

# God, brains and hearts

The dating scene for religious singles is strained by unwritten rules and social pressure to marry. **Judy Siegel-Itzkovich** reports on a book written by a researcher looking for the neurological and even genetic factors behind falling in love

It happens hundreds of times a day – mostly in the afternoons and evenings – in hotel lobbies, on park benches and at other public places. If you're not in the know, you won't even catch on. It's the phenomenon of blind dates among somewhat nervous young modern Orthodox (and many haredi) men and women interested in getting married. They are absolute strangers except that they have probably spoken a few times on the phone in preparation for their first meeting, or were briefed on the potential marriage partner by relatives, friends, rabbis or matchmakers who suggested the "shidduch."

Unlike secular, traditional and even some religious Jews who follow less-rigorous practices, members of this sector do not "pick up" others or get picked up at parties, bars or on the street, and the aim is not having fun or going to bed. Everybody participating in this dating game – in their late teens, early 20s and sometimes beyond – is serious about getting to the *huppa* as soon as possible.

It is said that 40 days before birth, God decides whom the person will eventually marry (*bashert*). Making matches is also said to be as difficult as splitting the Red Sea.

What psychological, social and even biological influences affect a decision to commit one's life to a stranger after a relatively short period, without first even physically touching the other or being alone in the same room?

Although this phenomenon has been chronicled in a top-rated *Srugim* (Crocheted Kippa) TV series on YES, it took a 27-year-old, strikingly beautiful but still-unmarried Orthodox woman doing a master's degree in brain research to examine it through personal interviews and studies of neurotransmitters and hormones.

RACHEL LANGFORD, who graduated from a Petah Tikva *ulpana* (high school for religious girls) and now lives with her family in Bnei Brak, has produced a 138-page Hebrew book on the subject.

Titled *Darush: Nasich Al Sus Lavan (Wanted: A Knight in Shining Armor)* and available at [www.rachelilangford.com](http://www.rachelilangford.com), it offers the blind-date experiences of 11 single observant women and the author – out of 34 such women plus secular ones and religious men from around Israel. These are interspersed with chapters about research on how the brain influences such choices. Langford did not include the ultra-Orthodox (haredi Jews), but she did interview young religious women from a wide variety of backgrounds, schools and styles, from Bnei Akiva to Ezra youth movements.

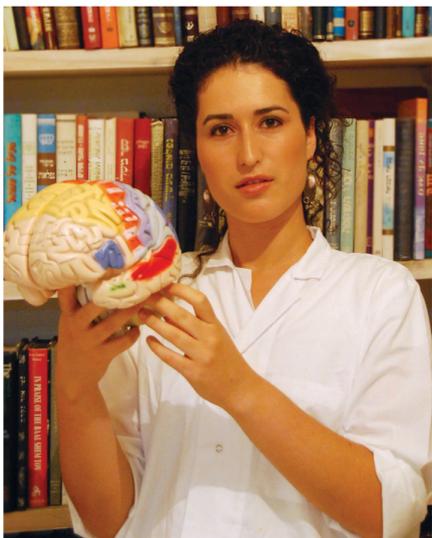
The author, a student at the Hebrew University-Hadassah Medical School who is researching potential stem-cell treatment of mice and chick embryos damaged by alcohol and narcotics, has an interesting background herself. She comes from the showbiz and artistic Langford family. Her grandfather Barry was a BBC and Israeli TV director; her father Jeremy a *ba'al teshuva* (returnee to Orthodox Judaism) and glass artist; her mother Yael a chemistry graduate who became a brainwave enthusiast; and her aunt Caroline an actress and former wife of actor and director Assi Dayan.

Rachel (known to friends as Racheli), had a more conventional childhood as a religious girl who loved horseriding.

She concedes in an interview with *The Jerusalem Post* that the religious dating scene can be quite superficial. Numerous young observant women will automatically turn down a suggested match if the prospective partner wears his *tzitzit* out of his trousers (or not); has a beard (or not); wears jeans; is shorter than her; wears sandals with socks (or without); lives in the settlements (or not) wears a large (or too-small) crocheted kippa; is more than a couple of years older; studies in yeshiva (or not); has served in the Israel Defense Forces (or not); or has a car and apartment of his own (or not).

Many young religious men will turn down a suggested wife if she is not wealthy and shapely; has a car or apartment (or not); is left wing (or not); will wear the "right" head cover after marriage; has sleeves and hemline that are "too short"; or if she is older than him. The mind boggles.

There are some different criteria among haredim, she says, but they usually require only a very few meetings before they decide to marry, and some –



RACHEL LANGFORD recalls going on a date on horseback, but 'I didn't hear heavenly music when I looked at him, and no heart-shaped pink stars sparkled in my head.' Her book is pictured below. (Courtesy)

especially hassidim – won't see each other again until the wedding.

She begins the book with a scene in an *ulpana* in which the news spreads that an 11th-grade pupil has gotten engaged. This is openly discouraged by the principal and teachers, as girls are not supposed to date until after graduation, even after national service. But the fact that the girl will soon be married – and quickly pregnant – gives the 17-year-old automatic prestige, she writes. "How romantic!" her girlfriends swoon.

ONLY THE first dating story can be attributed to Langford, even though she presents all of them in the first person without pseudonyms. She met a young man named Meir, a horse lover like herself, and chatted with him while on horseback, she in an appropriate skirt (for modesty) rather than riding breeches; as a result, all she got was bruised thighs. "I didn't hear heavenly music when I looked at him, and no heart-shaped pink stars sparkled in my head..." she recalls in the book.

Langford has a wonderful sense of humor and a talent for detail when she describes a woman's date with a young man who disappears from their park bench when she looks in the other direction for a split second. She searches for him for quite a while, thinking he couldn't stand her. Finally, she finds him sitting under the leaves of a tree. Embarrassed, he explains that a big dog had come near; since his brother had been savaged by a dog, he is traumatized by them.

In another dating escapade, the young man insists on walking kilometers to a "perfect place to talk," but the girl gets bogged down in an dirt path that suddenly turns to mud; because of the rules against touching, he does not extend his hand to pull her out, and her clothes and limbs become filthy.

Young observant Jews are usually given books on dating written by rabbis and other experts. But, like one young man who insists on accompanying an "unsuitable date" to her bus stop even when she doesn't want him to, "there are cases in which they learn the protocol but don't understand it," Langford comments.

Langford, who has gone on "several dozen" dates over the years since competing her national service, complains about the heavy social pressure to marry as soon as possible. "I discovered that social pressure comes not just from outside, but also from the brain," she says, getting to the pure science part of the story.

When a woman smells a baby's head or skin, her brain is affected by a pheromone – a chemical signal that triggers a natural response. "Her brain tells her she wants to become a mother." Some perfumes contain ylang ylang, which affects the brain and can ignite an emotional connection.

In a chapter of the book, she also notes that when a young woman is at the acme of her menstrual

cycle – when she is ovulating – she becomes very critical of other females so as to overcome "competition" from them.

She quotes studies showing that when you walk into a party where there are several attractive men or women, your brain registers your attraction for each one. Romantic love can activate brain activity with a high concentration of receptors for neurotransmitters like dopamine, which is linked to euphoria, addiction and craving, or norepinephrine, which is connected to sleeplessness, hyperactivity, heightened attention and goal-oriented behavior. Brain scientists have compared brain scans taken of people in various emotional states and found significant differences.

Beware: A surge in dopamine can make you be unable to think logically for a while. Functional magnetic resonance instruments (fMRI scans) can't actually read people's minds, but they *can* display emotional complexity, the author notes. There are even genetic influences, she says.

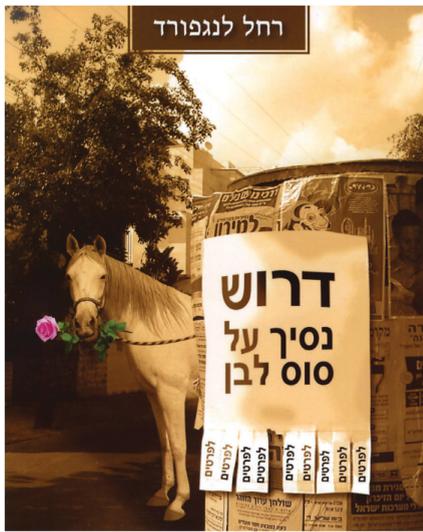
LANGFORD NOTES that according to Canadian studies released last year, belief in God can "help block anxiety and minimize stress," but plenty of stress remains for observant daters. None of the 11 personal stories presented married any of their dates, and many of those involved found their experiences uncomfortable. "One of my points was to stress that it is vital for people to improve communications skills, including non-verbal ones," she says.

The author found that if she runs alongside a potential mate, she feels better toward him than when she doesn't; the endorphins released by exercise are apparently involved. If the young man's eyes face upwards, "his brain is in a visual phase." If she does the same, Langford maintains, "this can improve communications. This has been researched."

If one has gone out for a few weeks but feels the relationship has no future, Langford advises being polite but telling the truth. "Don't ask why and don't argue," she advises.

She bemoans the fact that with increasing religiosity, there are a dwindling number of places where eligible religious men and women can meet. Many little boys and girls are separated in kindergartens, she says, although she says it is preferable if they do not study in the same schools from intermediate through high school. If one doesn't find "the one" in a youth movement (many of whose branches are now sex segregated), one needs other places in one's 20s. There is a Jerusalem synagogue that periodically offers Torah lectures for men and women sitting on different sides of the aisles without a physical divider, she says, and this should be copied.

Langford concludes the book with this sentence (in Hebrew): "Let us choose our way to chose a mate." Young people should not be pressured and should want a *shidduch* out of free will. There are people who go out only to avoid the social pressure, not really to get married. I say that only the person himself or herself knows what is good for him or her."



## Israeli study: 'Climate change didn't trigger agricultural revolution'

NEW WORLDS

• By JUDY SIEGEL-ITZKOVICH

Scientists have long believed that dramatic climate changes were responsible for the ancient Near East's Agricultural Revolution, about 8,500 BCE, in which new domesticated crops were introduced to feed the region's population. But a new study by researchers at the Hebrew University's Levi Eshkol School of Agriculture argues that farming and the introduction of new crops relies on a relatively stable climate.

Dr. Shahal Abbo and colleagues recently published their findings in the Springer journal, *Vegetation History and Archeobotany*.

Basing their argument on evolutionary, ecological, genetic and agronomic considerations, the HU researchers show why climate change is not the likely cause of plant domestication in the area. Rather, the variety of crops in the Near East was chosen to function within the normal east Mediterranean rainfall pattern, in which good rainy years create enough surplus to sustain farming communities during drought years.

The team found that farming requires a relatively stable climate and therefore is not a sustainable option in times of climatic deterioration. "We argue against climate change being the origin of Near Eastern agriculture, and believe that a slow but real climatic change is unlikely to induce revolutionary cultural changes," they concluded.

### BETTER SAMPLING FOR SIGNALS

A new invention developed by researchers at the Technion Institute has the potential for improving the performance of radar, increasing the capacity of audio recorders, reducing patient exposure time to dangerous radiation and numerous other applications. The innovation, described as an "international breakthrough in sampling technology," is the building of an electric card prototype that enables the sampling of broadband signals using an especially low sampling rate. It is arousing great interest among scientists.

The researchers say it can improve the sampling, recording and processing capabilities of wideband signals by hundreds of percentages. The Technion has already registered a number of patents on the discovery and expects returns, as the world's sampling market is worth billions of dollars a year.

"In digital devices, a physical signal is stored using a series of bits. For example, music on a computer is represented by a series of numbers," explains electrical engineering Prof. Yonina Eldar, who worked on the project with her doctoral student Moshe Mishali. "Of course, the ear cannot hear numbers," she adds. "This is where the sampling and reconstruction process comes in. The goal of the sampling stage is to convert a physical signal into a series of zeros and ones. The digital 'tape' samples the audible signal and translates it into bits. The key in this stage is to perform the conversion in such a way that the true underlying signal can later be recovered.

We are all used to saying: "I saw a film of HDTV quality" or "I heard music from the digital player," adds Mishali. "We forget that humans are capable of sensing, seeing and hearing only physical signals. In the interface between the digital and analog worlds, there is a component that samples the physical signal and reconstructs it at the end of the process into the physical world that the human system can absorb."

Existing wideband samplers typically require extensive and sophisticated hardware and software to accommodate wideband signals and produce high digital data rates. But the researchers say they built a sampler based on cheap hardware whose manufacturing and computational costs would be very low and whose performance is much better.

During their work on complex mathematical formulas, the two researchers succeeded in "breaking" the basic limit established at the beginning of the previous century by the Nyquist-Shannon sampling theorem. According to this theorem, if you sample a signal at a rate that is twice the maximum frequency of the signal, it would be possible to reconstruct the signal exactly by using appropriate processing. This theorem forms the basis for most digital devices today. Since it is desirable to use these devices in the broadest possible band, it is necessary to increase the signal sampling rate. Technological ability today limits the maximum rate at which it is possible to sample and as a result, this requires large storage capacity and a high price.

The breakthrough was achieved by using the fact that there is no broadcasting in parts of the spectrum. "The idea is to use the 'holes' in the spectrum wisely in order to significantly lower the sampling rate without damaging the signal," says Eldar. "The difficulty lies in the fact that since we don't know where in the spectrum these holes are placed, traditional mathematical models can no longer be used to characterize and manipulate such signals. What we were able to prove is that the mere fact that we know the signal does not occupy the entire spectrum enables us to reduce the sampling rate."

## BGU medical historian seeks 1940s irradiation victims in US



RINGWORM INFECTION: It used to be considered so terrible that children had to undergo radiation to destroy the fungus.

Ben-Gurion University medical historian Prof. Shifra Schwartz has an odd mission – to find Jewish adults, now in their 60s and beyond, who as children in the US underwent low-grade radiation treatments for the skin disease

known as ringworm. Schwartz, on BGU's faculty of Health Sciences' Prywes Center for Medical Education, is writing a book about victims of this procedure, in the early decades of the 20th century considered the "state-of-the-art" treatment for this condition. Ringworm usually infected the scalps of its victims; radiation was used to remove the hair with the root to eliminate the disease. The treatment was meant to minimize the pain the children were put through, because radiation made the hair fall out rather than having to pull it out or shave it closely. This treatment did not involve medical negligence, she insists. What doctors did not know then was that such radiation could cause thyroid cancer and various other types of tumors and other medical problems decades afterwards.

Radiation treatment for ringworm was widespread during Israel's early years, says Schwartz, especially among Sephardi children from North Africa. When the dangers were realized, Israelis who took ill as a result regarded it as a matter of ethnic discrimination and emotional trauma, like arriving in the

### HEALTH SCAN

• By JUDY SIEGEL-ITZKOVICH

country and immediately getting sprayed with DDT. Even recently, the Knesset has dealt with related issues such as compensation for damage and suffering.

But the BGU historian insists the decision to radiate was not ethnically based: An American Jewish health insurance service named OSE radiated the heads of 27,000 Ashkenazi Jewish children who arrived in New York from Eastern Europe during the 1920s and 1930s. In the 1940s, about 4,500 Ashkenazi children who arrived were found to have ringworm, and about 2,500 were treated with radiation by OSE.

But no records were kept of those who received treatment, so those who have survived all these years probably don't know they are at high risk for possible consequences, Schwartz has informed *The Jerusalem Post*. Although research into ringworm treatment of this group has been conducted at New York University, the doctors who treat these Jews probably

have no idea of their high risk for illness; some may have never heard of the skin disease or the standard treatment given so long ago, before an oral pill or liquid named Griseofulvin – effective in treating ringworm of the scalp – was put on the market in the late 1950s. Schwartz disclosed that special schools for immigrant children with ringworm were set up in New York so they could learn but not spread the disorder.

Schwartz is studying the effects of ringworm irradiation on children around the world, including Portugal (30,000 were treated in the early 1950s), Serbia (50,000) and Eastern Europe (27,000). She says children underwent radiation treatment throughout the US, thus the story is a universal one that should be investigated not only for historical reasons but also to follow up the possible victims.

The historian notes that unlike the US health authorities, the Health Ministry here issued instructions to all doctors to ask patients over 65 who have problems in their heads and necks whether they underwent radiation for ringworm in their youths. However, there was a

special department in Washington, DC that has documents showing that ringworm was quite common in this era in various parts of the country.

After news of Schwartz's research was published in Serbia, hundreds of calls were received from people who as children had undergone radiation. In Portugal, a doctor who noticed a rise in thyroid cancer among his elderly patients investigated and found all had undergone radiation for the skin fungus.

Schwartz says she is looking for ringworm radiation victims from New York in the 1940 not because she can offer medical services but so they will finally be aware of the potential danger to their health and seek appropriate treatment. Their testimony will also contribute to documenting the story in her book and archival material. In addition, the data will enable her to prove that radiation of the heads of newly arrived Sephardi immigrant children was not ethnic discrimination.

Anyone with information can contact the Beersheba researcher at [shvarts@bgumail.bgu.ac.il](mailto:shvarts@bgumail.bgu.ac.il).