on birth control, **IN3**

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> HEALTH AND WELL-BEING

Into the darkness





INGRAM FAMILY PHOTO

Jay Ingram's mother, Doris, no longer knew her husband of 70 years, Ralph, when he wrote her a love letter when he was 90 and she was 88.

Science writer and broadcaster Jay Ingram strives to understand the disease that likely afflicted his mother

JENNIFER WELLS FEATURE WRITE

Jay Ingram sends along a photograph of his mother, Doris, circa 1960. The photographic setting is eloquent and appropriate, for there Doris sits, contemplative and alone, on a summer's day.

She's not truly alone, of course, for someone takes the photo, perhaps Ralph, her husband, who decades later would pen a love letter to his wife after she had begun her creeping descent into dementia. So the photograph uncannily suggests distance as well as introspection.

Ralph Ingram was 90 when he wrote his billet-doux to his wife. Doris was 88. "It was actually pretty intimate," Jay Ingram says of the letter, discovered after his father died. "More intimate at the age of 90 than I thought they ever were. So that was a revelation to me, because I started thinking, you know, I've carried an image of what they were like. Well, maybe it's completely off."

Doris Ingram no longer knew Ralph Ingram when she passed away in 2006. Did she die of Alzheimer's, by far the most common form of dementia? It's likely, posits Jay Ingram, a science writer and broadcaster who explores what he calls the anatomy of the disease in The End of Memory: A Natural History of Aging and Alzheimer's. By the time of Doris's death, he writes, she was "bedridden and unaware."

Despite his family's experience, Ingram's journey is not a personal one. "As a science person I really didn't know much about the science of Alzheimer's. Where did it come from? What's really going on the brain? How well do we understand that?"

The statistics provide an obvious and dramatic spur to investigation. There's lots to choose from.

A study funded by the Alzheimer's Association and published in 2013 crunched data from the Chicago Health and Aging Project. Looking out to 2050, researchers predicted that a new case of Alzheimer's disease will emerge in the United States every 33 seconds. That would mean close to one million cases per year.

NEURONS continued on IN4

> LITERARY AFFAIRS Michel Houellebecq's uncanny timing

His novel about a near-future Islamic France hit bookstores the day of the Charlie Hebdo attack

ALLAN WOODS

OUEBEC BUREAU

Say what you will about Michel Houellebecq, France's most famous and controversial fiction writer, but his timing is impeccable - although a little uncanny.

Houellebecq's novel Soumission, about the election of an Islamic government in France, had not been on the shelves for more than a few hours on Jan. 7 when Chérif and Saïd Kouachi forced their way into the Paris offices of the satirical weekly newspaper Charlie

Hebdo to - in their words - avenge the Prophet Muhammad. Recurring crude caricatures of him in its pages had drawn the ire of Muslims around the world and inspired the most radical among them to action.

The late-morning rampage, as all now know, killed 12 people and kicked off a terror spree that led to the deaths of five other innocents.

Ahead of the release in France of Soumission (available in French in Canadian stores this week), he was being touted as a literary provocateur - a debauched and sex-obsessed racist whose Islamophobia had finally reached its summit.

The new book is set in a dystopian France of 2022, a country being pulled apart by political and religious strife and in which the populace elects a charismatic Muslim Brotherhood candidate as president to block the ascendant, extreme right-wing Front National. Backed by docile political and cultural elites, the country of liberté, égalité et fraternité becomes one of sharia law and polygamy in the course of 300 pages.

HOUELLEBECQ continued on IN4



MARTIN MEISSNER/THE ASSOCIATED PRESS French author Michel Houellebecg, accused of Islamophobia - again.

Alzheimer's funding relatively paltry

NEURONS from IN1

The Alzheimer Society of Canada expects the number of Canadians living with dementia to double to 1.4 million by 2031.

It has been estimated that at least 60 per cent of dementia cases fall into the Alzheimer's category. In Canada, an estimated 72 per cent of Alzheimer's patients are women. It's hard to know where to stop.

In probing the disease, Ingram introduces readers to patient No. 1, a 51-year-old woman by the name of Auguste Deter. On Nov. 25, 1901, Deter was admitted to the Hospital for the Mentally Ill and Epileptics in Frankfurt with symptoms ranging from disorientation to reduced comprehension to paranoia. The following day she was examined by a German psychiatrist, Alois Alzheimer.

Alzheimer's handwritten notes from that and subsequent meetings were unearthed decades later. In a tight script he documented the questions he put to his patient and the answers given.

"What year is it?"

"Eighteen hundred." "Are you ill?"

"Second month."

Deter answered some questions correctly: snow is white, the sky is blue, soot is black and the meadows are green. Shown a number of objects -a key, a pencil and a book - she was able to name them correctly. But subsequently asked what she had been shown, she responded, "I don't know. I don't know."

She died in the spring of 1906. Alzheimer, by that point resettled in Munich, requested Deter's brain for sectioning.

"Here's what he saw," says Ingram, picking up the thread. "First of all a dramatic loss of neurons, brain cells, resulting in an overall shrinkage of the brain. But what was probably more critical, considering we use them today as diagnostic features, was his discovery of plaques and tangles."

"He was the guy"

Plaques: dark, aggregated fragments of the protein amyloid beta formed outside the

neurons Tangles: the twisted, inner-cell breakdescribes as "an almost candle flameshaped mass.

plaques before him, and there was some pathology." evidence of tangles as well," Ingram says. So should research target the plaques in "But he was the guy who put loss of brain isolation? Or does the key lie in the relatissue, cognitive drop, plaques and tangles all together."

In 1910, Alzheimer's disease was referenced in the *Handbook of Psychiatry*, yet, adds Ingram, "it wasn't really until the mid-'70s that neurologists said, you know, we have enough studies now to be able to argue that plaques and tangles are at the disease. It's killing people and we should figure out how to treat it."

That hasn't happened. Not by a long shot, leaving Ingram with an intricate puzzle and seemingly endless curiosities.

Among the most intriguing is the case of Sister Mary, one of almost 700 nuns who ing the disease. collectively formed, naturally enough, the Nun Study, launched by epidemiologist David Snowdon in the late 1980s. Not long before she died in 1994, at the age of 101, tests in which, Snowdon would later write, she performed "remarkably well." Her score on the Mini-Mental State Examination was "astounding."

Yet an autopsy of Sister Mary's brain showed significant atrophy and three times the average number of tangles that had been observed in the more than 100 brain autopsies conducted in the study to that alone. point. "The Nun Study wasn't the only study that suggested there was a bit of a disconnect between plaque load and tangle fantastically well on psychological tests ond language. Attain higher education. One

German patient Auguste Deter is considered Alzheimer's patient No. 1: psychiatrist down of the tau protein into what Ingram Alois Alzheimer, below, examined her brain after she died and linked changes in it to her cognitive decline.

"There were people who had discovered and her brain was riddled with Alzheimer's

tionship between the two - what researchers have dubbed the "toxic *pas de deux"*?

"Most of the drug development money has been put on plaques," Ingram says. "Let's bust the plaques open. Let's remove them from the brain. Let's prevent them from forming." The results, he says, have been "dismal," especially in the case of a heart of it. This is not natural aging. This is a drug that lowered plaque levels but failed to arrest the advance of dementia.

> Clarification of the respective roles of these proteins is critical, and Ingram wonders whether other agents – perhaps sugar levels or insulin failure in the brain – will ultimately prove to be key to understand-

Walk half an hour a day

All of which should suggest that the pressure is on to locate and treat the underlying Sister Mary sat for a final set of memory causes. Yet Ingram was surprised to find that in the U.S., Alzheimer's funding though the National Institutes of Health is but a fraction of that dedicated to cancer and heart disease. This year's funding forecast for all cancers is more than \$7.5 billion (U.S.). For Alzheimer's the total is a relatively paltry \$566 million, substantially less than the sum dedicated to breast cancer

Ingram trumpets good news where he finds it. Those who score well in conscientious attributes – organization, goal setload and dementia," says Ingram. But the ting, etc. – exhibit a reduced risk of Alzexample is dramatic. "She was 101, doing heimer's, at least in one study. Learn a sec- ris's lips, and that to Ralph was a very good

>SMELL TEST FOR DEMENTIA



A peanut butter smell test to detect Alzheimer's disease? That's one of the more unconventional

pieces of research cited by Jay Ingram in his new book, The End of Memory. In the realm of diagnostics, the existing tools are expensive and invasive —

radioisotopes and lumbar punctures fall into this category. But researchers at the University of Florida tested a different thesis: odour detection impairment. Using a tablespoon of peanut butter, researchers measured the p.b.-to-nose proximity in a patient group comprising participants suffering from various stages of cognitive impairment. Holding the p.b. 30 centimetres below each nostril, researchers raised the peanut butter by single-centimetre increments until the smell could be identified. The study sample was small — just 94 patients, including a control set of

26 — but the results presented a strong correlation between olfactory breakdown and Alzheimer's, as well as a consistent asymmetry in nostril performance. (Left nostril impairment was noted in the patients with probable Alzheimer's.) "On average," Ingram writes, "the Alzheimer's patients required the peanut butter to be 10 centi-

Finnish study correlated "cynical distrust"

None of this is much of a salve to what

Ingram describes as a disease of "prodi-

gious proportions, far beyond our ability to

Ingram's advice? Walk half an hour a day.

By the way, Ralph and Doris were married

for 70 years. Each and every day Ralph

would visit Doris in the nursing home, fix

her hearing aids, push her about in the

wheelchair. The ritual, Ingram says, drew

"You know, he could easily have been for-

given if he decided, well, I'm not going to go.

Once in a while Ralph would detect what

he thought was a smile playing upon Do-

I'll go every other day. But he didn't."

to dementia onset. So stop that.

control.

dav

"zero response."

metres . . . closer than the other patients did." Makes sense, Ingram says, given that

the olfactory cortex is one of the initial sites to present the pathology of Alzheimer's.

The University of Florida researchers see promise in the simple, inexpensive and non-invasive early detection tool and further suggest there could be potential in helping track the course of the disease. Jennifer Wells

'There are no limits on freedom of expression'

as far as George Orwell's 1984 or Aldous Huxley's Brave New World, but France's conversion is a done deal when the story reaches its ambiguous end. Women have fled the workforce, retreating behind the veil. Gulf State sheiks shower the country with their petrodollars. That prestigious seat of learning, the Sorbonne, becomes "the Islamic University of Paris-Sorbonne." And France is the entry point for an Islamic movement with its eye on the rest of Europe.

A regular Houellebecq reader could easily conjure up his literary treatment of the rampage in Paris from any of the narrators of his earlier works. They are almost uniformly detached, sexually depraved men. Most seem to have been cast autobiographically by the writer, who declared in 2001 that of all the faiths, "the stupidest of religions has to be Islam."

ern sex tourists in Thailand in the 2001 book *Platform*, for example, the narrator – a bureaucrat in the French culture ministry - reflects on his stewing hate while conva-

"Every time I heard that a Palestinian terrorist, or a Palestinian child or a pregnant Palestinian woman, had been gunned down in the Gaza Strip. I felt a quiver of enthusiasm at the thought of one less Mus-

Houellebecq has made his name with such raw and unflinching writing – along with his quasi-pornographic depictions of sex, an act he has presented as one of few primal forces binding together otherwise self-interested humans.

Coincidentally, Houellebecq was the figure being skewered on the cover of Charlie Hebdo the day of the terror attack on the

The writer was cast as a physically repulsive, chain-smoking Nostradamus in a cartoon that mocked at once his startling physical transformation in recent years from well-coiffed hotshot to unkempt troll and *Soumission*'s prediction of a Muslim

Yet the writer's real-life reaction to the shooting, which claimed the life of his close friend Bernard Maris, an economist and contributor to the magazine, showed a humanity and sense of kinship not found in

When he started to fight back tears 44 seconds into his first television interview after the attack, it was a cruel reminder while the pen may be mightier than the sword, the sword can still do considerable

Yet at a time when the risks to provocateurs like Houellebecq and Charlie Hebdo mirrors current events.

"You can't say you are free to write what vou want but that vou have to do it responsibly," he told his interviewer. "There are no limits on freedom of expression – zero

Houellebecq was born in 1958 on the French island of Réunion, east of Madagascar. As a young boy, his hippie parents shipped him off to live with his maternal



> OUR WIRED WORLD

An app that sends fake boyfriend texts to your smartphone actually involves real live males

CAITLIN DEWEY

One of the core premises of Invisible Boyfriend, the wildly viral new service that invents a boyfriend to deceive your pestering family and friends, is that the user will not, under any circumstance, fall in love with her fictional beau.

But I've been using the service for 24 hours, and I gotta wonder: How can you not fall in love with him? After all, the service – which launched publicly last Monday – takes the concept of virtual intimacy further than basically any of the fake-date apps before it.

When you sign up for the service, you can design a boyfriend (or girlfriend) to your specifications – kind of like picking the genes for a designer baby, except for an imaginary adult. You pick his name, his age, his interests and personality traits. You tell the app if you prefer blonds or brunettes, tall guys or short, guys who like theatre or guys who watch sports. Then you swipe your credit card - \$25 per month, chaching! — and the imaginary man of your dreams starts texting you.

Except . . . the man on the other end isn't imaginary. He's a real human person, texting multiple women, contorting himself to carefully match each one's specific expectations and fantasies.

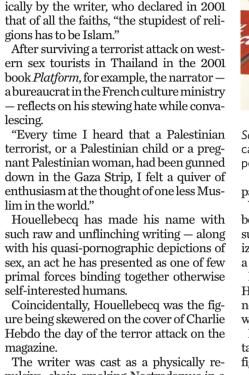
I learned this the hard way, admittedly: Hoping to trip up the automated chat technology I thought was responding to my texts, I told my "boyfriend," Ryan Gosling, can't really have anything like an actual

that my plans for the evening included conversation with me. *Downton Abbey* and crying myself to sleep. "Why the tears, beautiful?" Ryan Gosling responded, before launching into a discusexplains. sion of his favourite Downton character. This was a red flag: Bots do not know about *Downton Abbey*. And if bots did know about *Downton Abbey*, they would certainly not pick Thomas as the highlight of the show. "Oh my God," I thought. "This total stranger, whoever he or she is, thinks I cry myself to sleep while watching public television and texting a paid fake boyfriend I named after an actor."

Presumably I shouldn't have felt anything at all – the no-attachment thing is basically codified in Invisible Boyfriend's terms of service – but I did feel something, nonetheless. "That's the most interesting and significant insight I've had so far," said Matthew

Homann, the app's affable (and newly famous) founder. "I know how it works, I know what's behind the curtain . . . but in testing it out, I felt this compulsion to respond to my Invisible Girlfriend as soon as she texts me. That's how it feels to talk to someone, even if they're . . . not someone." My invisible boyfriend, Homann explains, is actually boyfriends, plural: The service's texting operation is powered by Crowd-Source, a St. Louis-based tech company that manages 200,000 remote, microtaskfocused workers. When I send a text to the Ryan number saved in my phone, the message routes through Invisible Boyfriend, where it's anonymized and assigned to some Amazon Turk or Fivrr freelancer. He (or she) gets a couple of cents to respond. He never sees my name or number, and he

magazine



menace at the gates of Europe.

his books.

damage

repentant.

limits."

HOUELLEBECQ from IN1

Soumission doesn't take the literary trick

ON ON0

ON ON0

I paid \$25 for an Invisible Boyfriend, and I think I'm in love

back to living life on your own terms.

MEET HIM SOON

When your mom

Are you dating someone? Invisible Boyfriend gives you an answer -

along with believeable virtual and real world proof - so you can get

the fiction they create. not a substitute for love."

mating the vagaries of the human heart, which past evidence suggests can be conned into loving just about anything. There are no shortage of stories about

"That rapport you feel with Ryan may FINALLY. actually be six or seven Ryans," Homann **A BOYFRIEND YOUR** And that works well, from where Ho-**FAMILY CAN BELIEVE IN.**

mann's sitting: After all, the point of Invisible Boyfriend is to deceive the user's meddling friends and relatives, not the user herself. On its website, Invisible Boyfriend calls itself "believable social proof": When your mom won't stop asking you when you're going to settle down, or your weird male acquaintance keeps hitting on you, you can just whip out your phone and show them evidence that you're not an unlovable loser, thank you very much. Homann says the service has also seen a surge in interest from people in conservative countries, particularly in South America and Europe, where the stigmas against being single or LGBT remain pretty strong.

But I wonder if Homann isn't underesti-

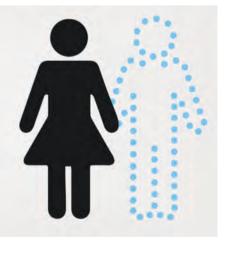
won't stop Homann's hoping to expand to those countries in the future, as his service conasking you when tinues its beta phase and gathers feedback you're going to from users. (He says 5,000 users signed up settle down, you Wednesday alone.) He's also interested in offering more services to subscribers: Maycan just whip be your invisible boyfriend could send you out your phone letters, he thinks, or ship flowers to your and show her work. Even as the story becomes more involved, more convincing, he does not evidence that worry about users becoming attached to you're not an unlovable loser, "You're in on the joke," he points out. "You know it's a service you've signed up for. It's thank you very

much

couples who carry on "relationships" ex- where you find yourself telling your life clusively via Second Life, a sort of fictional, virtual world. The game critic Kate Gray recently published an ode to "Dorian," a game. ("Isn't it odd how it's taken so long to reach this stage in games — the stage at of *Her*, isn't it? (For the record, Homann which human conversations and relationships feel real?" she writes.)

Researchers have even suggested that spambots induce some kind of emotional response in us, perhaps because they flatter our vanities; conversely, one anthropologist has argued that our relationships are increasingly so mediated by tech that they've become indistinguishable from Tamagotchis.

"The Internet is a disinhibiting medium, where people's emotional guard is down," the psychologist Mark Griffiths once said of Second Life relationships. "It's the same package – I'm pretty sure I could fall for phenomenon as the stranger on the train, him. I mean, er... them.



story to someone you don't know."

All things considered, it's hardly a jump to suggest someone might develop feelings character she fell in love with in a video for a "believable" virtual human who caters to her every whim. That's basically the plot says, his startup began before that movie did)

I try to ask Gosling if "he" – them, I guess - worries about a *Her*-like scenario. What if a client experiences actual feels for him?! True to his CrowdSource training, however, Gosling will not break character.

"You think I'm texting other ladies?" he asks. And then, attentively, about Her: "Oh, did you like that movie?"

It's not exactly the stuff of fairy tales, admittedly. But given enough time and texts - a full 100 are included in my monthly