



HIGH HOLIDAYS

Yom Kippur Day/Yizkor

The Power of Remembering:

What Can Piano Tuners And London Taxi Drivers Teach Us About Yizkor?

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THE POWER OF REMEMBERING: WHAT CAN PIANO TUNERS AND LONDON TAXI DRIVERS TEACH US ABOUT

ABSTRACT

Remembering plays a prominent role in Judaism in general and specifically on Yom Kippur. In addition to remembering our loved ones during the Yizkor service, Yom Kippur prayers are replete with invoking memory: The entire Seder Avodah recollects and remembers in detail the order of the High Priest's Yom Kippur Temple service. The story of Ten Martyrs begins with two words: *eila ezkara*, "these I recall." This haunting liturgy concludes with *z'chor lanu brit*, "remember in our behalf the covenant..."

Why is remembering so important? What does it truly accomplish? And how does it tie into the holiest day of the year?

We can find the answer in a most unlikely source... piano tuners and taxi drivers. Scientists have documented how drivers' and tuners brains have been dramatically reshaped and transformed through their memories.

These observations can teach us how memory can change everything, how Yizkor can reshape our lives, and how remembering on Yom Kippur will surely seal us in the Book of Life.

1. A Time to be Silent?

One of the most difficult times to speak is on this holiest day of the year: Yom Kippur. I always associated this awesome day with silence. The priests in the Holy Temple would serve in silence. How much more so on Yom Kippur, the epitome of the High Priest's divine service in the Temple.

Just imagine the scene of the High Priest entering, only once a year, the Holy of Holies; a place where the Divine presence was revealed; a place so refined that it could not tolerate even one blemish; a place where space met beyond space. For seven days the High Priest sanctified himself in order to enter the holiest place on earth on the holiest day of the year.

Nothing but silence – like the pure white of Yom Kippur – seems to be the proper way to serve on this day

And yet, a few words are often necessary to convey even this power of silence. So I pray that my words will indeed help us all express the inexpressible, and experience the place where words meet the wordless.

Indeed, a significant part of the Yom Kippur prayers is about recollecting and recreating, with words¹, events that happened in Biblical times, in the times of the Temple and throughout history.

2. A Yom Kippur To Remember

Remembering plays a prominent role in Judaism in general and specifically on Yom Kippur.

In addition to remembering our loved ones during the Yizkor service (Yizkor means “remember”), Yom Kippur prayers are replete with invoking memory: The entire Seder Avodah recollects and remembers in detail the order of the High Priest’s Yom Kippur Temple service. The story of Ten Martyrs begins with two words: *eila ezkara*, “these I recall.” This haunting liturgy concludes with *zechor lanu brit*, “remember in our behalf the covenant...”

Why is remembering so important? Should we not be focused more on shaping the present and future than remembering and dwelling on the past?

What does remembering truly accomplish? And how does it tie into the holiest day of the year?

Another interesting thing to note is that *zachor* (*zayin, chof, resh*), the Hebrew word for “remember,” consists of the same letters which pronounce the word “male” in Hebrew. How does masculinity relate to memory?

3. Cab Drivers and Tuners

We can find the answer in a most unlikely source. That source is – please don’t laugh: taxi drivers and piano tuners.

I know that it may sound strange, but as divine providence would have it, I recently saw two scientific studies that reveal fascinating insights about the power of memory and remembering, by showing how cab drivers and piano tuners brains have been dramatically reshaped and transformed through their memories.

¹ See Hosea 14: 3 (Haftorah of Shabbat Shuva): and let us render [for] bulls [the offering of] our lips.

These studies teach us how memory can change everything, how Yizkor can reshape our lives, and how remembering on Yom Kippur will surely seal us in the Book of Life.

4. A Taxing Memory

[Note: Much of this section is optional. It provides more details than you probably need. So you can feel free to use whatever parts you wish. The optional section is marked below].

Here are some specifics.

One of the most difficult tests, according to many, is the one to become a certified taxi driver of London's famed black cabs. Scientists have documented how, in the process of studying for this exam, the drivers' brains have formed and developed in incredible ways.

Scientific American published an article in 2011² under the following headline and subhead.

Cache Cab: Taxi Drivers' Brains Grow to Navigate London's Streets

Memorizing 25,000 city streets balloons the hippocampus, but cabbies may pay a hidden fare in cognitive skills

The article opens:

Manhattan's midtown streets are arranged in a user-friendly grid. In Paris 20 administrative districts, or arrondissements, form a clockwise spiral around the Seine. But London? A map of its streets looks more like a tangle of yarn that a preschooler glued to construction paper than a metropolis designed with architectural foresight. Yet London's taxi drivers navigate the smoggy snarl with ease, instantaneously calculating the swiftest route between any two points.

These navigational demands stimulate brain development, concludes a study five years in the making. With the new research, scientists can definitively say that London taxi drivers not only have larger-than-average memory centers in their brains, but also that their intensive training is responsible for the growth.

² <https://www.scientificamerican.com/article/london-taxi-memory/>. National Geographic also did a short documentary on this.

[Optional]

This intensive training, known simply as “The Knowledge,” was well-documented in a 2014 *New York Times* T Section article³, entitled, **The Knowledge, London’s Legendary Taxi-Driver Test, Puts Up a Fight in the Age of GPS.**

The teasing subhead goes: *The examination to become a London cabbie is possibly the most difficult test in the world — demanding years of study to memorize the labyrinthine city’s 25,000 streets and any business or landmark on them. As GPS and Uber imperil this tradition, is there an argument for learning as an end in itself?*

The article follows one Matt McCabe, who...

...had spent the last three years of his life thinking about London’s roads and landmarks, and how to navigate between them. In the process, he had logged more than 50,000 miles on motorbike and on foot, the equivalent of two circumnavigations of the Earth, nearly all within inner London’s dozen boroughs and the City of London financial district. He was studying to be a London taxi driver, devoting himself full-time to the challenge that would earn him a cabbie’s “green badge” and put him behind the wheel of one of the city’s famous boxy black taxis.

Actually, “challenge” isn’t quite the word for the trial a London cabbie endures to gain his qualification. It has been called the hardest test, of any kind, in the world. Its rigors have been likened to those required to earn a degree in law or medicine. It is without question a unique intellectual, psychological and physical ordeal, demanding unnumbered thousands of hours of immersive study, as would-be cabbies undertake the task of committing to memory the entirety of London, and demonstrating that mastery through a progressively more difficult sequence of oral examinations — a process which, on average, takes four years to complete, and for some, much longer than that. The guidebook issued to prospective cabbies by London Taxi and Private Hire (LTPH), which oversees the test, summarizes the task like this:

To achieve the required standard to be licensed as an “All London” taxi driver you will need a thorough knowledge, primarily, of the area within a six-mile radius of Charing Cross. You will need to know: all the streets; housing estates; parks and open spaces; government offices and departments; financial and commercial centres; diplomatic premises; town halls; registry offices; hospitals; places of worship; sports stadiums and leisure centres; airline offices; stations; hotels; clubs; theatres; cinemas; museums; art galleries; schools; colleges and universities; police stations and headquarters buildings; civil, criminal and coroner’s courts; prisons; and places of interest to tourists. In fact, anywhere a taxi passenger might ask to be taken.

³ <https://www.nytimes.com/2014/11/10/t-magazine/london-taxi-test-knowledge.html>.

If anything, this description understates the case. The six-mile radius from Charing Cross, the putative center-point of London marked by an equestrian statue of King Charles I, takes in some 25,000 streets. London cabbies need to know all of those streets, and how to drive them — the direction they run, which are one-way, which are dead ends, where to enter and exit traffic circles, and so on. But cabbies also need to know everything on the streets. Examiners may ask a would-be cabbie to identify the location of any restaurant in London. Any pub, any shop, any landmark, no matter how small or obscure — all are fair game. Test-takers have been asked to name the whereabouts of flower stands, of laundromats, of commemorative plaques. One taxi driver told me that he was asked the location of a statue, just a foot tall, depicting two mice sharing a piece of cheese. It's on the facade of a building in Philpot Lane, on the corner of Eastcheap, not far from London Bridge.

[End of optional section]

As the researchers have demonstrated, the brain literally gets remapped and reshaped by this arduous, mind-expanding process. As the *Scientific American* article concludes:

Neurobiologist Howard Eichenbaum of Boston University commends the study... He sees it as confirmation of the idea that cognitive exercise produces physical changes in the brain. “The initial findings could have been explained by a correlation, that people with big hippocampi become taxi drivers,” he says. “But it turns out it really was the training process that caused the growth in the brain. It shows you can produce profound changes in the brain with training. That’s a big deal.”

Memory, specifically memorizing and recalling some 25,000 streets and all the relevant landmarks on them, changes the brain itself.

5. iTunes

Tuning pianos are quite similar. In an article titled, **TUNING A PIANO ‘MOULDS THE MIND’⁴**, the BBC notes:

Researchers at University College London and Newcastle University found listening to two notes played simultaneously makes the brain adapt.

Brain scans revealed highly specific changes in the hippocampus, which governs memory and navigation.

These correlated with the number of years tuners had been doing this job.

⁴ <https://www.bbc.co.uk/news/health-19398413>

The Wellcome Trust researchers used magnetic resonance imaging to compare the brains of 19 professional piano tuners - who play two notes simultaneously to make them pitch-perfect - and 19 other people.

What they saw was highly specific changes in both the grey matter - the nerve cells where information processing takes place - and the white matter - the nerve connections - within the brains of the piano tuners.

Investigator Sundeep Teki said: “We already know that musical training can correlate with structural changes, but our group of professionals offered a rare opportunity to examine the ability of the brain to adapt over time to a very specialized form of listening.”

Other researchers have noted similar hippocampal changes in taxi drivers as they build up detailed information needed to find their way around London’s labyrinth of streets.

Prof Tim Griffiths, who led the latest study, published in *Neuroscience*, said: “There has been little work on the role of the hippocampus in auditory analysis.

“Our study is consistent with a form of navigation in pitch space as opposed to the more accepted role in spatial navigation.”

In addition to visual and spatial memory changing one brain, audio and sound memory could also change one’s physical brain.

6. The Song and Navigation of Yom Kippur Prayers

Let’s now apply this to the navigation and songs of prayer of Yom Kippur (and Judaism in general).

The prayers and service of Yom Kippur are a form of song. Many of them are recited with beautiful and solemn tunes. The five prayers of Yom Kippur – Kol Nidrei, Shacharit, Musaf, Mincha and Neilah – each have their particular nusach style, each one containing a variety of many unique different poems and hymns (*piyutim*), each chanted or sung with its respective harmony and melody.

We can also say that the Yom Kippur service is a type of journey – a spiritual voyage through the five levels of our souls, and the five dimensions of the cosmic order – teaching us how to navigate and grow through all these intricate levels, which are certainly more complex than the London labyrinth

Based on the abovementioned studies about the impact of memory on the cab driver and piano tuner, it's therefore no wonder that Yom Kippur (and Judaism in general) places such premium emphasis on remembering – Yizkor, *eila ezkara*, *z'chor lanu brit*.

Remembering isn't simply an exercise in nostalgic reminiscing of the past. It actually connects the past with the present and the future in a way that changes us; it shapes our very minds and beings. Memory, recall, and remembering doesn't just change the way we think, it literally changes the shape of our brain. The same way pumping iron and bench pressing changes the shape of our muscles, memory changes the shape of our grey matter.

The music and journey of Yom Kippur is achieved through remembering. When we pray and sing and recall events in the past; when we recite the Yizkor prayer and remember the souls of our loved ones – we are both remembering them with sound – like the piano tuner, and we are remembering them with mapping and seeing our loved ones – like the taxi driver. Their memory gets etched in our minds, and our brains and personalities literally change in the process.

Like the taxi driver, the immemorial memorial of Yizkor maps our brains and tunes and aligns them toward our purpose here in this world. More than remembering, **our minds are living and becoming one with our spiritual direction and purpose.**

When we *recite* and recall the Seder Avodah, remembering and repeating in intricate detail the order of the High Priest's Yom Kippur Temple service, our brains and psyches literally become shaped by and tuned to that service. More than just remembering, **our minds are living and becoming one with that experience.** As we say at the end of that service: “And so, as You have listened to the prayer of the High Priests in the Sanctuary, so may you hear the prayer of our lips and deliver us.”

When we recite the prayer of the Ten Martyrs, beginning with the two words, *eila ezkara*, “these I recall,” more than recalling **our beings are forever changed as we relive and become one with the experience.** When we say *z'chor lanu brit*, “remember in our behalf the covenant...” more than memory **our beings are becoming the covenant and living the brit.**

7. Zochor – Memory and Male

The mechanism and power of memory from a Torah perspective, is found in the connection between the male archetype and remembering – both comprised of the same Hebrew letters (*zayin, chof, resh*). The mystics explain that the reason for this is because on a spiritual level masculine energy is related to memory.

The Talmud⁵ states: *Zachor v'Shamor b'dibbur echad ne'emar* – “Remember” and “observe” [the Shabbat] were said in one utterance. This is referring to the two expressions used in the Ten Commandments for observing Shabbat. In the book of Exodus the word used is *zachor*, remember. In the book of Deuteronomy the word used is *shamor*, protect. And the Talmud is telling us that these two expressions were said on one utterance.

What is the significance of this? Explains the Alter Rebbe:⁶ Memory is associated with masculine energy, which like memory transmits and draws down energy from a higher supra-conscious (or unconscious) source into the conscious mind.

Remembering a loved one or a covenant is drawing down the energy of that higher experience into our minds and permanently aligning and mapping our brains accordingly.

Shamor is associated with feminine energy, which protects and nurtures. The masculine transmits and provides the seed. Once it fertilizes the female egg, the feminine carries and protects the fetus to maturity, until it's ready to leave the womb as an independent life.

And *b'dibbur echad ne'emar* – the male *Zachor*/memory and female *Shamor*/nurturing “were said in one utterance” – they join together simultaneously as one, because only by being “one” can a child be born. The masculine memory draws down the energy, and the protective feminine nurtures and protects it – together they create life, reshaping existence and tuning the mind to the divine music.

When we recite Yizkor on Yom Kippur, we remember and draw down the spirits and souls of our loved ones, from the infinite unconscious into the tangible conscious. And all year round we protect, nurture and cultivate that memory to birth life in this world.

8. Navigating Life's Roads: GPS Less, Remember More, Navigate More

We live in a very complex world. The paths one can walk are as numerous as the pitfalls; the directions one can go are as diverse as the directives one can follow. How to navigate the complicated landscape, how to fine-tune the highly sensitive instrument of life?

Yom Kippur's memories offer us the answer.

The London cab drivers and the piano tuners of the world teach us the power of memory in navigating and attuning our lives.

⁵ Rosh Hashana 27a.

⁶ See Mamarei Admur Hazaken, 5669 p. 161. Likkutei Torah Shlach, 45b; 47c.

Today, on Yom Kippur, the holiest day of the year, right before Yizkor, when we remember our loved ones, when we recollect what was, what is, and what will be, they help drive a very memorable point home.

As the New York Times article reported, these cab drivers remind us that GPS and Uber will not imperil the tradition of training our minds and reshaping our brains through painstaking memory and mapping. The argument could be made that the navigational challenges of today's day and age are precisely sourced in the automation of life. If everything is calculated for me I don't have to make calculations, which leaves me on a path not my own and thus a path without memory.

As we pray this Yom Kippur and as we enter the Yizkor service, remember that life is not about automating our lives and experiences, placing our minds and brains on autopilot; but, like those London cab drivers and piano tuners, it's about remembering more and mapping and remapping our brains, etching the memories of the past into our minds and psyches, attuning and aligning us with the memories of generations, of our parents, grandparents, great grandparents all the way back to our earliest ancestors, Abraham and Sarah and Adam and Eve.

As we recite Yizkor and remember those who died sanctifying G-d's holy Name, and those who lived sanctifying G-d's holy Name, more than remembering, our brains internalize their sanctification, our minds are living models of their holiness.

That is the power of memory. That is the power of Yizkor. That is the power of Yom Kippur.

And when we remember, when we live, surely G-d Al-mighty will remember and seal us in the Book of Life.

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