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# THE AGENDA

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# Editorial

“To hell with facts! We need stories!” Ken Kesey was once quoted. We like to think that sometimes you can have both. This month’s Agenda holds the stories of health issues, gang members, biodynamic farmers and scientists. “What do these all have in common?” you may be wondering. Well, nothing and everything at once. The world of journalism is wonderful for many reasons: the web it manages to spin between both the writers and the readers of worlds so far apart is one of the best of these. Enjoy the facts, enjoy the stories: they are equally important to us, and we hope to you too.

## CONTRIBUTORS

- Justice Khumela
- Kim Harrisberg
- Xanthe Hunt
- Francois Badenhorst
- Christopher Udemans
- Gerrit van Rooyen

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The Agenda

# “Spiritual Science”

By Kim Harrisberg

Born from the outlandish theories of one man, biodynamic farming has married the esoteric with the agricultural. Just ask Wellington's Wendy Lilje.



**H**e was born on the February 27th 1861 in the Austrian countryside to a young station master and housewife. Would his parents have believed that their newly-born would shape the life of a woman living on an isolated farm in Wellington, South Africa, 152 years later?

He was named Rudolph Steiner. His unrelenting fascination with knowledge may have hinted towards his future influence not only on this woman, but on an entire farming community. The site [Rsarchive.org](http://Rsarchive.org) contains information on his life and his teachings. In his autobiography, *The Course of My Life*, he writes about how, at age eight, he felt a strong reassurance that more existed than the mere physical banalities of the world. He wrote, "... the reality

of the spiritual world was as certain to me as that of the physical. I felt the need, however, for a sort of justification for this assumption."

His whole life could be seen as a pursuit for this justification. His father, understanding he could not answer the returning questions of his son, sent him to school and eventually to the Technical University in Vienna. He studied and succeeded at more subjects than his curriculum required. He dealt with the works of Kant and Goethe, yet eventually realised his questions of the spiritual world were left unanswered.

At age 33 he published *The Philosophy of Freedom* which he felt was met with misunderstanding by academics. Unperturbed, Steiner began to lecture and write on what

would later become a worldwide movement: Anthroposophy

"ANTHOPOSOLOGY IS a world view," says Wendy Lilje. "It is the idea that spiritual beings influence the world and the world influences spiritual beings. The Waldorf Schools are based on this concept and so is anthroposophical therapy, architecture, dance, remedies and, of course, farming.

Biodynamic farming is like organic farming, but with a strict set of spiritual beliefs that aid the crops and the animals."

Lilje is clad in rubber boots, jeans and a woollen black jersey. Her hair is cropped short, she wears not a trace of makeup and, as she gestures with her hands, soil is seen trapped beneath her nails. Years of physical labour and financial uncertainty have

left her face lined, simultaneously accentuating and softening her expressions. She is standing beneath a large oak tree in her garden that makes up part of her home, the Bloublommetjieskloof Biodynamic Farm.

For the past ten years, this wild, green enclave amongst the Wellington Mountains has been Lilje's home. It stands in stark contrast to Johannesburg, where she was raised and studied.

Lilje studied a Bachelor of Science at the University of the Witwatersrand. Fascinated by chemistry and its existence in nature, she went on to work for Weleda, a biodynamic skincare company. Lilje would travel to different farms and research the ingredients for future skin products. She was doing work on



a farm near Bloublommetjieskloof, when she met Jean Malherbe, the then-owner of the land.

A bond was formed through mutual life views that centred on Steiner's teachings. Lilje learnt that forty years ago, Malherbe had transformed the land into the first biodynamic farm in the country. She was largely outnumbered by the conservative, Afrikaans males churning the soil around her. Growing weaker with age and having no living relative to whom she could turn, Malherbe began to become Lilje's mentor.

"It is quite a sad story," says Lilje. "She has no one else in her life and so I bought the land from her. In her remaining years she stayed in a cottage on the property, making sure she left her home in good hands. It was difficult for me because she could come across as quite judgemental. I was different to her in the sense that I learnt most of my biodynamic farming methods through trial and error."

BESIDES FOR Lilje's experimental farming methods, there are certain techniques practiced on Bloublommetjieskloof that have been and continue to be shared by like-minded farmers around the world. Some of these biodynamic cornerstones were born through Steiner's clairvoyant visions.

Lilje's 27-year-old son Ishaan explains what is termed "preparations". He has descended

from his clay house on the hill overlooking the crops, donning a single golden loop through his earlobe and wearing an outfit similar to Wendy's. He speaks passionately about the way their farm functions, with inter-minglings of maturity and youthfulness.

"So the preparations are used to facilitate the coming together of the cosmic forces with the farming methods," says Ishaan. "Preparation 502, for example, would involve stuffing a deer's bladder with Yarrow flowers and then allowing this to dry in the sun during summer. We first order the bladder in from New Zealand. In autumn, the bladder is buried beneath the ground. When it is spring, the bladder is dug up and the fermented flowers are then sprinkled on the compost piles so that it can be cosmically processed."

Perhaps hearing himself explain the preparations aloud allows Ishaan to perceive the peculiarity of it all with fresh ears. He giggles to himself and says: "We all sound like a bunch of loonies... If I didn't understand it, I would think it sounded like a type of cult," he says, attempting to dilute the oddity of his previous sentence.

Sensing her son's slight discomfort, Lilje jumps in. "The thing is," she says, "Anthroposophy is a spiritual science. It goes beyond the notion that everything has to be seen to be real."

WALKING AROUND the farm,

Lilje explains how, before his death, Steiner was approached by conventional farmers who desperately pleaded for his advice. Their land was barren and their animals were unhealthy. The same suggestions Steiner offered then are still honoured by Lilje, Ishaan and the three other workers making up the entire staff of Bloublommetjieskloof.

"Genetically-modified organisms are a big no-no," says Lilje. "Even a wiff of that near our farm and we would be declared un-biodynamic by Demeter, the certification board for biodynamic farmers. In fact, anything artificial is completely out of bounds whether it be pesticides, grains or fertilisers," says Lilje.

She walks past the four, large piles of cow manure that are fermenting near the cows' shed.

"Everything on the farm must go back into the farm: the cow manure is used for the plants and the remainders of the plants are fed to the cows. For our cheese we even use the enzymes found in the figs which grow in the garden.

And, of course, all planting must be synchronised with the appearance of specific constellations," explains Lilje, matter-of-factly.

THE SITE, Demeter.net, lists the registered biodynamic farms worldwide. Over 150 000 acres of land are being farmed biodynamically by almost 5 000 farmers around the world. European countries, leading

with Germany, see the largest biodynamic farming communities. India, Egypt and Brazil are hot on their tails.

Ishaan smiles and shakes his head when asked about the South African biodynamic community. "They probably don't even have computers!" he laughs.

Lilje steps in to elaborate once again. "The farms are just usually quite isolated so they often won't have internet," she explains. "Every year all the farmers come together to make the preparations, but besides for that it can be quite lonely."

Bloublommetjieskloof stock dairy and body products to over 60 shops in the country. They seem to make ends meet, with some months being harder than others. The distinct biodynamic regulations means large-scale production will never be a characteristic of anthroposophical farming.

For Lilje and her staff, they are not even tempted to try a more lucrative farming method, the farm is considered "a living organism" to them all. "I could not imagine farming in any other way," says Lilje.

And so, the birth of Rupert Steiner in Austria on February 27th 1861 would shape the life of a mother and son, 152 years later, in Wellington, South Africa. He would probably say he saw it coming all along. ■

# The Current that Cures

By Xanthe Hunt

For 79 years, electroconvulsive therapy has been used to treat psychiatric illness, even though no one knew exactly how it worked. Stigmatised by scary images of the 'shock therapy' of the 1950s, the treatment became widely feared. But doctors are finally figuring out how it functions, and the treatment no longer looks like something out of a horror film. Electroconvulsive therapy might finally shed its bad reputation.

**I**t is five-o'clock in the morning, but the clinic is already coming to life: the shuffle of efficient morning shift feet replacing the exhausted steps of the night staff.

In a small, neat operating room in the building's north wing, the therapy team moves into action like a well-oiled machine.

Outside, in the melamine-floored corridor, Nurse Sarah Bembie explains what is happening on the other side of the mint-green wall.

"The first patient arrives before sunrise, and lies here," says Bembie, who has been a nurse at the Cape Town psychiatric clinic for close to seven years.

She points to a low, railed cot lying abandoned and superfluous in the hallway.

"Then we ask the patient: 'Can you confirm that you have not had anything to eat for at least six hours?', and, 'Is all your jewellery off?'"

If the patient says yes to both, then their drip is inserted and anaesthetic administered. Then muscle relaxant, bite plate, and electrodes: one little suction pad connecting a wire to each temple.

"The pads send the electricity through the patient's brain; it's only a weak current, but we put a bite plate in their mouth so they don't bite themselves when they receive the shock.

"After three minutes, it is all over," she says.

Then the patient is wheeled out to wake up and reorient themselves in the recovery room. After an hour or so, it's back down the hall for a normal day of group therapy and craft classes.

"People are surprised that ECT still happens," says Bembie. "But it's done a lot: some of the doctors swear by it." She shrugs. "It works."

BEMBIE IS right on both counts: ECT is still a widely-prescribed treatment for psychiatric illness, both in South Africa and globally, and many people are taken aback when they learn that this is the case.

First used in the asylums of Europe, ECT was the brainchild of Professor Ladislav von Meduna, a Hungarian neurologist who observed that psychiatric patients with epilepsy appeared calmer after a seizure.

By 1934, von Meduna had successfully treated catatonic patients (whose ability to move and behave 'normally' is severely impaired) with "induced convulsions" – electric shocks.

But this was before the days of the anaesthesia and informed consent



which are now mandatory for the use of ECT, and so von Meduna's 'shock therapy' soon got a bad reputation.

Dr Janine Benson-Martin is a consultant psychiatrist at Valkenberg Psychiatric Hospital in Cape Town, and her area of research is the use of ECT in South Africa today. Benson-Martin explains that negative perceptions about the treatment are still widely held.

"It's definitely a barrier to patients that they think ECT is this inhumane thing that's done when you're still

wide awake."

Like Benson-Martin, Dr Gerhard Jordaan, the clinical head of the psychiatric unit at Tygerberg Hospital in Bellville, agrees that people tend to assume ECT is an out-dated, brutal and "archaic" procedure.

However, he explains, ECT today looks completely different from when it was first used.

"Today, a very weak electric current is directed through the fronto-temporal areas of the brain – just

above and in front of the ear – for one to two seconds, just long enough to cause a grand mal convulsion, or 'fit'.

"The electrode pads are either placed both on one side – in which case there is usually less short-term memory loss – or one each side of the head, which helps people more rapidly," says Jordaan.

"Short-term memory loss is still a side-effect, but is almost always temporary. Disorientation can arise from anaesthesia, but that doesn't last either.



"Today," he stresses, "patients are always fully anaesthetised, given muscle relaxants, and have their heart-rate and oxygen-levels monitored the entire time."

But, despite the fact that ECT has only been performed on anaesthetised patients since the 1960s, and muscle relaxants are used to lessen the violent convulsions (à la Jack Nicholson as R.P. McMurphy in *One Flew Over the Cuckoo's Nest*), negative perceptions still prevail.

MARTHA MANNING, a Professor of Clinical Psychology at George Mason University in Virginia, USA, underwent ECT after battling major depression for ten years without respite. She reveals that, despite her professional qualification, she was still terrified of trying the "scary" treatment.

"Before I went for it, I'd heard almost nothing about ECT, except for the negative images in literature and the media. The term "shock therapy" was scary. But I was in big trouble," she explains.

"Because I 'think like a psychologist', I'd put therapy first for years," she says, "But I had a seven-year-old and a large family, and I felt like I had to do anything to try to stay in this world."

To date, Manning has had four courses of ECT. A standard course

varies between six and twelve sessions. In each session, the electrode pads (wires with 'sucker-like' electrodes at the end) send between 30 and 180 seconds worth of a weak electric current through the brain.

"I felt much better afterwards," says Manning. "It's like the doctors on TV when they use shock pads – a defibrillator – to bring a patient back to life. It's a simplistic comparison, but one that fits for me."

Manning has since authored *Undercurrents: A Life Beneath the Surface*, which chronicles her experience of ECT, and, she says, aims to dispel the perception that it still entails being handcuffed to a bed while conscious, and experiencing violent, bone-fracturing shaking.

But Elsabé Brits, an acclaimed science journalist from Cape Town, who, like Manning, has authored a book about living with psychiatric illness, is more moderate in her praise for the treatment.

Hospitalised in June 2001 when she began to show signs of psychiatric illness, Brits was recommended ECT when a three-week barrage of medications failed to help her brain chemicals, and thus her mood, stabilize.

"It does work," says Brits, "They prescribe it when your meds don't

work, or if you're very suicidal.

"But you have headaches. You wake up with temporary memory loss. I mean, you re-read the same magazine because you can't remember that you've read it already," she explains.

"As I said, it helps, but ECT is quite a dramatic therapy."

Dramatic is an accurate appraisal, and not only because ECT involves shooting electricity through the most complex and sensitive organ in the human body: it is dramatic because doctors have been using it with much success for 79 years, and only now are they beginning to surmise how it works.

"AFTER THE negative perceptions people have based on what they've seen in movies, the next biggest barrier to people who need it having ECT, is that we weren't sure how it works," says Benson-Martin.

Now, thanks to the research of Professor Andrew Leuchter and his colleagues at the University of California, this is no longer the case.

"Over the years, our studies have led us to believe that depression is a state of increased connectivity among the various brain regions and structures," says Leuchter, explaining that this means some parts of the clinically depressed patient's brain are 'hyperactive', bombarding other brain regions with signals.

"What treatments like ECT do is to decrease this connectivity by resetting brain activity," he explains.

"Our theory is that depression arises from a dysrhythmia – an abnormal network of connections that occurs in the brain. By stimulating these networks repetitively with ECT we believe that the networks will 'reset' to a normal configuration and the depression will resolve," he says.

So, like an abnormal heartbeat can cause heart problems, which pace-makers are used to regulate, abnormal brain activity can cause depression, and that is what the ECT fixes.

The electric current, then, seems to repair not individual neurons, as previously guessed, but rather corrects the mechanism that regulates how the brain's activity takes place.

Brits and Manning agree that not knowing how ECT works made making the leap to treatment more fraught. So, with Leuchter's discovery, psychiatrists like Jordaan and Benson-Martin believe, patients will be more inclined to give ECT a chance.

Add to this an awareness that the treatment has changed drastically since its inception, and ECT might finally shake off its bad reputation. ■

# From cardboard telescope to SALT

By Gerrit van Rooyen

Professor Thebe Medupe is a passionate astrophysicist who wants to inspire African students to enter the world of astronomy and astrophysics.



**I**n 1986 a cosmic event occurring every 75 years or so forever changed the life of one 13-year old boy from an impoverished village outside Mafikeng, a city in the North-West province of South Africa.

The cosmic event, visible in the night sky as a bright star with a tail, was Halley's Comet, a large "dirty snowball" passing the earth on its orbit around the sun. The boy, Thebe Medupe, is now a professor in astronomy and astrophysics at North West University's Mafikeng-campus.

In 2002 he obtained his PhD in astrophysics from the University of Cape Town (UCT) – becoming

one of South Africa's first black astronomers. "Right now we only have about 10 black astronomers in this country. After 20 years of democracy, it is shocking that this number hasn't increased significantly," says Medupe.

At the head quarters of the South African Astronomical Observatory in Cape Town, in a large office, with a wood floor and encircled by tall wooden book shelves, the short and stocky Medupe cheerfully recounts how his love for astronomy began.

"Fortunately my father and mother believed in education and did everything to send me to one of the

best schools in town. That made my life easy and gave me as a 13-year-old boy the belief that I could be an astronomer."

Medupe and his two brothers grew up in a house without electricity. Their father was a clerk and their mother stayed at home. Despite the hardship, he was sent to Mmbabatho High School, a multiracial, semi-private school and one of the best schools in town. "The school had very good mathematics teachers, computer labs and science labs."

During the time that Halley's Comet was visible in South Africa, his school had a whole week where

all the subjects covered astronomy. "That triggered an interest in me. I went to the library almost every afternoon and read as much about astronomy as I could, even if I didn't understand it!"

"The town had a really nice library with plenty of the latest books on various subjects." From one of these library books he learned how to build a rudimentary telescope with cardboard and lenses. At night he would set up his telescope to gaze at the moon and the stars. This attracted attention from the other children in the neighbourhood, but young Thebe was very protective of



his telescope and did not let anyone else near it.

"The other children in the village thought that I was crazy and weird," Medupe chuckles.

In matric he entered a Science Olympiad and was the winner of his region. Consequently, he travelled to London where he visited Cambridge University and saw places Isaac Newton used to go. At Greenwich observatory he saw a working observatory for the first time. "This experience was a real eye-opener and only made me more determined to be a scientist."

After lecturing at UCT for five years, Medupe decided to return to Mafikeng to try to get more African students involved in astronomy through the National Astrophysics and Space Science Programme (NASSP).

Medupe says that the Apartheid education system, which was completely Western and neglected anything African, gave the impression that Africans did not have a fascination with astronomy. "This doesn't make sense, because everywhere else, in South America, Asia, Europe, and so on people have been inspired by the stars in exactly the same way."

#### Cosmic Africa

In 2002 Medupe was the presenter of the film *Cosmic Africa*, made by Craig and Damon Foster (makers of the award winning film *The Great Dance*). The film follows Medupe as he travels to different communities in Africa listening to their stories about the stars and sharing his scientific knowledge of the stars with them.

"My involvement in *Cosmic Africa* was a way for me to show how African people related to the stars. In that way I wanted to add a chapter to

the world's astronomy history by bringing Africa's ancient astronomy to the public.

"If our ancestors were interested in astronomy there is no reason why astronomy should not form part of our African culture today."

The Setswana, Medupe's own culture, have many stories about the cosmos. According to the Setswana there is a big giant crocodile that eats the sun in the evening and spits it out in the morning. The Setswana have their own name for the stars we call the Southern Cross: the Giraffe stars, because the stars reminded them of the way giraffes move through the trees.

He spent a week with the Bushmen in Northern Namibia around the time of an eclipse. Bushmen are very afraid of an eclipse and believe it happens when a lion wraps its tail around the sun. The filmmakers wanted to see how the Bushmen would react to the eclipse – but they made a big mistake.

"The Bushmen were worried how we knew about the eclipse three days before it happened. They thought we were sorcerers of some kind that created the eclipse! We explained to them how we thought an eclipse is created and some of them understood it," Medupe says.

"Meeting the Dogon people of Mali was like travelling 400 years back in time," he says. "They pray to the stars in the morning when they wake up and also mention the stars in their prayers."

The Dogon have a diviner who draws a map of the stars on the sand. When a jackal walks on this sand the diviner is said to be able to tell the future from the paw prints on the map.

They also visited stone alignments in Egypt dating back over 7000

years ago. That is a time before ancient Egypt, when the Sahara was not a desert but had seasonal rains. These stone alignments were like a stone calendar that used the sun to determine the solar solstices.

#### Other projects

Medupe is also a founding director of Astronomy Africa, a company that combines tourism with astronomy training. "We go to game parks at night giving public talks to visitors and show them the stars through telescopes. It is quite fun to see places like the Kruger Park," Medupe says. According to their website Astronomy Africa also do telescope installation and the construction of observatories.

Another project he worked on for five years was to analyse the Timbuktu manuscripts that contained writings on astronomy. Timbuktu, a town in the West African country of Mali, used to be a Mecca for trade and scholarship in the 15th and 16th centuries.

Hundreds of thousands of manuscripts, by Arab scholars from this time period and later, about subjects as diverse as astronomy, mathematics and biology have survived in the many libraries in the town. Medupe found two interesting books that described models of the solar system, which could accurately determine time and calendar.

MEDUPE TYPICALLY heads to his office in Mafikeng at about 09:00 to start sifting through his research. He specializes in star variability, which involves using a branch of physics called fluid dynamics to determine the structure and composition of stars.

"Star variability is caused by waves travelling inside a star. The waves are not stable in a periodic way, but go up and down." Stars emit different kind of waves. There are the visible wavelengths (the light you can see), there are shorter wavelengths, like x-ray and gamma-ray and there are longer wavelengths like infrared and radiowaves. Most of the radiation emitted from normal stars is in the visible wavelengths.

"Longer wavelengths are produced by cooler material such as gas and dust and shorter wavelengths are produced by very hot material."

Medupe explains that the speed of soundwaves is also sensitive to the conditions through which the wave is travelling. "If we can somehow measure the speed of sound in a star we can reconstruct how the temperature, the pressure and the composition of the star changes in a star.

"It is a very powerful technique, because when you look at a star through a telescope you only see the very thin outer layer of a star. It is like seeing the skin of an apple and not being able to access the inside of the apple."

Due to all the light and air pollution in the cities, most of the professional telescopes have been moved to a remote place outside Sutherland with a very a high altitude. Medupe often travels to the Southern African Large Telescope (SALT) outside Sutherland to do his research.

He travels a lot overseas as well

to collaborate with scientist across the world. He spent one year of his doctoral studies in Denmark and has collaborated with Danish researchers on various projects ever since. He recently went back to Denmark for a month of research.

"WHAT I REALLY like about astronomy is the questions it asks and how it tries to come up with answers for these questions." One of these questions is: 'Where do we come from?' "The answer is beautiful," Medupe says.

"When you take a sample of my skin and analyse it you will find carbon, hydrogen, oxygen and nitrogen. Except for hydrogen, which was created during the Big Bang all the other chemicals were created in the hearts of stars. Really we are stars' children. Without stars we would not be."

THE OTHER question is: 'What will happen to us?' "Five billion years from now the sun will run out of hydrogen in its centre and it will swell up and engulf the earth. If humans beings do not by then know how to live in other parts outside our solar system, we will be doomed."

Are we alone? Medupe thinks we are probably not alone. "I'm motivated in saying that, because in the last six years astronomers have discovered more than a thousand planets around other stars. I cannot believe that the Earth is the only planet of its kind in the universe. There is a good possibility that there are living things out there.

What is cutting edge in astronomy?

"The most exciting development in the last 5 years has been Mars," he says. Five years ago the European space commission detected methane gas in the atmosphere of Mars. "On earth methane gas is usually emitted by animals or volcanoes," Medupe explains. The question is now whether Mars is volcanically active or if it is not, whether living things could have created the methane. "There is a possibility of life beneath the soil of Mars."

The nature of dark matter is another hot topic in astronomy at the moment, according to Medupe. "The matter we can see in the universe only accounts for 4% of the entire universe. We know the dark matter is there because of its effect on other things, but we want to know what form dark matter takes.

"Is it exotic particles? That is particles that are sensitive to gravity but somehow invisible.

"Or is it just a lot of dead stars? Or could it be that the laws of physics are not the same across the universe? That they change depending on how far you look in the universe?"

Is it difficult to become an astronomer?

Medupe says to become a professional astronomer or astrophysicist you must have a PhD and you have to be trained in computer programming.

"If you love it, it is not hard work at all!

"I love what I do. Even if I were to lose my job I would still do astronomy in my spare time. I feel very lucky that I get paid to do something I consider a hobby." ■



# Pick a Number

By Christopher Udemans

South African prisons are a breeding ground for violent gangs. But how do members on the outside get by.



Araminta de Clermont

**W**illie Afrika sits propped up against a short white wall. He wears a clean pink shirt and ocean-blue jeans; well dressed for a homeless man. His face speaks of a hard life, one dominated by violence and fear. Wrinkles radiate from his stern blue eyes, terminating at his temples.

He looks around attentively, carefully surveying his surroundings. The smell of urine punctuates the air. "I don't want this life," he says.

Willie has a girlfriend and a young son whom he sees once a week. They live on a wine farm on the outskirts of Cape Town. He speaks proudly of his son but laments the fact that he has to sell drugs to support him. "I'm not

a stealing man. You see, I sell ganja. The ganja makes us food."

However, this is not the aspect of his life that troubles him most. His primary concern lies with his affiliations.

WILLIE JOINED the Numbers Gang when he was nineteen, the same year that marked the thirteenth anniversary of his mother's death. He had been in Pollsmoor Prison when a gang member approached him.

The renowned South African prison gang has three divisions –or kampe –the 26s, 27s and 28s. Membership is reserved for those who are approved by all three. Willie had been approached by a 27.

"All the guys in 26 must say make

him a 27, all the guys in 27 must say make him a 27, all the guys in 28 must say make him a 27. You see, the whole people must say so," says Willie. "Peoples join for protection. And respect."

He ruminates about his stints in prison, recalling the cramped living conditions. "There is 80 peoples in a cell," he says, pointing out the imaginary dimensions of the room he is picturing in his mind.

The space he allocates is no larger than that of a medium sized living room.

"There is maybe only 20 beds," he says. "Ndotas\* sit on the floor. Peoples that is high up get the beds."

Individuals in the three kampe

are organised by rank. One rank is distinguished from another by way of goonyas, tattoos which function much like the stars on the epaulettes of an officer in the army. The more goonyas a prisoner has, the higher up they are in the pecking order.

Willie scratches his scar-ridden arm. Mounds of scar tissue mark his otherwise smooth skin. They highlight a story, providing vivid images into a difficult and unknown past.

"Every day in jail you see blood. People hit other people. People stab other people and fight other peoples with sloots\*\*. In the shower there is always fighting."

He looks down, examining the

cracks in the pavement. His silence is broken by a voice. It is deep. A male. It sounds much like Willie's, only older.

"Give me the dagga. How much is a quarter?" asks the voice.

"20 rand," replies Willie.

He hands the man what looks like a ball of newspaper.

"What is this?" the nameless figure asks.

"A quarter" replies Willie.

"Why must I pay R20?" the voice asks with disdain.

"Ok give me a 20 and I'll give you a 5," says Willie.

The man is introduced as Anton October. He wears a dirty white Nike shirt and baggy blue jeans. The jeans have holes at the knees. He looks older than Willie. Open sores surround his mouth and his right cheek is marked with a deep scar. He looks menacing. But his voice injects softness into his demeanour.

"This is my brother," says Willie. "I call him my brother because he's also a 27. He was the first of us to become an ndota. How long was your first sentence again?"

"Six years," says Anton, "but I want to delete that part of my past.

I went to prison for housebreaking. More than half of my life I have been in jail. When I was 12 I went to a reformatory. I grew up behind the bars."

Anton looks at the Numbers Gang with different eyes from his friend. To him it serves a purpose. It is a litmus test for masculinity.

"You see, an African guy - he must go to the bush and get a cut if he get to be ndota, a big man, a growing up man. A white man, they must go to the army, if they come back, they are a man. And where do coloureds go? A coloured must go to the jail. Then he can be a man."

The two gangsters start speaking of their first experiences in the gang. A young ndota is assigned a blackboard, or teacher. He guides the recruit in the ways of the Number and functions as a human exemplar.

"It's like a school," says Willie. "You come into the 27s and you get a man that gives you school everyday. He teach you, he's the main man."

Anton nods in agreement. "If you go to the army, there is someone that train you. It's just like that," he says.

Willie looks up and spots a man in the distance. The figure indicates

that he is interested in Willie's wares. "Wag" shouts Willie, indicating for the man to halt. He searches a dirty winter coat next to him and pulls out a piece of crumpled newspaper. Carefully, he opens it up, revealing a large amount of marijuana. He takes out a small quantity and wraps it in newspaper before running off to his customer.

Anton starts speaking again. "You know, a place like Pollsmoor there is no women. There are only men."

He hesitates.

"If someone gonna act small than everybody is gonna make him small. If you act big, everybody is going to respect you."

Silence.

The topic of prison rape is a contentious one. Longtime leader of the 28s, John Mongrel, openly supported the idea of having a wyfie or male wife in prison. In an interview with Ross Kemp, host of the television series Ross Kemp on Gangs, Mongrel stated that he chooses a new sex slave every few weeks. When Kemp asked, "What if they refuse?" Mongrel looked at him and stated unflinchingly, "I kill them."

WILLIE RETURNS after making

a sale that will help to feed his girlfriend and son. He sits back down with a sigh.

"I don't want to sell ganja. I like to draw. I like to paint." He begins to explain that he is a talented artist but he has never tried to sell anything that he has created. He hasn't painted for over ten years.

Anton speaks. "From the time I was at school I tell myself, me, I want to be a lawyer. Or a doctor. But now me, I was not making finish my school."

He shakes his head. A shadow disappointment spreads across his face.

Looking up he says, "So how can I get that dream now?"

The conversation starts winding down. Both men decide that they are too old to change their stars. They have made their decisions. Now they have to deal with them. Add to that the strict exit policy of the Numbers gang.

Anton speaks for the last time.

"There is one way in, no way out." If you want to go out, you must die." ■

**NAMES HAVE BEEN CHANGED**

**\*ndota: a man initiated into the Number**

**\*\*sloot: blade**



# Sweet Dreams

By Francois Badenhorst

Neuroscientists are beginning to understand what is happening in our brains while we slumber. What they discover could profoundly change how we view sleep and dreaming.



Arc-Light

**I**n Hans Christian Andersen's famous fairy tale, Ole-Luk-Oie – or, the Sandman as we Anglophones would call him – appears to a boy named Hjalmar. "Now pay attention," says Ole-Luk-Oie to Hjalmar, "and I will decorate the room." Ole-Luk-

Oie transforms the child's room into a greenhouse, pot plants become trees with their branches covered in flowers.

Sleep, and dreams for that matter, has always been excellent fodder for storytelling: Everyone – knight or

knave, pope or peasant – needs it. It is a universally relatable phenomenon. But Stories like Ole-Luk-Oie also exhibit that we have always had a very limited understanding of an act we spend one-third of our life engaging in.

What is sleep? Or, more specifically, what exactly is going on when we sleep? That's actually a tricky question. What Scientists are absolutely sure of is that we need it and if we don't get it, we experience a variety of consequences.



"Sleep deprivation does have visible, physical consequences," says Dr Henk Badenhorst, a Cape Town based neurologist, "but the main symptom is we see that people enter an almost psychotic condition: They hallucinate and become confused and, extreme cases, can die."

But before you can even attempt to unravel the mystery of sleep, it's pertinent to distinguish between the two stages of sleep we experience. There are two varieties: Slow Wave Sleep (SWS) and Rapid Eye Movement (REM) sleep. And they are rather different.

"There are a ton of differences: Firstly, there is a general decrease in overall brain utilization of oxygen and glucose during SWS," says Dr Robert Stickgold, director of Harvard University's Centre for Sleep and Cognition. "In REM some regions associated with emotional processing ramp back up, while others involved in logical reasoning and executive function become even less active."

Electroencephalography (EEG) patterns, which measures brain activity, look fairly normal during REM. But during Slow Wave Sleep they show a dramatic slowing, showing a more meandering wave pattern – hence, "slow wave" sleep, or, "deep sleep" as it is popularly known.

BUT IT is how the brain seems to interact with information during the different stages which is the most interesting. "Information appears to flow from the cortex into the hippocampus, the seat of episodic memory, during REM, and in the opposite direction during SWS."

Episodic memory is the memory of autobiographical events – times, places, and the associated emotions. This opposite flow of information point to the critical role sleep plays in memory formation and storage. We can begin to understand why a lack of sleep causes such confusion.

"It seems to us that conscious experience of the here and now has to be interrupted for the brain to gain the chance to integrate new and old memories; sleep provides that respite," wrote Dr Giulio Tononi, a psychiatrist at the University of Wisconsin, in a recent article for Scientific American.

"THE BRAIN works with electricity but at the points where brain cells communicate with each other, at the

connection points," says Badenhorst. "The electrical impulse gets put over into chemical impulse by a synapse."

It is around these synapses – our brain's telegraph poles that permit our brain cells, or neurons, to communicate with one another – where an exciting debate is taking place.

"It is thought that dreams, and sleep more generally, act through synaptic strengthening, improving the connections between nerve cells," says Stickgold. Neuroscientists are able to detect the molecular processes that facilitate synaptic strengthening.

But the issue with arguing for just synaptic strengthening comes down to a problem of energy. The brain is not a perpetual motion machine; it uses external energy – lots of energy. The brain consumes almost 20 percent of our energy budget. The problem with the theory of synaptic strengthening is that stronger synapses consume more energy. But if the body has only finite energy stores, and synapses are strengthened ad infinitum, how are we achieving this?

"There is likely to be both strengthening and weakening of synapses during different sleep phases," says Professor Terry Sejnowski, head of neurobiology at the Salk Institute for Biological Studies. "But there are no direct measurements yet to confirm this," he adds carefully.

It seems clear, however, that this strain on resources is unsustainable. As Tononi writes, "The brain cannot go on strengthening and maintaining revved-up synapses both day and night for the whole of an individual's lifetime." This implies that during sleep, synapses are strengthened and weakened.

And how this occurs seems to be encoded into our dreams.

SIGMUND FREUD had very particular ideas about dreams. For Freud, dreams were wish fulfilment. More importantly, things in the dream had a totemic significance: An elongated object would be symbolic of the penis, or a box was the womb.

Dreams altered memories – that is, the penis became an elongated object – to cater for decreased ability of the pre-conscious, our neural policeman, to suppress them during sleep.

"There's no evidence that dreams develop to keep memories from coming into our awareness during sleep, disguising and censoring their most 'objectionable' content," says Stickgold.

"David Lynch was in a war with Hitler, and he handed over the plan to enter the city with tanks to me – and I was thinking should I hand it over or should I keep it because it was a painting by David Lynch." Rickie Klingler is lying on her bed as she relates her dream. Her starkly blue eyes stare at the ceiling as she tries to tease the details from her mind.

"In the end, I did not hand it over and I went driving with you," she suddenly looks at me, "and we we're driving in my hometown and we wanted to go to the harbour and at a fork in the road but you just drove straight and we crashed. And then I was floating in space looking down on Earth."

While Rickie's dream sounds like a Freudian wonderland of neuroses. The Freudian notion of dreams communicate a hidden meaning disguised in symbolic language has become entrenched in popular psychology, and as Stickgold says, "there is scant empirical evidence to support this view."

Freudian dream theory's coup de grâce came in 1977, when Harvard University psychiatrists John Allan Hobson and Robert McCarley presented the activation-synthesis hypothesis.

"The key tenet of Hobson's distinctly anti-Freudian theory was that dreams originate from neural signals in the brainstem generated during REM sleep," wrote Stickgold in an article entitled *Dreaming and offline memory processing*. "Dreaming is experienced when the sleeping brain attempts to make some sense of this chaotic input into its higher-level cortical circuitry."

Neuroscience has come along leaps and bounds since 1977, specifically in regards to memory. "There is now substantial empirical evidence to suggest that, during sleep, the neural level 'replay' of recent experience plays a critical role in the consolidation and evolution of memory," writes Stickgold, "helping us to process our past experiences and prepare for future events." Basically, our brain processes our

short term memories during slumber and tries to discern which need to be transferred to long term memory to form schemas for future use.

In light of this, Rickie's dream suddenly doesn't seem so bizarre (or, at least, less bizarre). Her dream contains David Lynch, a filmmaker she has met and admires; her hometown of Karlsruhe, Germany; and me, a person she has gotten to know recently.

"Dreams seem to take elements of recent memories and blend them with a large collection of older, weakly associated memories," says Stickgold. "I presume that this serves to both strengthen the individual memories and to also establish, or strengthen, the associations among them."

And tests seem to show the value dreams, and not only sleep, have for the consolidation of memory. A test at the Centre for Sleep and Cognition at Harvard University let students navigate a 3-D virtual maze in the morning. Some subjects were permitted a 90 minute nap – the length of one full sleep cycle.

Sleeping subjects were awoken twice during their naps to collect dream reports. Critically, the napping subjects that dreamt exhibited a sudden uptick in performance of one minute when they completed the task in the late afternoon.

"Just 33 years or so after Hobson and McCarley's speculation, firm scientific evidence confirms that, for at least this one memory task, sleep enhances subjects' memories of what they recently learned," says Stickgold, "but only if they dream about it."

THE SCIENCE does not demean the psychological or emotional value of sleep. Critically, dreaming does not only process and strengthen memories but, as Stickgold says, "also aid in extracting their meaning".

Their essentiality in forming new memories actually makes them more meaningful. Your dreams aren't just Freudian totems, the embodiments of some hidden guilty pleasure. Instead, they are your brains attempt to understand our vast existence.

Meaningful experiences create dreams and dreams create meaning. ■

# Traditional Circumcision: A Cut Too Deep

By Fhumalani Justice Khumela

In spite of continuous government effort, the number of deaths due to the consequences of traditional circumcision remains high - with no sign of improvement any time soon.



Max Thinks Sees

For many African boys, manhood is achieved through circumcision. But it must not be just any circumcision, it must be done the traditional way. While cultures like the Tshivenda, Sesotho, Tsonga and Ndebele do not discriminate against boys who choose to get circumcised clinically, for Xhosa people it remains a huge issue.

Within the Xhosa community, circumcision is still profoundly regarded as the ceremonial transition to manhood. Boys who chose clinical circumcision are frowned upon and considered to be less of a man. As the numbers of traditional circumcision deaths continue to rise, some are opting for the safer alternative and even questioning the validity of traditional circumcision.

"I know of about four boys who have died in the mountains [initiation schools] in my area," Tshebeletso Madolo, a 19-year-old from Cala village, Eastern Cape, says.

A year ago, Madolo together with his parents made the conscious deci-

sion that he would rather get circumcised in a hospital than risk his life and health by going to an initiation school. Madolo says he values his culture but refuses to subject himself to the poor health conditions of those schools.

"Growing up, you are told you will only become a man after you get circumcised in the mountains," he explains. "As much as I would have loved to do it, it is becoming more and more dangerous and unhealthy. The only reason people still do it is because they are afraid of being considered cowards or wimps. I prefer being called names than put my life at stake through those conditions."

Madolo says that while he has not yet suffered any form of discrimination he would not be bothered by it.

Munthu Langa, 18, from Indwe, 40 kms away from Cala, got traditionally circumcised this year. Langa, unlike Madolo, states that his culture and tradition mean a lot to him. Despite some incidences that have taken place to other boys during their ini-

tiations, he is glad he did it.

"I am happy that I can now classify myself as a man," Lunga says. "There are harsh conditions there [mountains] but it is the path to manhood and I am proud that I made it. When I was there I was not afraid at any point of time, we were told that a man must be able to handle the pain."

"I am glad that I don't have to walk in the neighbourhood with people calling me a coward. All the people who didn't go the mountains will always be subjected to criticism, I didn't want to be part of them," he added.

Traditional circumcision is usually performed in a non-clinical setting by a traditional provider (surgeon). The procedure is done without pain killers or antibiotics, with the foreskins cut by surgical blades by traditional surgeons.

These surgeons have no formal medical training. The health conditions of initiation schools are very poor and have been criticised for being life threatening.

Dr Tsumbedzo Badugela, a medical doctor at the Department of Health Kimberly Hospital Complex, says that the general set-up of initiation schools is fatal, mentioning that infections are the biggest concern for the initiates.

"Patients get infections which complicate because of the sepsis they are exposed to in the areas [mountains] where the procedures are done. When the boys sit unsterilized for days, the unfortunately complicate."

"The biggest issue is that, in contrast to clinical circumcision, when boys get infected in initiation schools they cannot get treatment. The whole system is based on "manning up" and completing the whole three weeks despite any complications."

Oscar Mawaza, a Traditional surgeon from Gugulethu, Cape Town, has been performing circumcisions for 17 years and claims there has never been any death at his school. Mawaza has blamed the high deaths in the country on new initiation schools that have very little knowl-



Sea Turtle

edge into conducting the circumcisions.

"Initiation schools are popping up like it's a fashion thing," Mawaza says. "Nowadays, no one starts initiation schools because they care about the boys. It has become a business, and this business is destroying lives because these people are not detected."

Mawaza says these days anyone can easily become an initiator or start an initiation school. He identified the profits that can be made from the schools as a catalyst for bad practices.

"Some initiation schools are bringing in more than R100 000 in profits," he says. "This is ridiculous when you consider that at one point initiation was done freely. Yes the time has changed and we all do charge, but some are charging lots of money and also taking in large numbers of boys to increase profits."

"It is like capitalists have taken over the system. People are just exploiting a system that government can't really control, there are many loopholes and people are using them

to make money from it."

According to the National Department of Health, a majority of circumcision deaths mainly occur in the Eastern Cape and Western Cape amongst the Xhosa people. Mandiso Tau, a former Sesotho healer, has blamed the deaths on the nutrition the new generation takes.

"The food the boys eat these days is not healthy. Their bodies are too weak for the mountains," Tau explained. "The young boys these days eat junk food, drink too much alcohol and are sexually active at a very young age. That contributes to weak bodies."

"Back in the old days boys in their age worked hard, ate well and didn't indulge into sexually behaviour. These new boys are weak, their bodies cannot handle the conditions in the mountains. This is sad because traditional circumcision could possibly die out due to these high death rates."

Tau closed his circumcision school three years back after his school stopped attracting initiates. He

blamed this on new initiation schools that were driven by political and royal family connected people that started commercialising initiations schools.

"It's absurd, people are now advertising initiation schools. Initiation schools were never meant to be advertised, every family knew which school or schools they would like to take their children to even from a very young age. These days people put up advertisement and lobby for customers. These people are the ones killing young boys. They drive fancy German cars because they are running good business."

THE GOVERNMENT has found it hard to fully handle and regulate traditional circumcision. There have, however, been improved laws and there continues to be new policies into improving the general safety of traditional circumcision.

Over the years, a number of laws have been put into place, among them is the Children's Act of 2005 – that makes it unlawful to circumcise children under the age of 16. A 2009

ruling on a case by a young Xhosa boy who was forcibly circumcised, ruled that it is unlawful to circumcise someone without their full consent.

Current new laws being looked into include charging parents who do not take proper care of their children when they come back from initiation schools.

Despite government intervention, there are still reports of deaths and forced circumcisions.

Since the United Nations report backing findings that circumcision lowers risk of contracting HIV, the Government Health Department has identified circumcision as another key mechanism in fighting the HIV epidemic.

Both the President and the Minister of Health have criticised initiation deaths. As the government continues to try and find better regulations of traditional circumcision, realistically, even with all the laws in place, the conditions in the mountains are challenging meaning that even legitimate and good traditional surgeons can still have deaths on their hands. ■