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# Celebrating inspiring women



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## The phenomenal Mary Kom

INTELLIGENT LIFE, JULY/AUGUST 2012

**A five-times world champion boxer and mother of two, she has had to battle against far more than her opponents in the ring**

**P**LAY, or its Hindi equivalent, *khel*, is the verb Mary Kom uses. She could be referring to a tournament, “when I played national”, her stance, “I play southpaw”, or her weight category, “I must play in 51kg in the Olympics.” But there is something deeper when Kom says it. Childbirth and child-rearing, that is life. Lifting yourself out of poverty, fulfilling the duties of a wife, a daughter, an eldest sister, that is life. Boxing is so much; but still it is play.

She is in the ring right now, and to be ringside when Mary Kom is in action is to feel the kinetic heat of boxing. It is molecular. She is padding against a man whom, a little while ago, in his spectacles, sweater and moustache, I took for a government officer. Now, shorn of the first two, he has transformed himself into a provocateur, a matador. He is baiting Mary, taunting her with words and jabs in the face. When their heads come together, their spit and sweat fall on each other, the blazing whites of their eyes are falling into each other's. Kom is 5ft 2in officially, an inch more in her own estimate, but looks smaller—even more so in her headgear. Small, but taut: a packet of tensile strength.

Her muscles must be on fire. Counting her rounds against the bag, the mirror and the other women at the camp, national- and international-level boxers, she has completed the equivalent of two full-length competition bouts. Those girls were heavier and taller. This is just as well because when women's boxing debuts at the 2012 Olympics, Mary must play taller opponents, who will have a longer

reach. Most of her championship victories have come as a pinweight boxer, 46kg, whereas in London the lightest class, flyweight, is 51kg.

But next to Mary, these other girls were ponderous. Their feet were sluggish, their positioning not so clever. She could fight with her guard down, testing her reflexes by offering them her bare chin as a target, and counter-attacking in angles unfamiliar to boxers who take the orthodox stance.

All around the gym the girls furtively watched her. They covet her low-gravity wound-up springiness, her pure petite explosiveness. They would love to lunge so wide and fast, and never need to wrestle or go to the ropes. Aggression is her hallmark, and it makes her exhilarating to watch.

“*Yeh leh* Mary,” Mr Bhaskar Bhatt goads her, “take this. And this.” This too is the play of boxing.

“He tries to make me angry,” she says later, “but I have to be cool.” Her grimace is hidden by her white gumshield. You can feel her burn; it's been 80 minutes now.

“*Aaja* Mary, *sha-baash*, come Mary, come.” This is a “specific training” session, devoted to feints and combination punches. He's making her chase him, holding up his pad for her to pull out another series of rifling combination punches, which she does with sharp yelp-like breaths.

“Phoom.” That is the sound she wants from a punch. “When it's tak, tak, like that, it is OK, not powerful,” she will say, throwing me ▶▶

► a mock punch. "Phoom! That is powerful."

At last the session is finished. "60%," says Mr Bhatt, bespectacled again, assessing a fortnight's progress. "She has not come into her original yet. Once she does that, when she gets back her automation, no one can stop her. See, Mary never gets puzzled in the ring. She has killer instinct."

To cool off, this 29-year-old mother of two does cartwheels and somersaults in the ring, and looks suddenly adolescent—copper highlights in her hair, fluorescent laces on her shoes. When she lands awkwardly on an ankle that was recently injured, she just giggles. She lies on her stomach to be rubbed down by a physio provided by Olympic Gold Quest, a private non-profit organisation which began funding India's elite athletes in 2007.

The gym is on the premises of an erstwhile palace in Patiala, Punjab, now India's national sports institute. In its grounds the hedges are trim, the trees are labelled with numbers, and the kerb is painted in zebra stripes, but beneath the order it is still India, no country for athletes. Kom will return to shared accommodation in a hostel, where she will boil vegetables with fermented fish on her portable stove, because the mess food can leave her with indigestion. She will hand-wash her clothes, scrubbing the blood off her socks, as there is a single washing machine for an entire hostel of athletes. Two years ago, two female boxers, one a world-championship medalist, were asked to serve tea to visitors and wash up afterwards.

Only one Indian, the rifle shooter Abhinav Bindra, has ever won an individual Olympic gold medal. A chapter in his memoirs is entitled "Mr Indian Official: Thanks for Nothing".

Imphal is a town so removed from the Indian growth story that aspiration is not even visible on its streets. It feels old, not from the presence of history, but from an absence of renewal. A new car is a rarer sight than a jeep of India's security forces, which keep a deployment in the state of Manipur to combat a decades-long insurgency. In matters of infrastructure, government has excused itself altogether.

There is a road in Imphal West, over a kilometre long, flanked on either side by uncultivable wetland. It is a shuddering stretch of stone and dust, with an enormous, open garbage dump at one end. It is officially called Mary Kom Road, but there is no sign to mark the fact, and Mary is glad of it.

She has lived in Manipur all her life. The daughter of landless agricultural labourers, she moved to Imphal in her mid-teens to make something of herself in track and field. Then a Manipuri boxer called Dingko Singh won gold at the Asian Games in Bangkok. Dingko too was poor. When he came back he was received as a hero; on the streets people collected money to give to him. Mary heard that women's boxing had just been introduced in Manipur. She approached the head coach at the Sports Authority of India centre, Ibomcha Singh. He remembers her being so small and young that

he turned her away. At the end of his working day, she was waiting for him at the gate. In the ring, her attitude struck him as "do or die".

The girl would go on to win five world championships. Five in a row, like Borg or Federer at Wimbledon. Two of these five she won after giving birth to twin boys. In a nation bereft of athletic achievement, she ought to be a household name. But most Indians have never heard of her. "Mary kaun?", people say—Mary who? Some can manage a guess at her sport: "Archery, no, wrestling, wait... weightlifting?"

At Delhi airport, as she queues for security, the thousands around her who would stampede at the sight of a cricketer are oblivious to the champion in their midst. Before Beijing, Bindra was similarly anonymous. Then he won gold, and received 380,000 telegrams.

There is a more depressing aspect to this. The Indian consciousness does not extend to a peripheral state out by the Burmese border. The millions unacquainted with Mary would struggle to find Manipur on the map. They might finger India's right ear, but which state exactly is it? What do the people eat, what language do they speak?

And how then are Indians going to appreciate the brilliance of Mary Kom's achievement, to place it in context? In her defiance is an echo of the women of Manipur who waged two Women's Wars against the British in 1904 and 1939. To protest at atrocities by Indian security forces, an activist named Irom Sharmila has been on hunger strike for 11 years, force-fed through a tube, and women of the Meira Paibi ("torch bearers") group once stripped naked outside a military camp in Imphal waving the startling banner "Indian Army Rape Us". Irom Sharmila protests; the women of Manipur run the biggest all-women's market in South Asia; and Mary Kom boxes, fights, plays.

"Sometimes I have to make people stop talking!" Mary laughs and says, though it is a point she often makes without laughter. "When I started, they say boxing is not for girls. After I get married, they say I cannot win after marriage. After I have baby, they say I cannot win after baby. So I want to prove, I want to show that I can make history for India."

We are in her house off Mary Kom Road. She is in a t-shirt and *phanek*, the Manipuri wraparound skirt, watching her four-year-olds run amok in the yard with a toy helicopter, a ladybird and Spiderman action figures, sometimes yelling at them, sometimes smothering them with kisses. The house sits on a concrete plinth, has a concrete gabled front, and concrete walls on which the twins have scribbled so high up that their parents refuse to erase the marks, to "show them how naughty they are". The house, in a colony built for a national games, was given to Mary by the state. It is one of the few in Imphal with 24-hour electricity: the average is below four hours a day.

These perks are needed. To make a living she must rely on state awards (which don't always reach her) and the salary from a sports-quota position with the Manipur police. Offered the designation of constable on winning her first world championship, she declined it. A few years later she accepted the post of sub-inspector, on a monthly salary of 8,500 rupees (£100). Following two promotions and a landmark government pay-scale revision, she still only draws 31,000 rupees a month (£360), a trifle in inflationary times. Since 2009, when she signed up with a talent management firm, Infinity Optimal Solutions, a few modest sponsorship deals have come her way.

Against this are the multimillion-rupee endorsements for cricketers, and the player auctions for the Indian Premier League, where talent more ordinary than hers is bought for £1m for a six-week tournament. This astonishes Mary, and she pauses for thought, totting up the grants, awards and deals through five world championships. "In ten years I have not made total of even one crore (£125,000)."

In the front yard, below the tamarind tree in which little Rengpa and Nainai have managed to entangle their helicopter, is a small room made of bamboo and asbestos. Five girls live in this room, students at the mc (Mangte Chungneijang) Mary Kom Boxing Academy. Meant for poor Manipuri boys and girls, the academy is free.

The sanction of state land has been pending for five years, so it remains what in other parts of the world might be considered an ►►

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▶ anomaly: a boxing academy without a ring. Training in the denuded hills and the field opposite the house, strengthening their bodies on a modest set of donated equipment under a small tin shed in the domestic yard, 21 of the 30-odd students won a medal at the last state championships.

For the girls, especially, Mary is an inspiration; and because she is home for a few days, there is to be a minor presentation ceremony. They will receive training gear. The sports ministry donates these packs, 25 annually. By the time they reach the academy, pilfering has reduced it to about 18.

In her address to her students, Mary is animated, maternal, full of gestures and modulations. Freed from the constraints of English and Hindi, she talks for 25 minutes in Meiteilon, the lingua franca of Manipur. "You are lucky," she tells them. "I can at least go and ask for support for you. Don't ever look back in your life, that you are from a poor family—no. Go ahead in your life, ahead ahead ahead."

Mary's husband Onler manages the academy, along with her career—and, when she is away, their twins, with the help of his mother-in-law. He himself has a bantamweight's physique. The two met in Delhi when Mary was a young athlete struggling on her visits to the big city. Onler, nine years older and then president of the Kom community club in Delhi, took her under his wing, and over time became a combination of mentor, motivator and manager, the man behind the woman.

Like all of Manipur's hill tribes, the Koms, a tiny community, were converted by proselytising British missionaries, who first came to the region in the late 19th century. Both Mary and Onler are devout: "Jesus 100 percent" were the words they once printed on her boxing gown.

At Christmas 2006, returning home from Onler's village in Samu-lamlan Block, they received a series of phone calls and texts, saying that Onler's father had been called out of the house by a group of men, taken a short distance away, and shot in the head at point-blank range. He was a parson and the village chief. There was no demand, no warning, no apparent motive. They had left him only hours earlier, and the mood was festive. The closest Onler can come to making sense of the murder is jealousy: of Mary's success and his marriage to her.

When he recounts the incident, in harrowing detail, it is a journey into the heart of the Manipuri situation of UGs and C-in-Cs, underground groups and their commanders-in-chief. There are some 40 ethnic groups in Manipur, and about as many armed UGs which, though often rivals, together form a kind of parallel government. Two of the boys involved in the murder—there were eyewitnesses in the house—were apprehended by a UG two years later, says Onler, and even confessed in front of journalists. But Onler refused to make a "donation" to the UG; the C-in-C made sure the news was spiked, and the killers roam free.

Shortly after the killing, Onler remembers thinking that "it is better I should leave my family and take the gun and go direct to the people who are doing this. There was a complete darkness in the family. We doesn't want to eat anything, doesn't want to drink, we are just quiet. Mary wanted to give up her glove. I convince her not to."

"If I'm doing well and people are jealous, it is better to give up my glove, no?" Mary asked herself. "If there is another incident, what shall I do?" She was 23 at the time and had just won her third world championship. Her father-in-law had surprised her by supporting a married woman's decision to box for a career, and she never forgot that.

A few weeks after the funeral, Mary felt unwell. At the clinic, the doctor told the couple that she had conceived. "My mind was blowing!" Onler says. "It was something like a miracle. I give up all the dirty thoughts I had for leaving the house." His father too had been a twin.

Less than two years after her father-in-law was murdered, after she considered giving up the game, 15 months after she gave birth to twins by Caesarean section, Mary claimed her fourth world title. She remembers the utter weakness when she returned to training, the aches and pains that still persist four years later, in her knees and especially her back. In order to train, she stopped breastfeeding after a year. Sometimes sourcing Lactogen in Imphal would be difficult when insurgents enforced highway blockades that could

## "One plays football. One does not play boxing."

Joyce Carol Oates,  
"On Boxing"

run for weeks. A blockade in 2011 lasted four months: like many Manipuris, she cooked on a woodfire.

"I have to do it," she told herself during her comeback. "My family is a big family. I'm looking after all of them. My father's family, my sister also, cousin sister also. If we win gold medal, we are getting incentive from the state, the company side, sponsor side. So I tell myself, I can do, I can do, that's it."

The evenings in Manipur, which is far out east but follows Indian Standard Time, arrive absurdly early, and dusk brings a quickening emptiness to the streets of Imphal. The hills facing Mary Kom Road are taller and lovelier in the dark; the pig in her back yard – no pinweight, at least 60kg by Onler's reckoning – is more vocal. If the family ever steps out after dusk it is with "two to three boys or cousins" who are boxers or martial artists. Onler has weapons for self-defence, but the private security officer assigned to them by the Manipur police does not: the state discontinued the practice after some officers let out their guns for hire.

For dinner Mary, the domestic provider, cooks in the Kom style: beef fry, pork with broccoli, fish and roe flavoured with desiccated citrus peels, and boiled mustard leaves. She stands by the table, listening, as a guest, a friend of theirs, says that his new tractor was captured a few hours ago by a UG for "tax collection". Nainai, slung in a shawl, is strapped to Mary's back; Rengpa has exhausted himself to sleep. Mary will eat once her guests have finished, and early in the morning she will train her students in the field across the road.

It is early February, and the season is cold and dry. The fields, the day, are colourless but for the gorgeous phaneks and shawls of girls strolling or bicycling. In the village of Kangethei, in the front yard of the house where Mary grew up, are cacti and fern and croton, and tall bamboo whose lushness betrays the fallow fields. In the rear garden are peas, onion, garlic, mustard, beans, banana. There are two structures in the neatly groomed plot, neither permanent: a front shed of tin, and along one side, living quarters of bamboo and mud.

The roosters are running around, pecking at the grain that Mangte Akham Kom is spreading out to dry. She is a lady of handsome proportion: when she accompanied her daughter on a trip to Myanmar, it was she, not Mary, who found herself encased in a garland. The shock is meeting her husband, Mangte Ton-pa Kom, in the way it is shocking and moving to encounter a parent of the opposite gender so identical to their child. He has Mary's small but uncreasable body, tight and tough, with similar definition on the arms, the same erectness of the back, and the body language of a doer. The bones on their face are alike, as is their expression of reserve – and of great reserves. Ask Akham Kom where Mary gets her fearlessness, and she will point to Tonpa Kom.

"Yes, when I observe her," Tonpa Kom says, "I can see she is very much my blood. After all she is my first daughter." A village wrestling champion and an ace marksman in his youth, Tonpa Kom has been a farmhand since the age of 15.

He is a talkative, interesting man, full of long, precise anecdotes, which come to me translated from the Kom language by Jimmy, a young man who helps Onler manage Mary and the academy. On one aspect, however, Tonpa Kom is not keen to elaborate: his struggles to feed a poor family. This would be self-indulgent; he is not that ▶▶

► kind of man. Mary's younger brother and mother disagree, and in the family discussion that follows the English word "history" is thrown up often. "History is history," that is what his wife and son tell him, "and you should not hide it."

So Tonpa Kom tells his life story, as a woodcutter, a fisherman, a butcher and a charcoal burner. At one point he tried a business bringing cows from faraway to sell to villagers locally; when he had saved some money, he bought a cow and a cart, which he would hire out. Akham Kom, washing dishes by the well, adds that she wove shawls to boost their income. Mary helped, and also worked in the fields with her parents.

One day, after Mary had gone away to Imphal, Tonpa Kom saw an item in the newspaper about a young state boxing champion. The name was a mangled version of Mary's, but the girl seemed to be of the Kom tribe, about Mary's age. Could it be her? This was not a happy prospect: she had gone to pursue athletics, not to box. Boxing was not a sport for girls, and any bruising to her face would seriously hinder her chances of finding a good husband. Disturbed, he dispatched Akham Kom to Imphal to look into the matter. On the way she ran into Mary, returning home triumphant with her gold medal.

Her mother's view, according to Mary, is "any time OK". But Tonpa Kom was quiet for a few days. Mary cajoled him, explaining that, as an amateur, she wore headgear and would not get injured. After a while he decided that maybe she had chosen what was correct for her. But how would he support her financially? Mary told him, "Don't worry. I will never trouble you. I will work hard. When other girls are spending ten rupees, I will spend one rupee." From then on, he told himself, "I will do whatever I have to do. I will sacrifice myself if need be."

To help fund her training, equipment and travel, he sold the family cow for 14,000 rupees (£175) and borrowed money. When Mary began winning, and incentives started coming her way, he paid off the loans. Now her career has reached a stage that he no longer needs to live the way he does. People tell him it does not become the father of a world champion. But this is the only way he knows. Besides, his other children – two girls and a boy, the youngest just nine – are not yet successful like Mary, and they need to learn their lessons.

Most Indians have never been abroad. Mary has fought in places that would seem extraordinary to them: Astana in Kazakhstan, Pecs in Hungary, Tonsberg in Norway, Hanoi in Vietnam, Antalya in Turkey. Once there, she adjusts the way she did on early trips to other parts of India, with sign language and improvisation. "Asia-side" she likes the food and manages fine; in Europe she finds it too sweet, but enjoys the breakfasts, usually skips dinner and makes do with the excellent variety of fruit. She fights against South-East Asians, Americans, eastern Europeans, athletes from vastly more sophisticated systems – in China, it's one coach for every boxer.

In March she was in Ulan Bator, Mongolia, for the Asian women's boxing championships. Her opponent in the final was Ren Cancan of China. "She is very clever," Kom says, which is the highest praise she bestows upon a boxer, though here it comes with an edge. Cancan is 5ft 6in, and the reigning 51kg world champion. The first time Mary fought in this category, in the 2010 Guangzhou Asian Games, she met Cancan in the semi-final and lost 7-11. Tempestuous in

defeat, she felt Cancan had fouled all through the bout and the referee didn't catch her. The talk, subsequently, was whether it was possible for Mary to adapt to this weight class, whether, in fact, India's entry would be better filled by her accomplished state-mate L. Sarita Devi, who has won a world championship at 52kg. Four of Mary's five championships have come as a 46kg pinweight. At the Olympics there are only three weight categories for women, as opposed to ten for men.

The weight category is no small matter, especially for Indians, who, a national-level woman boxer tells me, are so insecure that from "15 till retirement" they look to fight in the same class. And so the national championships are full of starving boxers, surviving on glucose biscuits, reluctant even to drink a glass of water before their weigh-in.

With a champion's cold fury, Mary worked her way up two weight classes in three years to 51kg. She had to bulk up without slowing down. She had to work on a tight defence against bigger boxers. Before Ulan Bator, she went into training in Pune with the veteran British coach Charles Atkinson—underwritten by Olympic Gold Quest and a ministry grant. She was the first woman Atkinson had coached, and her sparring partners in Pune were men.

In the final, she used her improved guard to negate Cancan's reach. She pulled out combinations unusual for her, double jabs and a right, to go with the big left hook that is her signature. She won 14-8.

As a preparation for the Olympic qualifiers in May, this was excellent—though not quite enough. In her new weight category she had fought the Asians, but never faced the Europeans.

At the qualifiers in Qinhuangdao, China, seeded seventh, she reached the quarter-finals as expected and came up against the second seed, Nicola Adams from Leeds in England. Minutes after the fight, Mary was on the phone to Onler. "Papa," she said, addressing him as mothers sometimes do the father of their children, "I have lost." It was a close bout, 11-13. She was angry with the judging, as competitors often are in a sport where the scoring is subjective.

For the first time in the history of the women's world boxing championships, there was no medal for Mary Kom. But she wasn't thinking about that. Her qualification for London was in danger, and, worse, it was no longer in her hands. For Mary to go through, under the complex qualifying rules, Adams would have to win her semi-final, against a Russian.

For two days in Manipur, Onler sat tight, nervous. So much was riding on this. In China, Mary shopped recklessly. In the end, her conqueror got her off the hook (before losing the final to Cancan, and also complaining about the scoring).

"I can breathe again," Onler said.

Mary, reverting to a winner's mentality, said she had not had doubts. "Yes, I was sure I would qualify. The Russian, I knew she wasn't so good, she would lose to Nicola."

What about Nicola herself? "She is OK, quite good. She is quite defensive, she has a fast jab. Europeans are not so clever as Asians. I think I will beat her." She points to her head with a playful gleam. "I have her in my mind now."

Few Indians have ever seen Mary box, because barely any of her tournaments are televised or even streamed online. Her feats end up buried in the back pages, usually in the Sport in Brief. But when she returned from Qinhuangdao as the first and only Indian woman boxer to have qualified for the Olympics, the press was ►►

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▶ interested at last.

This is why Mary needs London: it is why every Indian athlete other than the cricketers and a handful of tennis stars needs the Olympics. It will define them. It could transform their fortunes, validate their efforts, their life. But unlike the weightlifters and archers and the growing contingent of male boxers who may confront their destiny two or three or four times over a career, London is Mary's first and only chance. By Rio de Janeiro in 2016, she will be 33, and too old.

When she walks the streets of Delhi with her fellow north-eastern athletes, they are sometimes mistaken for Nepali domestic help. "I tell them we are not Nepali, we are Manipuri, so don't speak like that, this is very bad manners." At other times they are taunted with the gibberish dispensed to those with oriental features: "Something ching ching ching ching they start speaking, I don't know what. Even they don't know what! We are feeling bad. We are Indian. Ya, the face is different. But heart is Indian."

This sentiment could be attacked by the more extreme Manipuri insurgents. But if Mary retires as an Olympic gold-medallist, she knows her life will be forever changed; and with it, a little bit, her country's standing in the world.

Footage of her fights is not easy to track down. The national broadcaster Doordarshan, private sports channels, her own agents, Olympic Gold Quest – nobody can supply it. After a fortnight of hard pursuit, a solitary bout emerges on an unlabelled cd in the boxing federation office from a mass of discs in a paper bag. Another is found on Jimmy's hard disk in Manipur. They are from Podolsk, Russia, 2005, and Barbados, 2010, both world championships.

The bouts are shot on single hand-held cameras with no commentary. They have the air of an underground activity, like 19th-century prizefighting.

But amateur boxing—or Olympic-style boxing, as it is beginning to be called—is a very different beast from prizefighting, then or now. There is no prize money, no pounding music or showboating mcs, no showbiz bright lights blazing around the ancient glamour of blood. Nobody dies in these bouts; knock-outs are rare.

Especially in the lighter categories, the boxers dance on the dazzling borderline between fisticuffs and fencing. They feint and prance and lunge to find openings off which to score. Scoring is a subjective and contentious affair: at least three of the five judges must instantly concur that a punch is substantial and delivered by the "knuckle part" of a "closed glove" to the legitimate target zone, between the stomach and the head, on the front or sides of the body. Without an electronic scoreboard, the audience would be lost.

Even by the standards of pinweights, Mary is so quick that judges regard her bouts as about the hardest task in the women's game. At Podolsk, her opponent is a Korean (the difficulty level of this bout she recalls with the Indianism "fifty-fifty"). To watch Mary, 22 years old and 46kg light, is to watch the physical equivalent of a raconteur of irrepressible wit and repartee. It feels like pugilism.

In the breaks, the women's coach Anoop Kumar rubs down her arms and legs. There is something wonderful in this unselfconscious athletic intimacy among countrymen who might be segregated by gender on public transport; in a country, indeed, where women boxers were initially asked, in the interests of modesty, to wear t-shirts under their vests.

As the clock ticks on in the contest, something raw cracks through the balletic Brownian motion. Grunts can be heard, the odd wild haymaker appears. There is something more existential at stake: boxing, where metaphor is meaningless because here it is what it is. Mary has never felt pain in a ring, or fear; those are areas she forbids her mind to go. What she does sometimes feel is the title of her favourite song, "Lonely", by the Senegalese pop star Akon. Early in the last round, she throws a strong right off-balance to the head of the Korean, which forces her into a standing eight-count. The vulnerability in her opponent flares like a rage in Mary's movements; she stalks her nervous prey around the ring, showing the killer instinct that figures in every appraisal of her.

When she wins, she takes her bows and is carried aloft briefly by Anoop in celebration. "I thank God," she says pointing upwards, as

**"Boxer has to be smart.  
Boxer has to be strong.  
But main is will."**

Mary Kom

the camera follows her, "God."

In Barbados, five years later, women's boxing has come on. The referee is a woman; the number of rounds has increased from three to four, and Mary herself has had to move up to flyweight, 48kg, the new lightest category. For once she is taller than her opponent, a Romanian, whom, she recalls dismissively, she has defeated twice before. By this stage, she says, she is a smart boxer, an all-round boxer, she can dance around her opponent and study her for a whole round if required. She could finish a championship final without feeling spent.

There is another crucial difference: the women are both wearing skirts. It was the first tournament to feature skirts, and when the boxing association recommended them for the Olympics, it caused a furor. An online petition called it a "ludicrous recommendation [that] only serves to enforce gender stereotypes", and collected 55,000 signatures. The skirt was made optional. Mary finds it comfortable and attractive, and if the Indian boxing federation had issued skirts for London, she would have liked to wear one.

"Men fighting men to determine worth (ie, masculinity) excludes women as completely as the female experience of childbirth excludes men," wrote Joyce Carol Oates. "Raw aggression is thought to be the peculiar province of men, as nurturing is the peculiar province of women. (The female boxer violates this stereotype and cannot be taken seriously—she is parody, she is cartoon, she is monstrous.)"

Mary Kom violates the stereotype of the violating stereotype. This is her extraordinary achievement. Raw aggression, childbirth, nurturing, teaching, are all her province. She enjoys doing her nails and visiting the beauty parlour, loves raising her children, and yes, she will fight with a skirt on. These aren't contradictions. She is not closing worlds, she is expanding them.

As she wins, again Anoop holds her aloft, one hand briefly fanning out in the air to signify her fifth world title. Waiting her turn at the podium, she asks her team-mates to pass her the Indian flag, and wraps herself in it. The hand-held camera pans to the ascending flags as the Indian national anthem plays, and you think: the nation which recognises Mary Kom would be a better nation.

There is a video online, a tribute to Mary by a Manipuri rock band. In the montage of visuals is a shot of her weeping while addressing a gathering of young students. Why, I ask her, what made her emotional?

"I was giving a speech about my story, how I'm doing my boxing. So first when I start boxing, it's very very hard, I'm doing a lot of struggle. My family cannot give me full financial support. As a player we are supposed to have good shoes, good dress, no? Whatever my family is getting for me, I used to wear and play. I'm fighting five years without any good diet. No supplement, no egg. No breakfast. Just lunch and dinner, vegetable only and rice. Sometimes when the relative I am staying with in Imphal, when he gets salary, then we get meat. Once a month, yes, exactly. So I get emotional." She laughs at the thought of her tears, as she always laughs.

And if you ask the phenomenal Mary Kom what makes a world champion, she will say: "Boxer has to be smart. Boxer has to be strong. But main is will. Main is will." ■

Rahul Bhattacharya is a novelist based in Delhi. His first novel, "The Sly Company of People Who Care", won the 2011 Hindu Literary prize and the 2012 Royal Society of Literature Ondaatje prize.

## Obituary: Jane Fawcett

## The deb who sank the Bismarck

THE ECONOMIST, JUNE 2016

Jane Fawcett (née Janet Caroline Hughes), codebreaker and saviour of Victorian buildings, died on May 21st 2016, aged 95

A DRAUGHTY wooden hut, in the company of the best brains of Britain, was not quite the billet Jane Fawcett had imagined for herself. At Miss Ironside's School for Girls in Kensington the drill had been to sit up straight, learn to curtsy and not bother her head about exams, for Mr Right was bound to come along eventually. After that, in 1939, she was a deb, parading en masse in a long white frock and an obvious sulk. A complete waste of time, she thought. Now, aged 19, just a chicken in the Bletchley Park code-breaking team, she was spending hours on a horrid hard chair, bent over a machine on a wobbly trestletable. Lights hung down on strings, and a frightful old stove smoked in the middle of the room. She was also saving the country, and it was terribly exciting. But she could not breathe a word about that.

She had told her parents she was working for the Foreign Office. They probably presumed it was as a typist, the kiss of death. She had been recruited for Bletchley because the government then believed that the upper classes were better at keeping secrets. Such an odd idea; she'd supposed the whole country was making common cause. She often didn't think much of aristocrats, despite moving in that world herself.

It was certainly a relief, though, when her father rescued her from her first lodgings, in a fume-ridden council house with a lorry-driver's family. Couldn't have Jane there, he said. She moved to Liscombe Park, the Elizabethan mansion of a family friend, where a much jollier time was had, though the trip to Bletchley down pitch-black country lanes for night shifts was hairy, to say the least. Bletchley Park itself, a pile of best "lavatory Gothic" as she later described it,

was sociable for a spy-centre; she danced Scottish reels on the lawn and sang madrigals. Those gave brief respite from the gruelling days and nights spent tracking what the Germans were up to.

Her enemy was the German Enigma machine, a fiendish configuration of rotors which changed every day to set the code for Nazi military communications. Bletchley Park's code-breaker, known as the Bombe, was being ever-upgraded to compete with it by a group of laconic, obsessive men (including Alan Turing, "desperately screwed up", and Gordon Welchman, "always in the depths of the deepest thought"). Of course, they never noticed her. Yet women, two-thirds of the workforce, were treated pretty much as equals at Bletchley. They could notch up their own victories, and May 25th 1941 was hers.

The day was going as usual. When an Enigma code was broken, she would check the decoded message to see, one, if it was plausible German, and two, if it was of any interest. (She had all of six months of German, picked up in dull Zurich, where she had been sent to get over her heartbreak that she was too tall to be a ballerina. She soon went off to St Moritz instead.) In May 1941 they were all trying to trace the Germans' best battleship, the *Bismarck*, which had just destroyed *HMS Hood* with the loss of more than 1,400 lives. They thought it was still off Norway. But the decoded message, spooling on a paper strip out of her machine, told her that the *Bismarck* was going to Brest. The message was passed straight to Whitehall, and they were all "absolutely on their toes" to know what would come through next. It was a distress call, as Hitler's finest ship was sunk by the Royal Navy. That earned her a rousing cheer in the Bletchley Park dining room.



## A red-brick victory

And that was all she got. No one outside the circle knew anything of it; they were all sworn to absolute secrecy for life. That was sometimes very hard. Her fiancé Ted, a naval officer, came back from the war a hero; she felt like an also-ran. Nonetheless, not being one to brood, she became a professional singer for 15 years while bringing up two children; and then, unexpectedly, got the chance to charge off to war again. Which, of course, she did.

This time the secret central command was in her own house in Kensington. There, as secretary from 1964 to 1976, she ran the affairs of the Victorian Society. Once more, it was David against Goliath: a small group led by another obsessive intellectual, Nikolaus Pevsner, fighting tooth and nail to persuade the whole government, the whole of the British public, all academe and almost all architects that Britain's Victorian buildings were worth saving. Once more, too, it was she who did most of the hard slog. She wrote books, lectured, managed the rickety finances and tormented British Rail while the men, especially John Betjeman, the poet, grabbed the attention. Well, never mind; she counted saving the rampant red-brick London Midland Hotel beside St Pancras as one of her special achievements. And she was even happier to see how good it looked inside when it reopened in 2011. She had feared the redo would be very vulgar.

The refurbishment that pleased her less was of Hut 6 at Bletchley. At last, the great secret got out; the place became a museum, and she went to see it. The lawns were too neat, the lights were wrong and the tables no longer wobbled. It was all much too clean and rather sterile. Still, that didn't stop her seizing the hand of the Duchess of Cambridge and chatting away briskly for ages, as one well-bred gel to another, about the best time of her life, spent there. ■





## Two women, one cause

1843, JULY/AUGUST 2017

**Amal Clooney, a human-rights lawyer, is working with a Yazidi refugee to put Islamic State in the dock. Robert Guest travelled to Iraq to find out why**

THEY make an unusual team. Amal Clooney is an Oxford-educated human-rights lawyer married to a film star. Nadia Murad was born in a poor Iraqi village and once aspired to become a teacher. Clooney is tall, dazzling and so recognisable that people walk up to her in the street and tell her they love her. Murad is small, shy and avoids eye contact. Yet among her people, the Yazidis, Murad is better known and more admired than any other woman on Earth. Murad is a symbol of survival for a minority threatened with extermination. She was once a slave of Islamic State (IS). And, almost alone among former prisoners of IS, she is willing to testify publicly and repeatedly about the terrible things the jihadists did to her.

Clooney is Murad's lawyer, and the two women are working to bring the leaders of IS before an international court for inflicting genocide on the Yazidis. The story of their campaign is an extraordinary one: a tale of pious savagery pitted against truth, law and the soft power of celebrity.

It begins in August 2014, when Murad was a 21-year-old student. That month, IS fighters arrived in her village, Kocho, on the Nineveh plain. They were a terrifying mob, all of them heavily armed and many speaking languages that no one in Kocho understood.

The jihadists saw Nadia and her neighbours as the worst sort of infidels. The Yazidi faith has no holy book, but draws on a mix of Mesopotamian traditions. Yazidis revere a peacock angel that temporarily fell from God's grace; many Muslims regard this as devil-worship.

Estimates of how many Yazidis there are range widely, from 70,000 to 500,000, mostly in Iraq but also in Syria and Germany. IS set out to reduce that number to zero, by forced conversion or Kalashnikov.

On August 15th the IS fighters in Kocho summoned everyone to the village school and separated the men from the women and children. Nadia watched from a second-floor window as they marched the men away. They slaughtered 312 in an hour, including six of Nadia's brothers and stepbrothers. They murdered the older women, too, including Nadia's mother. They forced the young women and

children onto buses and took them to Mosul, IS's main stronghold in Iraq, which, as 1843 went to press, was under siege by Iraqi government forces.

Nadia was shut in a building with 1,000 other families. The women were sick with fear; they knew what was coming. The fighters were about to divide the spoils. A man came up to Nadia and said he wanted to take her. She looked up and saw that he was enormous, "like a monster". "I cried out that I was too young and he was huge. He kicked and beat me. A few minutes later, another man came up to me...I saw that he was a little smaller. I begged for him to take me."

The jihadist who took Nadia told her to convert to Islam. She refused. One day, he asked for her hand in "marriage". She said she was ill. A few days later, he forced her to get dressed and put on make-up. "Then, on that terrible night, he did it."

From then on, she was raped daily. When she tried to flee, a guard stopped her, forced her to strip and put her in a room with several guards, "who proceeded to commit their crime until I fainted". She finally escaped when her captor left a door unlocked. She could not return home, because IS still controlled her village. Eventually, she found sanctuary in Germany, where she now lives.

I first heard about Nadia from Amal, whom I was interviewing for a different article. (It was about free speech; Clooney had just got another client, a graft-exposing journalist called Khadija Ismayilova, out of prison in Azerbaijan.) Over lunch at a club in Notting Hill, she outlined Nadia's story, and explained how the two of them were planning to put IS leaders in the dock.

The evidence of genocide is exceptionally clear-cut, she pointed out. Not only are there mass graves and eyewitnesses, but IS has boasted about its intentions, filmed its massacres and posted videos of them online. In the case of the Yazidis, IS propaganda was chillingly specific. An article in *Dabiq*, an IS newsletter, says of

▶ this “pagan minority” that “their continual existence...is a matter that Muslims should question as they will be asked about it on Judgment Day.”

Another leaflet explains that enslaving *kuffar* (infidel) women is in accordance with *sharia* (Islamic law). It also answers what one must assume are common questions, such as:

- “Is it permissible to beat a female slave?” [Answer: Yes];
- “Is it permissible to have intercourse with a female slave who has not reached puberty?” Answer: “[Yes]; however if she is not fit for intercourse, then it is enough to enjoy her without [that].”
- “Is it permissible to sell a female captive?” Answer: “It is permissible to buy, sell, or gift female captives and slaves, for they are merely property.”

Despite such overwhelming evidence, putting IS leaders on trial will be hard. For one thing, they are tricky to capture. For another, international law moves slowly and often faces geopolitical roadblocks.

Clooney’s first priority is to gather as much evidence as possible before it is lost. Some of this she does herself, painstakingly recording interviews with survivors (“the most harrowing witness statements I’ve ever taken,” she says). At the same time, she is pressing the UN Security Council to order a formal investigation on the ground, with a proper budget to excavate mass graves and collect DNA and documentary evidence (certificates of slave ownership, for example).

Ideally, she would like IS leaders to stand trial before the International Criminal Court (ICC), the world’s permanent human-rights court in The Hague. “If the ICC can’t prosecute the world’s most evil terror group, what is it there for?” she asks. However, she is open to other options, such as a hybrid court backed by the UN and the government of Iraq, so long as it meets international standards of justice.

Getting governments to co-operate is tricky. Most agree in principle that IS should be brought to justice. But Russia and Iraq are doubtless nervous about what investigators might unearth, and others drag their feet. (Britain is an honourable exception). Clooney is trying to shame them all into action.

A few weeks after lunching with Clooney, I flew into Iraqi Kurdistan to find out more about Murad’s people. I could not visit her village: it would have been both suicidal (since IS controlled it) and pointless (since all its Yazidi inhabitants were either dead, or had run away, or were captives of IS). Instead, I headed for Mount Sinjar, the craggy stronghold of the Yazidis, near Iraq’s border with Syria. This is where thousands of Yazidis fled when IS first swept across the Nineveh plain. The jihadists were prevented from capturing it only through a combination of NATO air power and Kurdish boots on the ground. It is a sanctuary of sorts, though IS was still sporadically shelling it when I visited.

Getting to Mount Sinjar meant driving across the desert, past bombed-out ruins and sandbag-flanked machinegun nests. Goats and sheep wandered back and forth across the border. Tobacco sprouted in untended fields. The route led through a confusion of roadblocks manned by different Kurdish and Iraqi factions. Only the skill of Nick Pelham, *The Economist*’s Middle East correspondent, got us through – he speaks flawless Arabic and, more importantly, knew exactly which bigwigs to call to make the men with guns let us pass.

We stumbled on the funeral of a Yazidi militiaman who had died fighting IS. Women were clustered round the body, wailing. Men sat separately in a room decorated with photographs of martyrs. They insisted that we join them for lunch.

The younger ones laid a plastic sheet on the carpet and heaped it with huge bowls of rice and couscous topped with sheep’s heads. The men put aside their AK-47s, grabbed the skulls and cracked them open. Then they scooped out the brains and ate them with relish. When they had eaten, they talked. All had stories of the day

the jihadists came: of the panic, the headlong flight and the friends and relatives who did not escape. “My uncle’s wife was paralysed. We couldn’t get her out of [the village]. She was 80,” recalled Khader Jassim, a Yazidi man with a grey moustache.

These were traditional people, with a strong sense of honour and its ugly twin, shame. I wanted to know how they felt about Nadia. She stands up in public and describes how IS fighters gang-raped her. No topic could be more taboo. Did the stern and conservative men of her home region think she was bringing shame on their community, I wondered? Far from it. “Nadia Murad? I love her so much, I hope she becomes president of Iraq,” said Kharbo Khader Mardos, a man who fled from a village near Nadia’s.

Aziz Haji Khalaf, a Yazidi police chief, put it like this: “I think of her as a sister, an incredible person. I see her strength. With all that happened to her, she goes around the world and describes her suffering to get support for the Yazidis and to win freedom for the men and women who are still captives.” In dozens of interviews, I found only one old man willing to criticise her, and his complaint was speculative. He worried that she might one day go into politics and lose her ideals.

Most interviews were held in the camps for displaced people where 90% of Yazidis in Iraq live. These are grim places. The ones on Mount Sinjar (ie, on Yazidi territory) are ramshackle and poorly provisioned. The more formal ones, in the Kurdish areas, have neat rows of tents and plenty of food but simmer with tension, since Yazidis live side by side in them with Muslims who have also fled from IS. Many Muslims despise Yazidis; many Yazidis do not feel safe near Muslims. “Perhaps you are a Muslim, so forgive me, but I want to live in a place where there are no Muslims,” one Yazidi man told me. I talked to a number of people who, like Nadia, had been prisoners of IS. They were all young or middle-aged women. All the adult-male prisoners had been killed, along with all the women too old to rape.

Talking to survivors, it quickly became clear how exceptional Murad really is. None admitted to having been raped, though all said ▶▶



▶ that most of the other captive women were. To respect their privacy, I'm not going to use their real names. Khatoon, a weary mother, said she suggested to her captor that she had AIDS. "I said, do what you want. But I'm sick. If you want to suffer in the same way, go ahead." So he made her a house slave instead. Sabrin, another ex-slave, was ransomed along with three of her children. She said that while they were prisoners, she protected one of her teenage daughters by shaving her hair and pretending she was paralysed. "There were four bombing raids while we were in Raqqa, and she didn't move at all or say a word. That's how she [avoided being raped]."

The stories the survivors tell about what happened to fellow captives are sickening beyond belief. "Any woman found with a mobile phone, the punishment was to be raped by five different men," recalled Khatoon. Some girls slashed their own wrists. "When [the jihadists] found them, they undressed the bodies and raped the dead girls in front of us."

The effect on Yazidi families has been devastating. Two of Sabrin's children are still in captivity. Her husband and one of her daughters are almost certainly dead. "I can't afford to think about where my children or my husband are, because I have to look after the rest of my family. But I think about it all the time," she said.

The Yazidis I met typically voiced three wishes. First, they want to return home. Second, they want the world to acknowledge that what happened to them – and is still happening – is genocide. Third, they want justice. The first of these wishes can only be fulfilled by military force. Yazidis can go home when IS is driven out of their villages, which will probably happen sooner in Iraq than in Syria. Fulfilling the second and third wishes requires grabbing the world's attention, jolting its conscience and pressing governments to act. That is where Nadia and Amal come in.

People are seldom moved by statistics. When they hear that 5,000 Yazidis have been murdered by IS, or that 3,000 Yazidi women and children remain in slavery, they struggle to process the information. But when a little, mouse-like Yazidi woman describes how she was violated by gloating, self-righteous thugs who called her a "dirty unbeliever", they are outraged. It is the details that provoke the most horror. For instance: Nadia's nephew, who was captured as a child, has been brainwashed into joining IS and now rings her up to threaten her.

I met Nadia in New York, shortly before she addressed the UN in September. She seemed tired, stressed and nervous. But when she took the microphone, her gentle voice filled the cavernous hall. She spoke in a Kurdish dialect, which was simultaneously translated into the audience's headsets. Every word rang with pain. By the time she had finished, hundreds of faces were tear-sodden. Ban Ki-moon embraced her. Diplomat after diplomat rose to applaud. In the end, a bulky UN official had to rescue her from the adoring crowd.

I asked her later about her new life, living in Germany and jetting around the world giving speeches and interviews. "Everything is different," she said. She marvels at German trains, the damp climate, and the fact that she is respected as a human being. But she hates flying, and struggles with unfamiliar food. She yearns to return to her village, to see the family farm and the sheep and to enjoy Yazidi festivals, when people paint their houses white and follow fasting with feasts. "My life was easy and simple [there]," she recalled. But she keeps going. She has endured far, far worse.

**"Every single one of them must be brought to justice."**

Amal Clooney

While Nadia makes people weep, Amal does multiple jobs: framing a legal strategy, keeping the case in the headlines and lobbying governments to take it seriously. Because she is a celebrity, many people underestimate her. The most common question I was asked after interviewing her was: "What was she wearing?" (There's a website entirely devoted to this topic, so it is obviously of great interest to many people, but don't ask me. I can't tell the difference between a Vera Wang dress and one from Walmart.)

Some people assume that, because Clooney wears nice clothes and walks on red carpets, she is just a figurehead. Some of the nastier tabloids go further. The *Daily Mail* totted up the price of all the outfits she wore while lobbying the UN in September, and insinuated that a woman who flaunts such luxury must be insincere in her professed concern for the downtrodden. This is plainly wrong. She was doing the same work before she was rich and famous. "I knew her when she was unknown," says Luis Moreno Ocampo, a former chief prosecutor of the ICC. "She was hugely impressive."

She was also intrepid. She speaks Arabic; her Lebanese parents moved to England when she was four. More than 20 years later she returned to Beirut to work for a UN tribunal investigating the assassination of Lebanon's prime minister in 2005. The day after she arrived, Israel bombed the airport. She lived in a fortified compound in a city plagued by car bombs. Suspects targeted by the tribunal included Hizbullah, a terrorist group, so investigators lived in fear of assassination. "There were times when I would look at parked cars with trepidation," she recalls.

Today, her celebrity may sometimes be a distraction, but it has undoubtedly made her more effective as an advocate. She can guarantee media coverage of any case she takes on. And powerful people make time for her: the first time I met her, she had just had an audience with the pope.

Fame is a currency. When combined with a noble cause, it is sometimes irresistible. Suppose you are a politician, possibly male. Hundreds of people want to bend your ear every day about a plethora of subjects. You cannot meet them all. One of them, a lawyer promoting justice for the victims of terrorists, just happens to be one of the most beautiful women on the planet. It is completely appropriate for you to sit down with her to discuss human rights in the Middle East, a region of great strategic importance to your government. Plus, you might enjoy it. David Cameron, Justin Trudeau, Boris Johnson and John McCain clearly did.

In person, Clooney is warm, charming and wonkish. She asks after my 13-year-old daughter, remembering that they have a fiercely academic Buckinghamshire girls' school in common. She talks me through legal points with great precision and sends follow-up emails packed with notes.

In public, she is the kind of orator who writes her own lines and delivers them with force and fury. Her speech to the UN in September was a barnstormer. She spoke after Nadia, reminding the assembled dignitaries that the slave market where her friend was sold was still running, and that not a single member of IS had been prosecuted for crimes against the Yazidis.

"This is...the first time I have had a chance to address an audience in front of the UN secretary-general. I wish I could say that I was proud to be here. But I am not," she said.

"I am ashamed, as a supporter of the UN, that states are failing to prevent or even punish genocide, because they find that their own interests get in the way. I am ashamed, as a lawyer, that there is no justice being done and barely a complaint being made about it. I am ashamed, as a woman, that girls like Nadia can have their bodies sold and used as battlefields. I am ashamed as a human being that we ignore their cries for help."

The case could take years. But when investigators have dug up enough graves and collected enough slave certificates, Amal hopes that the pressure to prosecute will be overwhelming. Nadia vows not to give up. "Every single one of them must be brought to justice," she says. ■

Robert Guest is foreign editor of *The Economist*

## Obituary: Simone Veil

## Liberated

THE ECONOMIST, JULY 2017

**Simone Veil, a French stateswoman, died on June 30th 2017, aged 89**

LIKE the other children, she should have been slaughtered on arrival. But with whispered advice from another prisoner, she claimed to be 18, so instead they sent her to forced labour, tattooing her arm to show that she was no longer a schoolgirl from Nice but a numbered slave, awaiting death by starvation and exhaustion.

The deportation to Auschwitz shaped her life, Simone Veil said; it would be the event she would want to recall on her deathbed. As a magistrate, civil servant and politician, she heard echoes of that humiliation in the trampled dignity of women. It spurred her to end the mistreatment of female inmates, particularly Algerian prisoners of war, and to push through contraception reform, making the Pill available at taxpayers' expense. Foreshadowing her greatest achievement, she set up an organisation to defend women being prosecuted for terminating their pregnancies.

Her arrival in politics was accidental. It was her husband, Antoine, whom President Giscard d'Estaing intended to invite to the government when he came to visit in 1973. But she proved an inspired choice as his health minister. Legalising abortion was the defining defeat of the old order—censorious, hypocritical, male—in post-war France. Theoretically banned since 1920, terminations took place annually in the hundreds of thousands: secretly, shamefully and dangerously. She introduced what became known as the *Loi Veil* into a National Assembly with just nine women deputies and 481 men. Some, she said caustically, were even then secretly trying to arrange abortions for mistresses or family members.

Cowards daubed swastikas on her car and in the lift in her apartment block. A deputy called Jean-Marie Daillet asked her if she supported throwing embryos into a crematorium oven. No woman ends a pregnancy lightly, she responded calmly. Though the issue split the ruling conservatives, her steely persuasion rallied centrists and left-wingers behind the bill. Pierre Mauroy, later a Socialist prime minister, complimented her, without irony, as “the only man in the government”.

For years she was France's most popular politician. She could—should, many thought—have been prime minister or even president. But she lacked the necessary tribal instincts. Instead, her political career peaked in 1979 as president of the first directly elected European Parliament. She delighted in the post's symbolism—of reconciliation among wartime foes, and that a Jew and a woman could hold the continent's highest elected office.

“Simone always starts by saying ‘no,’” her father said. Some found her impatient and demanding. But she spied a double standard: the features that people admire in men are a point of criticism in women.

In 1979, when National Front thugs attacked a meeting where she was speaking, she shouted, “You do not frighten me! I have survived worse than you!” She had. Of the 75,000 Jews deported from wartime France, she was one of only 2,500 to return. Her father and brother perished, somewhere, in the east. But the most painful and powerful memories were of her mother Yvonne, her lifelong inspiration, dying slowly of typhus in Belsen after a 45-mile death march at the war's end.

The abyss had opened in 1944, days after

she passed her *Baccalauréat*; she worried all her life that taking the exam under her real name had led to her family's arrest. “I found myself thrown into a universe of death, humiliation and barbarism,” she wrote. “I am still haunted by the images, the odours, the screams, the humiliation, the blows and the sky, ashen with the smoke from the crematoriums.” On liberation, a British soldier thought the emaciated young woman was 40. For a month, she could sleep only on the floor.

She returned home fired by a “rage to live”, and also infuriated by selective amnesia. Reconciliation trumped justice. Members of the anti-Nazi resistance were honoured, but in what she called “Gaullo-Communist France” nobody seemed willing to believe that the Germans—and their local accomplices—had persecuted people simply for being Jewish. The silence was mixed with mockery. At a diplomatic reception, a senior French official jokingly likened the tattoo on her arm to a cloakroom ticket. She wept, and thereafter favoured long sleeves.

**Optimist, without illusions**

The Holocaust was unique in its scale and its senselessness, she used to say. Her father had raised his four children to be proud above all else of their Frenchness; in the secular Jewish tradition, he told them, being “people of the book”, meant special attention to reading and thinking.

She will be interred alongside Victor Hugo, Voltaire and Émile Zola in the Paris Panthéon. Her previous great honour was to become a member—one of five women among 40—of the Académie Française, guardian of the language's purity and precision. On appointment, each “immortal” is given a ceremonial sword. Hers bore two mottos: the French Republic's *Liberté, Égalité, Fraternité* and the European Union's *Unie dans la diversité*. The third engraving was the number from her arm: 78651. ■





## Mother of invention

1843, FEBRUARY/MARCH 2018

**Her children have made waves with fast cars and slow food. Maye Musk tells Natasha Loder how she produced a family of entrepreneurs**

“OH GOD, that is so horrible,” grimaces Maye Musk, as though I had pointed out vermin in her son Kimbal’s impeccable new restaurant. All I had done was to ask for her views on the current fashion for raw-food diets. “I went to a raw-food restaurant and afterwards I said, ‘Please take me out for a hamburger!’ I couldn’t eat anything.”

Musk, a striking woman with cropped white hair, glowing skin and brilliant blue eyes, does not mince her words. As a dietician she has no truck with fads. As a mother – of Elon, the world’s most famous inventor, Kimbal, a tech and food entrepreneur, and Tosca, a film director who recently started a streaming service to bring romance novels to television – she has a similarly robust attitude.

Unlike most women of her generation – she is 69 – maternity has not defined Maye. She has run her own nutrition business for 45 years and has been a model for 54 years. In an era in which parents and children are ever more closely intertwined as they navigate the hazards of competitive education, she has a refreshing enthusiasm for her and her children’s independence.

Thanks to business’s growing enthusiasm for older models, she seems to be getting more, not less, successful. She has been on a cereal box, featured in a Beyoncé video and starred in a campaign for Virgin America. Once you have seen her unusual face, you find yourself recognising it in adverts.

Today, she is sitting in a pool of bright winter sunlight on the patio of Next Door, Kimbal’s latest venture, in Longmont, Colorado. It is the day before Thanksgiving and tomorrow 30 members of the Musk family will gather for a meal Kimbal is cooking at his home in nearby Boulder.

He, on the other side of the table, has his mother’s easy smile. After starting two technology companies with Elon – Zip2 and PayPal – in

2004 he became a founding father of the farm-to-table movement. He has built 13 restaurants since then and has more on the way. They specialise in unprocessed, locally sourced foods.

The highlight of lunch is the 50:50 burger – half beef, half mushroom and wholly delicious. “It’s the best burger I’ve ever had and I love my food,” Maye says with deep emphasis on the word “love” with her strong South African accent. The burger, explains Kimbal, is a path to less and better meat. “I don’t think in 45 years I’ve ever seen anybody who ate enough vegetables,” Maye adds as she tucks in.

Another stand-out dish is the gluten-free breaded calamari. Kimbal says his gluten-intolerant customers rave about it. Maye is unimpressed. “Gluten is so ridiculous. Don’t invite me to a dinner with someone who is gluten-free. I ruin the party.” She remembers telling someone their problem with pizza was not gluten intolerance – they just ate too much of it. Is there anything in Kimbal’s fridge that his mother wouldn’t approve of? He confesses to some almond milk. “It’s not milk!” says Maye. “It’s sugar water flavoured with almonds!”

They are united, though, on their core beliefs about food: the need for humans to eat good food and have access to it. Maye is involved with Kimbal’s charity which builds outdoor “learning-garden” classrooms in schools. There are now 400 in six major cities across America, with more on the way.

So much food is rubbish these days, and so many people’s diets so poor, that foodies such as Kimbal and Maye talk about “real” food. Yet a good diet is the same as it has always been: full of fruits and vegetables, whole grains and packed with nutrition. Eating this way is how Maye, and the three Musk children, were brought up.

Yet raising children is about more than food pyramids. Parenting – one of the great subjects of our era – varies wildly, from age to age and from culture to culture, from individual to individual. Still, ►►

► we all want to raise children who, among other attributes, have the independence and vision to make things happen. So how did Maye raise these three remarkable entrepreneurs?

Maye's own childhood was not a standard one. Family holidays were often spent flying over the Kalahari desert in Namibia in her father's single-engine plane – “mostly airsick” – looking for a legendary lost city. The plane was her father's passion, not a rich man's toy: her parents were not wealthy but she remembers a home with mulberry trees, peaches, plums, oranges and lemons. At schools she was a “science nerd”, and teachers would send her to demonstrate mathematics to classes of older children. Her brains made her a magnet for bullies – South Africa was a rough place – but her larger and more athletic twin, Kaye, fought them off.

Independence came early, thanks to her striking features. She was modelling at 15 but expected the work to dry up by 18, so she studied dietetics. By 21 she had her own practice.

A year later, in 1970, she married an engineer, Errol Musk. Elon arrived nine months later, Kimbal arrived about a year after that, and not long after came a daughter, Tosca.

Maye's marriage lasted nine years. After the divorce, she took the children and started on her own as a single, working mother. Money was particularly tight. The family couldn't afford many things, such as eating out and movies. Maye managed by juggling her private practice as a dietician, wellness talks and modelling. She cut the children's hair, gave them manicures and pedicures. “You have no idea how nasty it is to give teen boys a pedicure,” she says. They were a well-behaved bunch, and weren't given a choice in the matter. “I wouldn't allow them to be brats, I couldn't afford that.”

In contrast to today's tiger mothers and helicopter parents, Maye did not hover over her children, schedule their lives, read to them or check their homework; indeed, they learned to forge her signature to sign off their work. She was hands-off, just as her parents had been. “I didn't interfere with your lives,” Maye says to Kimbal, who responds that they felt very independent as children. When asked about her approach to child-rearing she says deadpan, “I was a perfect mother.” She and her son both break into gales of laughter. “Everyone should take lessons,” Kimbal teases. Was she never worried about whether they would find their way in life? “No,” she answers quickly, and then, “I didn't have time to.”

Her business, run from home, provided her children with training as budding entrepreneurs. The children all helped out: Tosca remembers writing letters for Maye and answering the phone. “It really helped us to get a sense of independence as well as understand work ethics,” she recalls. During parts of their teenage years, the boys chose to go to live with their father – a decision that Elon has since said he regretted.

Left to explore the world for themselves, each child spontaneously developed strong – and very different – interests. Elon was an obsessive reader and thinker from an early age, so absorbed in his own world that his parents thought he might have a hearing problem and took him to the doctor. Drawn to computers he sold his first computer program when was 12. He struggled to make friends at school and was badly bullied. But he developed strong, lifelong bonds with his brother and sister which, to this day, seem to serve as a stabilising influence in his life. After Thanksgiving, he posted



a picture of himself and Kimbal in the Rockies, arms around each other with the message “love my bro”.

Tosca, too, had her enthusiasms lit at a young age. When she was four she watched the musical fantasy film “Xanadu”, which gave her a passion for movies. By the age of 18 she had landed a job in a studio and from there went on to become a film director. As for Kimbal, Maye recalls taking the children to a grocery store when the boys were in their early teens. “Elon would take a book and read. Tosca would hang around me, and Kimbal would be picking up the peppers and smelling them and saying ‘aaah’.”

While Maye regards cooking as “torture”, Kimbal was always an enthusiastic and ambitious cook. At 14, his sister recalls, he came home with a fish too big to fit in the oven, wrapped it in foil and stuck it on the barbecue. “He cooked it to perfection,” Tosca remembers. “To perfection! I don't know how he knows how to do that.” Kimbal's cooking created connections. He says when he cooked, “people would sit down. My family would sit down. When I didn't cook, the food wasn't very good...” – he pauses briefly to say a soft “sorry” to his mother – “...we would just peck at it and go and watch tv. You didn't really sit down and connect.”

Perhaps because they lived in Africa, perhaps because it was a different era, perhaps because their parents were busy with their careers, the young Musks' childhood had more than a pinch of “Just William” or “Huckleberry Finn” about it. Led by Elon, the brothers created home-made rockets and explosives. They raced their dirt bikes so hard that Kimbal fell into a barbed-wire fence. They walked door to door at night in a dangerous country selling Easter eggs at a scandalous mark-up: Kimbal told customers sceptical of the price, “you are doing this to support future capitalists.” They tried to start up a video arcade. Parental attention didn't always point them in the right direction: their father took them to a casino (gambling was illegal).

Elon has spoken with sadness of the relationship with his father, but Kimbal is more relaxed about some of the trials of growing up. ►►

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► Family difficulties aside, South Africa could be a brutal place. When Maye found out that a child had been caned at his school, she told Kimbal to tell her if anything like that happened to him. Kimbal replied that he got caned every day, and banned her from complaining about it. His teacher had a drum of different implements, which included a cricket bat; the children were made to walk to the front of the class and pick their punishment. “A cricket bat doesn’t hurt that much; what really hurts is the thin cane or a ruler,” recalls Kimbal.

Elon was the first to leave at the age of 17, using a Canadian passport Maye had obtained for him and a bit of money she had set aside. Tosca was also determined to leave but was too young to go on her own. She persuaded Maye, who wanted to do a PhD, to visit Canada to see if she could study there.

While Maye was away she sent back a particularly upbeat report about Toronto. That was enough for Tosca: when Maye got home, she found that her 15-year-old daughter had sold the house and most of its contents. All that was needed was Maye’s signature. She signed. By way of explanation she says, “my kids do very extraordinary things that make sense.”

The two women joined Elon and they all moved into a cheap rental apartment in Toronto. Capital controls in South Africa meant they had limited access to the funds from the sale of the house, so once again, the family started up again with almost nothing. Kimbal spent a year finishing school and then joined them. They all went to university and lived frugally. Maye signed up as a model, started her PhD and began the slow business of building up a dietician’s practice again from scratch.

When the children eventually moved out, Maye relished her independence. She ate food the children didn’t like; she walked naked round the apartment. She decided to move to New York on the grounds that New Yorkers walked fast and talked fast and were therefore her kind of people. Kimbal, a successful tech entrepreneur, wanted to learn how to cook, so he moved there too in 2000. Then one bright September morning two planes brought down the World Trade Centre and he became a volunteer cook for the firefighters. In the most extraordinary of times he found himself reminded of the power of food to bring people together, and by 2004 he had opened

his first restaurant. Eventually the whole family ended up on the other side of America. Elon and Tosca live in the Los Angeles area, and Kimbal is in Boulder. When Tosca had twins, Maye packed up once again, and moved out West to help.

In a way, the journey that made the Musks is a classic American one, of people who arrived the hard way from a difficult country. Kimbal has spoken of the difficulty of giving his children the sense of urgency he once had when he first arrived and feared he might have to go back to South Africa. Elon has tackled this dilemma of child rearing by setting up a private school, which his five children attend, that teaches problem-solving and matches the curriculum to the aptitudes and capabilities of the child. It is called Ad Astra, meaning “to the stars”. Yet even the name of the school conceals the same lingering irony about parenting. The Latin phrase that the space crowd live with is actually: “per aspera ad astra” – through hardships, to the stars. If necessity is indeed the mother of invention, how are successful people to raise enterprising offspring? They cannot, without fear of being unkind, foist upon their children the challenges that they overcame.

Yet it seems reasonable to believe that Maye had some influence on how these three individuals turned out. And her approach to parenting was very different to the modern norm. By today’s standards, she gave her children an outlandish degree of freedom to take risks, extraordinarily little supervision and made no attempt to shape their interests or to determine their futures. They made adult decisions at an early age, and even though the family was separated often, the bond between them remained strong.

When lunch is over, Kimbal hurries off to start cooking his Thanksgiving meal for the clan. Maye lingers. Her future looks bright. She has worked hard all her life but she has no desire to slow down. Her mother, she says, worked until the age of 96. “I’m just getting started,” she laughs. ■

Natasha Loder is *The Economist’s* health-care correspondent



## Obituary

## Betty Friedan

THE ECONOMIST, FEBRUARY 2006

**Betty Friedan, campaigner for women's rights, died on February 4th 2006, aged 85**

ONCE upon a time, behind the door of almost every ranch house on almost every suburban street in America, a beautiful creature could be found. She wore a housecoat, sheer stockings and a turban that kept her hairstyle neat when she was dusting. Rubber gloves preserved her flawless hands as she washed the dishes after breakfast. Her husband's homecoming was welcomed every day with new recipes from the *Ladies' Home Journal* and, after lights out, complaisant sex.

She had never been to college or, if she had, put her intelligence aside. Her life was to ferry children in the station wagon, make peanut-butter sandwiches, choose new drapes, do the laundry, arrange flowers. At eleven in the morning she would open her enormous refrigerator, cut a slice of pastel-frosted cake and wash down, with coffee, the pills that kept her smiling.

For almost a decade, in the 1950s, Betty Friedan's life was much like this. In her rambling house in Grandview-on-the-Hudson, New York, she brought up three children, cooked meals for her theatre-producer husband and "messed about" with home decoration. Obviously, she did not work in the proper sense of the word. She was a wife and mother and, as a woman, was happy to be nothing else.

One glance at Mrs Friedan, though, suggested that matters were more complicated. Short, stocky, with an enormous nose and hooded eyes, she was far from the sweet Bambi creature promoted in women's magazines. Argument-wise, she could give as good as she got, complete with smashing crockery and the whole gamut of screams. She had majored in psychology and won a research fellowship at Berkeley, though she gave it up when her boyfriend felt overshadowed. At college she had gone, dressed in twinset and pearls, to a squalid New York office to try to join the Communist Party. For years she had been a left-wing journalist, writing about race and sex discrimination for union news-sheets, and she had fearlessly gone on working after marriage until, on her second pregnancy, she had been fired in favour of a man.

In Grandview-on-the-Hudson, her radicalism buried, Mrs Friedan asked: "Is this all?" Despite her education she was doing no better than her mother, whose misery had filled their nice house in Peoria with temper and recrimination. Her father, once a button-hawker, had risen to own a jeweller's shop; her mother's creativity began and ended at the front yard. Most women, Mrs Friedan believed, felt the same. In 1957 she surveyed 200 classmates from Smith College, now housewives, most desperate; but when she catalogued their despair in an article, no women's magazine would publish it. Mrs Friedan determined to write a book, and in 1963 threw a firebomb into American society whose effects are still reverberating.

"The Feminine Mystique" was rambling and badly written, but it identified precisely why women were miserable. Oddly enough, since Mrs Friedan had been a keen Freudian at college, much of the problem lay with Freud, whose theories were now so popular. He had thought of women as inferiors, racked with penis envy, whose only route to fulfilment lay through men. Garbage, cried Mrs Friedan. Women needed simply to be treated as equals and freed to become themselves.

**Black eyes under make-up**

Grateful letters poured in from women readers. Critics, mostly but not merely male, spluttered that she was a danger to the state and a proof of the folly of sending girls

to college. But women now had the political wind behind them. Mrs Friedan got busy, co-founding in 1966 the National Organisation for Women (NOW) campaigning for equal pay, maternity leave, abortion choice and decent child care, fighting for the still unpassed Equal Rights Amendment and, in 1970, celebrating 50 years of women's suffrage by leading the Women's Strike for Equality, some 50,000 souls, through New York City.

Much was achieved, especially on abortion law, but it was not plain sailing. Mrs Friedan's sharp tongue made enemies everywhere. She rapidly fell out with the daft fringe of the women's movement, the bra-burners and ball-breakers and militant lesbians (the Lavender Menace, as she called them), who wanted all-out war. The impatient disliked her incrementalist approach; the class-conscious condemned her for rooting the "woman problem" in the pampered white suburbs, rather than in ghettos and factories.

Part of the difficulty was that she loathed political correctness, gender politics and the gender studies that came to clutter the curriculums of American universities. She also approved of marriage and refused to hate men. Though she claimed her own husband abused her, giving her black eyes which she hid under make-up (in 1969, she divorced him), she insisted that men were victims of women's frustrations as much as women were. This was less a sexual problem than an economic one. It would be solved with equal work, worth and incomes.

When Mrs Friedan died, that Utopia was still distant. But at least she had made sure that post-war America's Ideal Woman was buried at some suburban crossroads, her hair still unmussed, and with a stake through her perfectly calibrated heart. ■







## The first great female architect

INTELLIGENT LIFE, SUMMER 2008

**For the first time, the world's most interesting architect is a woman. Jonathan Meades meets Zaha Hadid**

ZAHA HADID'S practice occupies a former school in Clerkenwell, an area of London that still bears the scent of Dickens. It's an 1870s building designed by the London School Board architect E.R. Robson, who, typically of his profession, was unquestionably formulaic. Still, his was a sound enough formula. Today the high, plain, light rooms are crammed with Hadid's 200 or so employees. Though they are of every conceivable race, they are linked by their youth, their sombre clothes, their intense concentration. They gaze at their screens, astonishingly silently. There is little sound other than the click of keyboards and a low murmur from earphones. They don't talk to each other. It is as though they are engaged in a particularly exigent exam. It feels more like a school than a former school. And it feels more like a factory than a school. If there is such a thing as a physical manifestation of the dubious concept called the knowledge economy, this is it. This is a site of digital industry.

"What is exciting," says Zaha, "is the link between computing and fabrication. The computer doesn't do the work. There is a similar thing to doing it by hand..."

"The computer is a tool," I agree.

"No. No, it's not..."

What then?

The workers on the factory floor—my way of putting it, not hers—are, she says "connected by digital knowledge...They have very different interests from 20 years ago."

Sure. But this does not make immediate sense. It is a matter to return to, that will become clear(ish) in time.

Ten minutes' walk from the practice is Hadid's apartment – austere elegant, a sort of gallery of her painting and spectacularly lissom furniture. It's a monument to Zaha the public architect rather than Zaha the private woman. It occupies a chunk of an otherwise forgettable block. Her route from home to work might almost have been

confected as an illustration of the abruptness of urban mutation. Here is ur-London: stock bricks and red terracotta, pompous warehouses, run-down factories, Victorian philanthropists' prison-like tenements, grim toytown cottages, high mute walls, a labyrinth of alleys, off-the-peg late-Georgian terraces, neglected pockets of mid-20th-century Utopianism, apologetic infills, ambiguous plots of wasteground. It is neither rough nor pretty, but it has sinewy character. It may be ordinary, but it is undeniably diverse. The daily stroll through this canyon of variety is surely attractive to an artist whose aesthetic is doggedly catholic, each of whose buildings seems unsatisfied with being just one building.

If Zaha is offended by the suggestion that constant exposure to such a typical part of London might, however indirectly, impinge on her work, she doesn't show it. But she is faintly bemused. It is as though such a possibility had never occurred to her. This is absolutely not the sort of proposition that gets mooted in the world of Big Time Architecture which Hadid has inhabited all her adult life (she is 57), for many years as a perpetually promising aspirant, a "paper architect" who got very little built but still won the Pritzker prize – the Nobel of architecture – which raises the questions of whether architecture is divisible from building, of where the fiction of design stops and the actuality of structure starts. Today she is this tiny, powerful milieu's most singular star, and its only woman, its only Zaha.

So distinctive a name is useful. It's a fortuity which might just grant her effortless entry to the glitzy cadre of the mononomial: Elvis, Arletty, Sting. The first architect to be so blessed since Mies (van der Rohe).

Architecture is the most public of endeavours, yet it is a smugly hermetic world. Architects, architectural critics and theorists, and the architectural press (which is little more than a deferential PR machine) are cosily conjoined by an ingrown, verruca-like jargon which derives from the cretinous end of American academe: "Emerging from the now-concluding work on single-surface organisations, ►►

▶ animated form, data-scapes, and box-in-box organisations are investigations into the critical consequences of complex vector networks of movement and specularity..."

They're only talking about buildings. This is the cant of pseudo-science – self-referential, inelegant, obfuscatingly exclusive: it attempts to elevate architecture yet makes a mockery of it. Zaha, however, has thechutzpah to defend it. She claims to be not much of a reader of anything other than magazines, so the coarseness of the prose doesn't offend her. The point she makes is that this is the lingua franca of intercontinental architecture. A sort of Esperantist pidgin propagated by the world's major architectural schools – the majority of which happen to be notionally anglophone, yet whose pupils and teachers come from a host of countries – and the world's major architectural practices which are international and polyglot. When Zaha talks about architecture, about urbanism, about the continuing exemplary importance of the Architectural Association (AA) in London, where she studied after a childhood in Baghdad, boarding school in England and university in Beirut (reading maths), she uses this pidgin, and studs it with syntactical mishaps.

"You know, space is an interesting endeavour...you create an interesting...the impact you have on the cityscape. The whole life of a city can be in single block...Break the block, yeh? Make it porous... Organisational patterns which imply a new geometry...The idea of extrusion...One thing always critical was idea of ground, how to carve the ground, layering, fragmentation..." Perhaps being "connected by digital knowledge" is just a way of circumventing the problems inherent in a polyglot workforce, given that verbal expression plays only a minor part in architectural creation. The gulf between clumsy, approximate jargon and precise, virtuoso design is chasmic. And it has some important ramifications. Despite its practitioners' fastidious, perhaps delusional protests that it is a creative and scientific endeavour, architecture is a very big business, one that is involved in the creation and sale of one-off objects: it is a trade dealing mostly in the bespoke.

Now, one consequence of being "connected by digital knowledge" is an enforced internationalism—at the highest tier. So take, for example, the Basque provinces where Santiago Calatrava has built Bilbao's airport, where Frank Gehry has famously built a Guggenheim Museum, where Rafael Moneo has built the (better) Kursaal at San Sebastian, and where Zaha has no fewer than three projects: a new quarter of Bilbao; a sleek, partially buried railway station in Durango, and government offices in Vitoria.

This region, whose paranoiac sense of itself and of its blood-drenched individuality need hardly be emphasised, is becoming a testing ground for exercises in a globalised aesthetic entirely at odds with its vernacular idioms of distended chalets and Hausmannian pomp. Zaha is enthusiastic about this sort of dissonance. She is opposed to new buildings which nod allusively – she would say deferentially – to their ancient neighbours. She regards such buildings as sops to populism.

"It would be interesting to do a large project without looking backwards."

"How large?"

She grins. "A city. A city! Without looking backwards. Vernacular building... it's like minimalism." (I take it that she means neo-vernacular building.) "People can handle minimalism, vernacular. It doesn't disturb them."

Hadidopolis, the dreamed city, would, paradoxically, be less disturbing, less astonishing than a single building by her in an already established environment where the clash of idioms is potentially deafening.

"They still talk about contextual. Ha!"

"They" are her bugbear, the (now rather old) New Urbanists, the begetters of crass, kitschy, retro-developments such as Seaside and Disney's Celebration, both of them in Florida. Her distaste for their twee, anti-modernist escapism is total.

In Zaha's lexicon, contextual might be synonymous with compromised, which is the last word that could be applied to her own work. Bloody-minded, unaccommodating, serious, joyful, emotionally expressive, intellectually engaging: these are more apt. Yet, no matter what she says, each of her buildings is sensitive to its context. Being sensitive does not mean being passive. It is not a question of taking

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a cue from the immediate surroundings, but of making an appropriate intervention that changes those surroundings, which creates a new place and better space. She has 25 projects either completed or under construction, and even the most cursory scrutiny of them reveals an exceptional versatility and a multitude of responses. She has eschewed the temptation to develop the signature that afflicts high-end architects, prompting the accusation that Libeskind or Calatrava or Gehry merely plonk down the same lump of product time and again across the globe. Zaha has style all right, but not a style.

The Rosenthal Centre for Contemporary Art in Cincinnati is blocky, grounded, cubistic; it is unrecognisable as being by the same hand as, say, the Phaeno Science Centre in Wolfsburg, which is taut, dynamic, horizontal and looking to make a quick getaway. The Museum of Transport on the south bank of the Clyde in Glasgow has a silhouette that might be a child's depiction of a city's skyline. Of her cable railway stations in Innsbruck, one is sleek and reptilian, a second fungal, a third a homage to a species of bird that never existed.

Sometimes she seems to be working in steel, other times in butter; here she is chiselling wood, there she is twisting chocolate. A university building on the Barcelona waterfront recalls a poorly shuffled pack of cards. Her winning entry for the new Guggenheim Hermitage Museum in the already architecturally rich city of Vilnius might be an exquisite example of the patissier's art which has melted under a merciless sun. The A55 motorway's descent into Marseille, one of the most thrilling in Europe, will be further enhanced by the headquarters for the CMA-CGM container company, built in the cleft where raised carriageways bifurcate. This 147-metre tower will be the highest in the burgeoning city. It is a perhaps reproachful complement to the effortful wackiness of neighbouring projects, such as Massimiliano Fuksas's Euromed Centre: Zaha's tower is as stately as a duchess's ballgown, and again very different from anything else she has done.

How do she and her collaborators, chief among them Patrik Schumacher, manage to avoid the besetting architectural tic of self-plagiarism?

"Don't draw on computer. Don't draw and then put it onto computer...I have five screens...Different projects...You work on developing, oh, a table while at the same time you're developing masterplans. It's like you have different information coming from different directions. Like photography. Out of focus... then you zoom in. I'll have a sketch – it'll take a few times before it takes. Sometimes a few years. You see, not every idea can be used right then. But nothing is lost. Nothing."

So a shape or form devised initially for a piece of furniture may be fed a course of steroids and become a building?

"No. That's not what I'm saying. Doesn't work like that."

I rather suspect that Zaha has an ancient fear: that to discover how her processes work would be to jeopardise them.

The idea that London comprises a series of villages – an estate agent's vulgar conceit – goes lazily unchallenged. Villages are small, hick, ▶▶

► inward-looking. London is not. London pioneered sprawl: it was a horse-drawn precursor of Los Angeles. It is a city of stylistic collisions and astonishing juxtapositions. Which might be reckoned to make it susceptible to imaginative and unorthodox architectural interventions. There is, after all, no classical homogeneity to rupture, no defining idiom which must be adhered to.

Yet Zaha Hadid – an architect who is nothing if not imaginative, nothing if not unorthodox, who is feted throughout the world as, ugly word, a starchitect—still does not have a single building to her name in London, despite having lived and worked here for three and a half decades. There are, to be sure, schemes – the 2012 Olympic Aquatic Centre, and a building for the Architecture Foundation in Southwark; but the former's budget is being persistently called into question and pared, and the other has not progressed since it was first mooted several years ago.

It would be disingenuous to feign surprise at this absence of a work by her in her adopted home. A catalogue of circumstances militates against her. She is extraordinarily engaging but equally obstinate. She has never pretended to be anything other than an artist. An artist moreover of a particularly dogged sort, one who has kept alive, or revived, the unfashionable notion of the avant-garde. And who has created her own fashion rather than blindly following the herd like, oh, 99% of architects.

She is, evidently, not English; her sensibility is not English; her lack of timidity is not English; her earnestness is not English; nor her resolute ambition. Then there is the question of her sex.

Architecture is dominated by men to a degree that no remotely kindred endeavour is. This has always been the case. The history of architecture can be written, often has been, with no mention of women save, perhaps, of monarchs, aristocratic grandees, philanthropists: patrons, not makers. The contention that women are less adept than men at three-dimensional thought doesn't begin to account for their acutely disproportionate position in British architecture. According to a Royal Institute of British Architects (RIBA) survey in 2007, only 14% of practising architects in Britain are women. The percentage of qualified women architects is 38%, but women drop out at an alarming rate – so alarming that the former RIBA president George Ferguson commissioned an investigative study.

He need hardly have bothered. Its conclusions were thoroughly predictable: low salaries and long hours (which equally afflict men), lack of preferment and office machismo (which probably don't). The outstanding woman architect of the generation before Zaha's, Georgie Wolton, opted for a (successful) career as a landscape architect having designed just one major building, a studio block in the north London district of Holloway. Sarah Wigglesworth (whose most celebrated building is also in Holloway), Amanda Levete and Cécile Brisac are London architects currently producing work of the highest order, much of it outside Britain, in cultures where there exists less bias against women. The volume and prestige of commissions received by such practitioners as Manuelle Gautrand in France or Tilla Theus in Switzerland is unthinkable in Britain.

Of course, the British bias is not merely against architects who happen to be women. It is against architects who happen to be architects.

British architects who aspire to anything more than polite apartment buildings or self-effacing, production-line offices have to prove themselves abroad. That is where creative reputations are made.

**“She has never pretended to be anything other than an artist.”**

Jonathan Meades

This has been the case since the early 1970s, when public confidence in architecture plummeted and architects came to be regarded as licensed vandals committing a sort of aesthetic *trahison des clercs*.

“No! Later,” Zaha corrects me. “It was 1975, six. Definitely.” By that time, she had been at the AA for four years. It is telling that popular antipathy towards the discipline took so long to breach that institution's carapace of ivory exclusivity.

She is certain of the date. For that was when, incredulous and indignant, she witnessed the transformation, the near-apostasy, of some of her dogmatically modernist teachers. “Between one term and the next,” she says, Leon Krier became a former modernist, literally a post-modernist. Krier lurched, in the bipolar way that fundamentalists will, from preaching the rhetoric of imaginative, technologically based rationalism, to becoming a groupie of the then still incarcerated Nazi war criminal Albert Speer, an architect whose formidable banality was matched only by the megalomaniac scale of his (mostly, thankfully) unbuilt projects. Krier would, frighteningly, go on to become the Prince of Wales's architectural adviser, and thence the brain (if that's the word) behind such volkisch excrescences of the New Urbanism as Poundbury, the cottagey slum of the future disgracefully dumped on a greenfield site on the edge of Dorchester.

“By 1978 he is god of historicism... You know – that attitude that you can't go forward without looking back, that's the historicist position, post-modern position.” It's one she deplores, to put it mildly. Zaha seems to consider post-modernism a sort of betrayal. Which may be going a bit far. Surely, I suggest (adapting Duke Ellington's maxim about music), the question is not taxonomical, not what style a specific building belongs to – post-modern or any other – but whether it is good or bad. She appears not to hear. She asks for more tea. She snuffles. She has a cold.

But then I too would develop a cold if someone had put to me a proposition that impertinently questions the very core of my aesthetic. She is contemptuous of the sort of relativism that even hints that the often infantile, mostly eager-to-please idiom of the Thatcher years is serious architecture. She is, perhaps, right. Accessibility merely means lowest-common-denominator populism, commercial opportunism, the subjugation of the creator by market researchers, and of originality by second-guessing what the “people” will find acceptable. Zaha has been fighting all her professional life against the architecture of the marketplace, struggling to assert the paramouncy of the artist, ie, of herself, of an uncompromised vision. She had to bide her time a long while.

She was the victim of a shift in taste. She could, chameleon-like, have followed Krier and many of her AA contemporaries and near-contemporaries, who discovered themselves suddenly sympathetic to upside-down diocletian windows, playground colours, bluto columns, oafish pediments: the components of a new architectural “language”. On the other hand there were those who invented with aplomb.

She tells me she doesn't want to talk about other architects' work before I have even broached the matter. Happily she isn't as good as her word. An architect with a detailed knowledge of architectural and urbanistic history is, astonishingly, a rarity. Yet the living and the dead constellate her discourse. They are not the figures one might expect. Despite the status she has achieved she still, implicitly, considers herself an underdog rather than a star. There is something heartening and generous about the way she enthuses about the work of Douglas Stephen, an unacknowledged genius who designed less than a dozen buildings in a lifetime of scrupulously high standards and absolute integrity. She is enthusiastic about the Italian rationalist Aldo Rossi, whom she describes as forgotten. Forgotten by whom? I wonder.

“Forgotten,” she insists.

I point out that his rationalism was hardly all-encompassing and that whenever he was in London he would go to gaze at the clunkily historicist War Office in Whitehall. She smiles, as though to acknowledge the disparity between the architect and the man. She admires Rodney Gordon, maybe the greatest of the British brutalists, a sculptor in concrete whose finest buildings (the Tricorn in Portsmouth, the Trinity in Gateshead) have been or are about to be demolished.

Would we burn a Bacon? Take a hammer to a Gormley? No. But in Britain architecture is peculiarly expendable. British short-termism ►►

► is expressed in two ways. Buildings, notably those of the 1950s and 1960s, are wantonly torn down before they have been allowed the chance to come back into fashion. This, of course, is not exclusive to Britain. Even in France, which has a much greater appreciation of modernism, Claude Parent's space-age shopping centres at Reims and Sens have been disfigured. We rue the loss of High Victorian buildings of the 1860s. Why will future generations not rue the loss of those made in the 1960s, during another of those rare periods when British architecture abandoned its habitual timidity?

Secondly, buildings used to outlive humans, not least because the process of construction was so long and laborious that permanence was a desirable aim. Today's corporate presumption is that a building's duration will be hardly longer than a few decades. Its lifespan is in inverse proportion to our own continually stretching sentence. This is disposable-building syndrome, and one consequence of it is that quick delivery and low cost are valued above all other considerations. Much architecture is, then, increasingly concerned with the provision of what are in effect temporary structures. Zaha has an unfashionable distaste for such ephemerality. She must, like any architect, worry about what will become of her buildings. One of her earliest completed projects, a pavilion for the study of landscape at Weil am Rhein on the German-Swiss border, is already looking as tatty as a sink estate, while the fire station she built nearby for the furniture manufacturer Vitra's factory was considered inappropriate for that role and has been turned into a museum of chairs.

A consequence of short-termism is standardisation. "London is becoming more and more even. I don't like current work here. I'm not against new projects, obviously I'm not. But there's no planning here, no critique about what is coming next. There is a responsibility on the city to impose – not, not, ah, rules but... quality. The state should invest in architecture like in Spain, Holland. But the dynamic here, it's all corporate..."

Again, it always has been. Aesthetic dirigisme is as alien to Britain as economic dirigisme. Public building is the exception: the long third quarter of the 20th century – the years of abundant social housing, of new hospitals, theatres and libraries, of the new universities and their architecturally enlightened chancellors – were atypical.

"Yup," she sighs and shakes her head. "London: city of lost opportunities."

That's largely because London lacks the sort of patrons the city needs: wilful, vain, philanthropically inclined plutocrats with a taste for self-advertisement, endowment and high-art museums rather than for football grounds. Collecting buildings is a very expensive hobby. There is no Getty, Guggenheim, Whitney, Vanderbilt or Rosenthal here.

Zaha doesn't seem embittered but, rather, wearily resigned. As well she might be, for while London is unquestionably enjoying a building boom, it is equally suffering a blandness boom. The private-finance initiative does not encourage audacity. Indeed, it is infected with an almost totalitarian conviction that architecture should be useful rather than beautiful or striking or marvellous. And most architects duly oblige, for they know who calls the tune. It is as though they pride themselves on the design of risk-free buildings whose primary attribute is that no one will notice them, so no one will take offence. (They are wrong. Blandness on a massive scale is offensive: just look at Southwark Street, across the river from the City of London, where the prolific commercial practice Allies and

## "London: city of lost opportunities."

Zaha Hadid

Morrison has committed some sort of crime against streetscape which Zaha loyally refuses to condemn.)

Why then does she base herself in a city that, if not professionally antagonistic to her, has been hardly welcoming?

"I was teaching here."

But she was also teaching at Columbia, Harvard, Yale, Hamburg, Vienna...

"Vienna has the same problems as London."

What are they?

"It's historic city."

But many of the cities in which she has buildings under construction are equally historic. Naples, Madrid, Strasbourg, Barcelona, Seville. And as for Rome...

"I'm in London because the best civil engineers in the world are here."

Civil or structural engineers are unquestionably the scientists without whom architects would not exist. But, given the internationalism of both architects and engineers, it is a truly bizarre reason. One is inclined to suspect that it's a professional disguise that masks a private inclination.

"I don't know if I'll ever do a big project in London...But I do have a take on the city."

That take is as much a flâneur's as an architect's. Over 20 years ago, Zaha envisaged a linear city down the Lea Valley and another around the Royal Docks. The latter has come to pass, but in typically London manner – piecemeal, unco-ordinated, scrappy, unambitious. And the Lea Valley is being cleared, cleansed, to host the Olympic games, a trophy coveted by emerging tyrannies, tinpot totalitarians and third-world dictatorships. Tactfully, and atypically for so opinionated a woman, she refuses to diverge from the party line and mutters some right-on stuff about the games' "legacy". Maybe she believes it, maybe not.

I wonder, because Zaha the flâneur has an immense appetite for a very different London, an insatiable curiosity which she reveals only obliquely. She palpably appreciates the very oddities of the area that the Olympic site will occupy, the atmospheric terrain vague of abandonment, dereliction and toxic canalisation.

When Zaha talks about anything other than architecture, she employs an urbane vocabulary, a flourishing grammar, and even the definite and indefinite articles. She is fun. On how London has changed socially: "The kids cannot believe it when I tell them about the King's Road in those days, cannot believe it." She is eloquent about parties, friends, flu remedies, clothes (she nearly always wears black, though ►►

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▶ she professes to pine after the days of colour), a tardy florist, a driver whose limited comprehension of sat-nav prompts him to put in “crescent” rather than the name of the crescent. Her word-power expands miraculously.

You might deduce that a different part of the brain is activated, that architecture is confined to a ghetto that is actually cut off from language – pre-verbal or extra-verbal. Zaha is neither dyslexic nor left-handed, two conditions which afflict a number of extravagantly gifted architects.

The awkward struggle to describe the products of her capacious imagination is hampered by her disinclination to employ simile, which, though it might clarify, would undermine her achievement. To compare her work to something already existing would be to detract from it. For me to state that her buildings are like something – frozen napkins, or origami in a hurry, or squeezed-out tubes of ointment, or a carnival dame swaying in a frock, or a flock of starlings cartwheeling like iron filings subjected to a magnet, or baroque drapery – is explanatory shorthand. It is not to debase them, far from it. But I didn't make them. They are admirable for a load of reasons.

Her work derives, she says, not from observation of extant architecture. Nor from formalism. She claims to take nothing from organic morphology. No ammonites, no sharks, no petals. It all begins with

painting, with pure abstraction.

But a few moments later she changes her mind. She contradicts herself and attributes her inspiration to landscape, topography, sedimentology, geological patterns... Indeed, one of her pieces of furniture is called Moraine, and there is an unmistakable acknowledgment of a badlands roster of folds, prisms, hoodoos and organ pipes, a nod to the shifting shapes of dunes and drifts. European architects such as Lars Sonck, Antoni Gaudi and Gottfried Boehm have represented rock formations with differing degrees of naturalism. Zaha goes further. Buildings are static objects. Throughout the 20th century, architects vainly attempted to imply that structures were on the move, to invest them with speed, one of the essential properties of modernity but one which is, alas, necessarily absent even in borax buildings that are streamlined or googie ones which borrow the imagery of aero-planes or rockets. Much of Zaha's work implies a different sort of speed – the slow passing of millennia, the gradual attrition of wind, the grind of the sea on stones, the way rain turns chalk into pinnacles and spires. There is a scent of erosion, of time's inexorability, of future fragmentation. Of mortality. ■

Jonathan Meades is a writer, film-maker and artist.

## How Joni Mitchell changed music

INTELLIGENT LIFE, APRIL 2015

### David Bennun on her undervalued career

THESE days, Joni Mitchell's appearances in the news are more often prompted by her opinions (rebarbative) or her health (erratic) than her music. But after her hospitalisation in Los Angeles last week, her fans had reason to wonder if they were about to lose her, which inevitably concentrated minds on her career. “Folk legend” was the phrase frequently invoked in coverage of the story, alongside an emphasis on her lasting impact upon women performers. It's not exactly damning her with faint praise, but it does misrepresent and undervalue her.

To call Joni Mitchell undervalued is, on the face of it, an obvious nonsense. No one questions her greatness. Her seat atop Parnassus is assured. It's more a matter of what she's valued for. Mitchell's most enduringly popular work is found on the series of albums she recorded between 1969 and 1974: “Clouds”, “Ladies of the Canyon”, “Blue”, “For the Roses” and “Court and Spark”. Play chronologically through the best-remembered songs from those records and you'll hear a bright, slightly mannered but evidently special folk artist, sometimes keeping only just the right side of the line between the charming and the twee, as she develops an astonishing depth and range, both musical and emotional. Soon the songs unhook themselves from their skeletons. They flip and they fly. Her voice takes on an acrobatic naturalism, suddenly leaping with unfettered joy or folding itself back into marvellous and unlikely shapes. Of all the 1960s folk artists who remained within that idiom, only Bert Jansch, with his wild, eerie, intense music and flying finger-picking style, did anything like as much to stretch its limits.

That, then, is what Mitchell is celebrated for, and rightly so. She made wonderful records and she reconfigured the boundaries of her chosen music as she did it. And she was the inadvertent godmother to generations of female singer-songwriters—many of whom, as is the way with these things, homed in on and mimicked her confessional introspection, while lacking the imagination and talent that licensed her to express it. That's no fault of hers, of course. That's simply how artistic influence works.

Yet it's here that we fetch up against the deficit in her reputation. When Mitchell's influence is mentioned, it is almost exclusively in terms of how she inspired those female singer-songwriters, as



if a female artist may be the creative begetter only of other women. Elvis Presley or The Beatles or Bob Dylan, we are customarily told, revolutionised popular music. Not one part of it. Not for men alone. Popular music, in its entirety. But Joni Mitchell simply set her own people free. Which she did, and it's no small thing. But it's not the whole story.

The rest of the story takes place, mainly, in the second half of the 1970s—although it begins with “Court and Spark”, just as the first part ended with it. Jazz sashayed into Mitchell's music as early as “Blue” (1971), where you can hear its liberties with tune and tempo, its improvisational loucheness, flicker in and out like a candle flame in the corner of the room. By “Court and Spark” (a wonderfully apt title) it had sauntered much closer to the centre of things. That album began a run of releases—including “The Hissing of Summer Lawns” and “Hejira”—which, in their ease and delicacy, their light-footed exhilaration, their exquisite melancholy and sheer mind-bending fearlessness, rank alongside the greatest bursts of invention in pop: Dylan's first electric phase, say, or Stevie Wonder's astonishing series of early 1970s recordings.

Even if Mitchell's final two albums of the decade, “Don Juan's Reckless Daughter” and “Mingus”, went so far over into experimental territory that they lost their hold on her mainstream audience, why aren't the previous three feted as they should be, rather than much ▶▶

► admired? While the impact of Mitchell's folk-ish records is direct and clear, these albums offered to posterity not so much a sound as a spirit: an opening up of possibilities, an abandoning of border posts. This trio of albums is one of the most artistically successful adventures in musical fusion ever undertaken by a star with so much to risk. They rival Miles Davis and John Coltrane at their sublime best, and constitute the high watermark of a tide that carried jazz back into modern pop.

It might be Mitchell's gender that has prevented this music receiving its due, or it might just be one of those things: a cultural

preference for the pretty over the audacious. I suspect a combination of both: the high-cheekboned high priestess of dear-diary dream-girls sits more easily in our canon than the strange, unnerving and uncompromising explorer who succeeded her. Odder incarnations have come along since, including her present one. But none can undo those earlier guises, each in its own way a marvel. ■

David Bennun is a critic and the author of a memoir of life in Africa, "Tick Bite Fever"

## Obituary: Miriam Rodríguez Martínez

# A voice for the missing

THE ECONOMIST, MAY 2017

**Miriam Rodríguez Martínez, campaigner against the drug gangs of Mexico, was killed on May 10th 2017, aged 50**

THE *narcos* who infested San Fernando, in Tamaulipas state in north-eastern Mexico, did not always trouble to bury their victims. They left them by the side of Highway 101, a road some people said was the most dangerous in the country. Or they took them to some abandoned ranch in the rolling hills round the town, shot them and piled them up in one room. They did that in 2010 with 72 migrants from Central America, pulling them off their buses as they tried to travel to the United States.

Sometimes, though, the killers would hide their victims. Over several months in 2011 the police found 47 mass graves outside town with 193 bodies, probably bus passengers. And more graves could turn up anywhere, in the hard, stony ground among the thorn bushes. You could tell they were there because a bad smell hung around, or the ground was sunken or disturbed. Or you might spot a piece of bone. Miriam Rodríguez knew such signs well, because in 2014 she found, in just such a place, what remained of her daughter.

No officials had helped her. Frankly, in Tamaulipas, it was useless to ask them. The police and the state people were often hand-in-glove with the *narcos*. If not, they were helpless in the face of all the violence. Between 2006 and 2016, with war breaking out between the Zetas and the Gulf cartel over control of the main drugs route to the United States, 5,563 people disappeared in Tamaulipas. After the massacre of 2011 (everyone in town called it "the massacre"), it took a year for police to identify just 34 bodies. When Karen was abducted in 2012, just 14, just a child, Miriam refused to wait. She had the time and the money to find her and track her killers down, though it took two years.

Up till then, she had lived with the lawlessness as everyone else in San Fernando had. In the early 2000s the *narcos* had been around, but not too bad. If they came to the municipal market in the Plaza Hidalgo, where she ran her belts-and-bags business, they even paid for what they took. But the showy processions of SUVs with tinted windows, cruising slowly through town, became more menacing. Then the Zetas, the most brutal of the drug gangs, began to take people. The randomness was terrifying. Why, for example, did they drag away three women from the taco place beside the highway where they gave you two beers for the price of one? Why kill 193 people who had just been on the bus to Reynosa or who knew where? After that, people began to leave town; perhaps 10,000 left. Those who stayed hardly dared go out, and the shops were trashed anyway. The federal government sent the army in, and that helped, but not enough, or Karen would not have gone.

From that day in 2012, Miriam's life changed. It became a mission. She had always been strong, full of energy, a hard worker. Now her singlehanded efforts got 16 charged for Karen's abduction and 13 sent to jail. Day after day she went to the courts to make sure they stayed there. She also began to campaign on behalf of all San Fernando's families with relatives who were missing. She set up two organisations for the *desaparecidos*, arranged Mothers' Marches through

town, supported the families, drew up a list of 800 victims to make a database, and hounded officials at every level of government.

Nothing and no one could shut her up. *No se andaba por las ramas*, said her friends; she didn't beat about the bush. In a country where violence cowed too many people and journalists were killed for their reporting, she talked, and talked. Under her elegant jackets, her chunky earrings and glittery fake nails, she was a tigress. She carried a gun, too, in case any of the Zetas tried it on with her. They had once seized her husband, bundling him out of his work and into a car, but she had roared after them in hers and called in the army to arrest them.

Possibly she was too loud. She had other causes, too, such as complaining about outsiders renting space in the market, keeping locals out. At one point in her campaign for the disappeared, fed up with officials doing nothing, she appealed to the UN and the Inter-American Commission on Human Rights. In March she went eagerly to Texas to join an international procession of protest against Donald Trump's immigration policies. It was called the Caravana contra el Miedo, against fear. She liked that.

### Unanswered calls

She did want protection at home, though. She had a right to it, as she told any official who would listen. In March came the news of a massive break-out from the main state jail, 29 *narcos*, among them two she had put there for taking Karen. At that point she closed her business, not wanting the Zetas to track her to it, and by April she was sure that one day they would kill her. One policeman said he was on call for her; she rang him 30 times one day around four in the morning, testing, but got no answer. The police claimed to patrol past her house three times a day; she never saw them.

Mother's Day, May 10th in Mexico, was a date to be treated with tamales in bed and serenades. She had two other children to spoil her, though no Karen, for whom she had done her best. Her day ended when, at about 10.30pm, a hustling band of Zetas called her out of the house. If they had waited a second, she would have told them exactly what she thought of them. ■



## Obituary: Vera Rubin

## Dark star

THE ECONOMIST, JANUARY 2017

**Vera Rubin, an American astronomer who established the existence of dark matter, died on December 25th 2016, aged 88**

WHEN in 1965 Vera Rubin arrived for a four-day stint at “the monastery”, as the Palomar Observatory, home of the world’s largest telescope, was dubbed, there were no women’s lavatories. No female astronomer had ever worked there before. How could they, when it would mean walking home late at night?

It had been the same thinking at high school. When she told her revered science teacher of her scholarship to Vassar he said: “You should do OK as long as you stay away from science.” She was the only astronomy major to graduate there in her year. When in 1947 she requested a graduate-school catalogue from Princeton, the dean told her not to bother: women were not accepted for physics and astronomy. George Gamow, later her doctoral adviser, said she could not attend his lecture at the Johns Hopkins Applied Physics Lab “because wives were not allowed”.

She was indeed a wife. She married—aged 19—Robert Rubin, a physicist whom she followed to Cornell, sacrificing her place at Harvard. He was, she said, her greatest ally. Later, when she attended night classes at Georgetown University, he drove her there, eating his dinner in the car until he could drive her home, while her parents baby-sat. Still, she found raising four children “almost overwhelming”. When she halted her academic career—the worst six months of her life—she wept every time the *Astrophysical Journal* arrived in the house. But, working part-time, she made sure to be home when the kids returned from school. She never inspected their rooms, she said, and they grew up fine, all with PhDs in science or maths.

Her master’s thesis was, her Cornell supervisor said, worthy of being presented to the American Astronomical Society. But she was about to give birth, so, he suggested, he would present it—but in his name.

She refused. Her parents drove up from Washington and took their 22-year-old daughter, nursing her newborn, on a gruelling snowy trip from upstate New York to Philadelphia. She addressed the roomful of strangers for ten minutes about galaxy rotation, soaked up some patronising criticism and a smidgen of praise—and left.

Though rows were unpleasant, defeat was worse. “Protest every all-male meeting, every all-male department, every all-male platform,” she advised. At Palomar, she made a ladies’ room by sticking a handmade skirt sign on a men’s room door (she returned a year later: it was gone).

She’d never anticipated such problems. Her father encouraged her childhood habit of watching meteor showers, leaning out of her bedroom window and memorising their geometry in order to look them up later. He even helped her make her first telescope, from a cardboard tube; she had already made her own kaleidoscope. She hadn’t ever met an astronomer, but it never occurred to her that she couldn’t be one.

But her early research was largely ignored. In other work, male astronomers elbowed her aside. Fed up, she looked for a problem “that people would be interested in, but not so interested in that anyone would bother me before I was done.”

She found it. In the 1930s Fritz Zwicky, an idiosyncratic Swiss astrophysicist, had suggested that the brightly shining stars represented only a part of the cosmic whole.

There must also be “dark matter”, unseen but revealed indirectly by the effects of its gravity. That conjecture languished on the margins until Ms Rubin, working with her colleague Kent Ford, examined the puzzle of galactic rotation. Spiral galaxies such as Andromeda, she proved, were spinning so fast that their outer stars should be flying away into the never-never. They weren’t. So either Einstein was wrong about gravity, or gravitational pull from vast amounts of something invisible—dark matter—was holding the stars together.

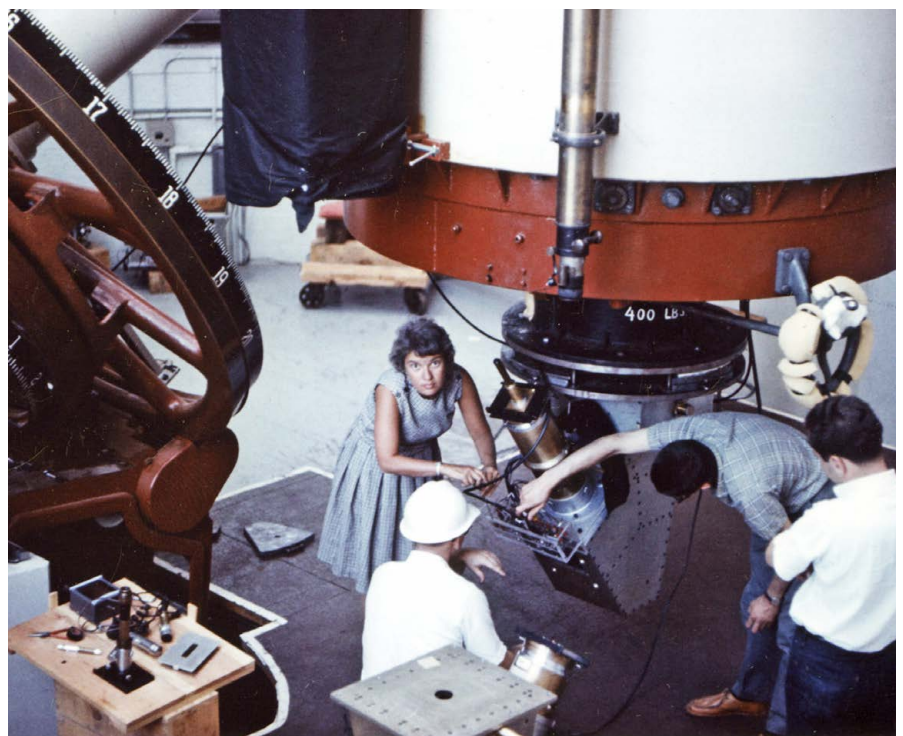
The discovery reshaped cosmology, though initially her colleagues embraced it unenthusiastically. Astronomers had thought they were studying the whole universe, not just a small luminous fraction of it. New theories developed on what the matter might be—but its fugitive particles escaped all direct detection.

Some are worried by the absence. Ms Rubin was unbothered. Astronomy, she reckoned, was “out of kindergarten, but only in about the third grade”. Many of the universe’s deep mysteries remained to be discovered by eye and brain, with all the joy that involved.

**Shining a light**

There were other scientific feats, too: in 1992 she discovered NGC 4550, a galaxy in which half the stars orbit in one direction, mingled with half that head the other way. She won medals aplenty: the Gold Medal of Britain’s Royal Astronomical Society (last awarded to a woman in 1828) and America’s National Medal of Science. Princeton, which had once shunned her, was among the many universities to award her an honorary doctorate. She gave notable commencement speeches.

The plaudits were pleasant, but numbers mattered more: the greatest compliment would be if astronomers years hence still used her data, she insisted. She was a perennial favourite for a Nobel prize in physics—only ever awarded to two women. That call never came: like dark matter, her fans lamented, she was vitally important, but easy to overlook. ■



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