil conditions. And so began the *Beal Seed Experiment*.

Beal originally excavated every five years to test the seeds, which grew each time they were excavated. However, in 1920, it was decided to change the interval to 10 years to prolong the study. Then, in 1980, the interval was extended to 20 years. With four bottles still buried, the experiment will continue until 2100.

In 2021, the current team of Beal researchers excavated the 14th bottle of seeds buried on campus to see if they could finally answer the question, How long can seeds remain viable to grow?

"The biggest surprise to me is that the seeds germinated again," says Frank Telewski, professor emeritus, Plant Biologist, and Beal team leader. "It's amazing that something so old can still grow."

Since April 2021, the Beal exper-



iment team members, including Telewski, Lars Brudvig, assistant professor of Plant Biology, and David Lowry, associate professor of Plant Biology, have been sequencing genomic DNA to confirm the plant species' identities for the first time in the history of the experiment. The Beal team's work appears in the

American Journal of Botany. The team always thought that a hybrid was somehow mixed in with the original seeds, but never had the tools to confirm it, until now.

"The molecular genetics work confirmed the phenotypes we saw, which is that the plants were *Verbasum blattaria*, or moth mullein, and one hybrid of *Verbasum blattaria* and *Verbasum thapsus*, or common mullein," Fleming says. Beal stated that he included only *Verbasum thapsus* seeds, so, some mix-up must have happened while the bottles were being prepared.

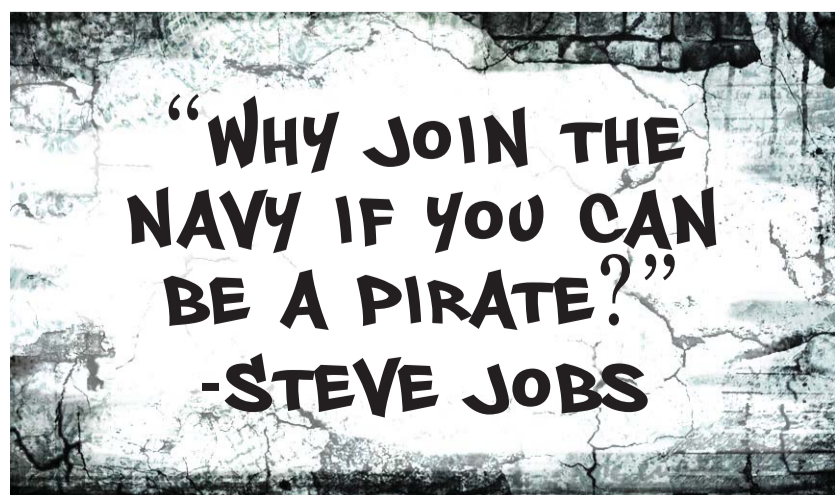
"While most species in the Beal experiment lost all seed viability in the first 60 years, the persistence of *Verbasum* seeds provides invaluable information about seed viability in natural soil conditions," Brudvig says.

"In the 140-plus years since the experiment's start, the question of *seed bank longevity* has gained new relevance, including for rare species conservation and ecosystem restoration, for example, prairie plantings on former farmland," Brudvig says. "Our findings help to inform which plant species, like *Verbasum*, might be problematic weeds for a restoration project like this, and which other species may not, depending on how long a field was farmed before being restored."

Beal hoped to help farmers eliminate weeds by determining how long seeds would remain viable. After 144 years, that question remains unanswered.

"The Beal experiment will ultimately end when we run out of bottles," Lowry says. "If seeds germinate again from our next dig, we may need to consider extending the time between bottle extractions to every 30 years. It's still a little early to put it on my calendar, but I am looking forward to seeing, if we can wake up any more seeds in 2040."

THE WALL



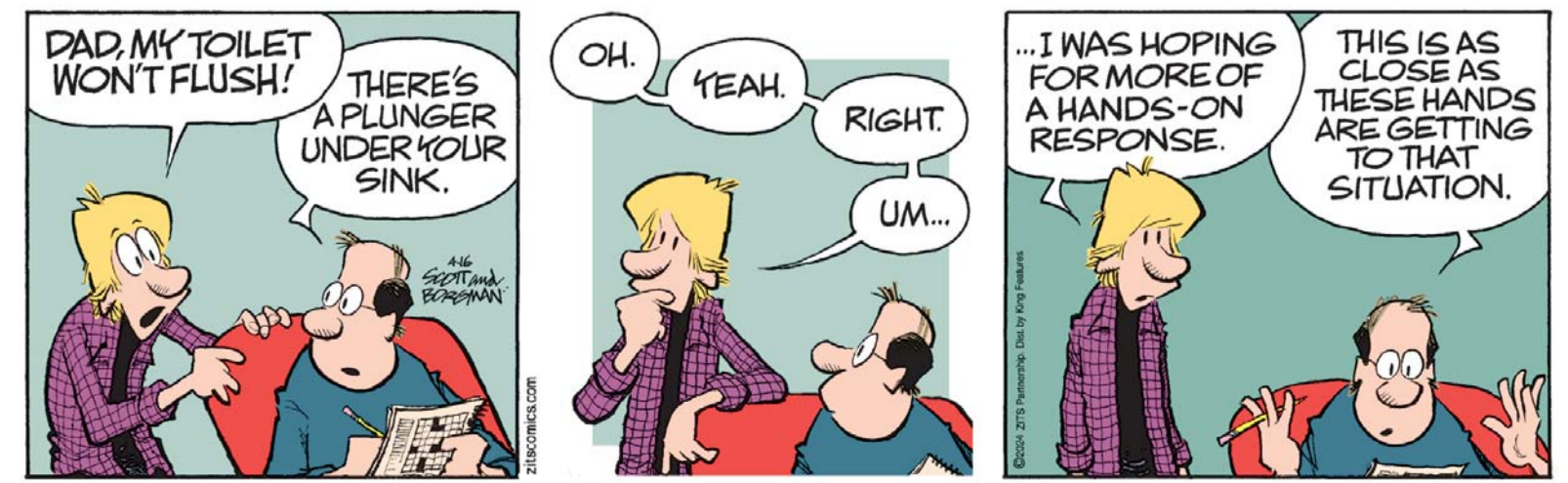
BABY BLUES



By Rick Kirkman & Jerry Scott



ZITS



By Jerry Scott & Jim Borgman