

## a ---- {Small} ---- miracle

*After a car accident left her in a coma, a student's remarkable recovery culminated in a return to Brandeis and ultimately to a life on her own.*



Photo by Mike Lovett  
**Tessa Venell '08**  
BY EVAN SWEENEY

**By all accounts,** Tessa Venell '08 should be dead.

At the very least, she should be in a vegetative state, tubes erupting from her, machines beeping insistently around her, her body sunken into the hospital bed — alive, but dead behind the eyes, her once-active mind wiped clean.

Fortunately, that didn't happen. On occasion, reality defies logic and probability.

That's why she is sitting in her parents' living room two days before Christmas, instead of in a hospital bed or a wheelchair. That's why she can walk to greet you at the door when you enter her parents' house and offer to pour you a cup of coffee.

Nearly five years ago she couldn't so much as open her eyes. Just after 1 a.m. on July 26, 2006, Venell, entering her senior year at Brandeis, suffered a traumatic brain injury (TBI) when her 2002 silver Subaru Legacy careened off Goose Pond Road in her rural hometown of Acton, Maine. To this day no one knows exactly what happened that night. Blood tests at the hospital revealed she was below the legal limit of intoxication, and the accident report says only, "Entire vehicle damaged."

Skid marks indicated she swerved hard to the right, perhaps to avoid something as she came around a slight curve in the road. Maybe it was one of the deer that populate the area, or a drunk driver coming back from the bars.

Luckily, Jeff Munroe, a volunteer first responder for the nearby Limerick fire department, also happened to be on the back roads of Acton early that morning. Munroe came around a bend and noticed a trail of gravel kicked across the road — a fairly common occurrence in Acton, where many residents own off-road vehicles. However, he instinctively slowed down and scanned the area. Seeing nothing, he began to accelerate, but hesitated.

"I dunno, something just struck me wrong," Munroe says in his thick Maine accent. "Something just wasn't right there."

Acting on his gut, he stopped and squinted into the darkness.

"I didn't see anything at first," he says. "It took me a little bit to actually figure out what it was that was out of the ordinary." A dim light caught his eye — the vanity light from the car's visor. That's when he noticed a vehicle in the woods wrapped around a tree. He pulled his truck to the shoulder, aimed the headlights on the car and walked roughly 75 feet toward the wreck. The car had spun 180 degrees and ended up parallel to the road, facing the direction it had traveled from, the driver's side door smashed against the tree.

### Sidebar Story (click on title)

[Listening to Brain Injury Survivors](#) – LS Lorenz

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Dr DOUG KATZ '76



About halfway to Venell's Subaru, Munroe saw her hand slumped over the steering wheel on the dashboard. He rushed to the car but couldn't get into the passenger-side door, so he scrambled over the roof to the driver's side. Venell's arm was hanging out, dried blood caked to the outside of the door. The hood was cold, a sign that she been there a while. He grabbed her wrist anyway, and, disbelieving, felt a faint pulse.

When Doug and Julie Venell arrived at Maine Medical Center in Portland that July night, they beat the LifeFlight helicopter that airlifted Tessa to the hospital. By the time they actually saw their daughter she was unrecognizable: her face and body swollen, bloody tubes cascading from her body, her dirty-blond hair shaved in preparation for brain surgery.

Her injuries were extensive. The driver's-side door had crushed her left shoulder blade as well as three ribs on her left side, causing a lung contusion. The impact pinned Venell against the center console, which shattered her right femur. Eventually, surgeons had to insert a titanium rod through her leg. Her left forearm was fractured and there was hemorrhaging in her intestine.

But her brain suffered the most critical injury and was swelling due to the trauma to her head. Surgeons had to insert a cerebral shunt — essentially a tube drilled into the top of her skull — to release intracranial pressure.

*To keep it simple, Tessa is in a coma. She is off all pain and sedative medications. Her long-term prognosis is a big question mark. That said, her preaccident status was about as favorable as could be. Patients with higher intellectual capacity, with more of a disciplined and motivated personality, with supportive family and friends, and with good overall physical health are the ones who recover better. The odds, though, are not in her favor, but we are dismissing that part of the equation for now. For those of you who know Tessa well, she would be driven to excel at this type of test.*

— Venell's mother, Julie, writing in CaringBridge, an online site where families can chronicle health-related information about loved ones, Aug. 7, 2006

"They made it very clear that the first thing they were going to treat was the head and not worry about the broken bones," her younger brother Dylan remembers. "They were not as important as her brain."

Surgeons removed the shunt a little over a week later, indicating that the intracranial pressure had evened out, a good sign she was improving. But a second MRI revealed massive brain trauma.

"When they did the second MRI scan they said she had this shearing, not just in one spot, as if you fell off your bike and hit your head. It was like her whole brain was just scrambled," says her father, Doug.

After reviewing the MRI, one fifth-year medical resident estimated Tessa had a 10 percent chance for a functional recovery. In the online journal her parents updated daily, her mom wrote simply, "We are not accepting that prognosis."

"They define 'functional' as being able to feed herself and dress herself, so that wasn't going to college and living on her own in Boston, that was just maybe she wouldn't be drooling in a wheelchair," Julie Venell says.

Venell's brain injury was categorized as a diffuse axonal injury, which occurs during a very sudden inertial acceleration or deceleration. *The brain is displaced inside the skull, stretching and shearing, or disconnecting, the microscopic fibers known as axons. It was like reaching into the back of a TV and ripping out all the wires.*

Doctors measure the severity of a brain injury on the Glasgow Coma Scale, which ranges from three at the lowest, least cognitive end, to 15, representing a typical, alert person with no neurological deficiencies. When Venell entered Maine Medical Center, they classified her as a five, leaving doctors to wonder whether she would make it out alive.

"At that level of injury there is a high mortality," says Dr. Doug Katz '76, the brain injury program director at Braintree Rehabilitation Hospital and associate professor of neurology at Boston University. "Between 33 percent and 50 percent of people don't survive at that level."

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*We are grasping onto these small things because the neurosurgeon said that there is just a lot of waiting ahead of us — possibly with no changes. I asked if neurons in the brain can repair themselves and he said that in young people it is possible, to a degree. So then we are only asking for a small miracle.*

— Julie Venell, CaringBridge journal, Aug. 6, 2006

If anyone could overcome these odds, it was Venell. In high school she was a straight-A student with a bubbly personality who graduated in the top 10 in her class, ran cross-country, joined the math team, was elected class president and edited the school newspaper. At Brandeis, she was the most athletic of her friends and the most driven, opting to take five classes each semester instead of the usual four.

When she was admitted to Braintree Rehabilitation Hospital in Braintree, Mass., — selected by her parents for its strong neurology department — on Sept. 1, she was a fraction of that person. The left side of her body was paralyzed. Her eyes were open but vacant. She had trouble following simple commands like shaking hands or giving a thumbs up. Her brother said she had zombie eyes.

She scored 10 out of 23 on the JFK Coma Recovery Scale, a measurement used to evaluate patients emerging from unconsciousness. But five days later she was up to 18. Two weeks after that she began moving her left leg and writing with her right hand. Days later she began speaking.

The hospital's relative proximity to Brandeis turned out to be ideal. Friends visited weekly, coordinating groups so large they had to wheel Venell out of her room and into the hospital's function room to fit them all. She would scrawl her thoughts on a pad of paper when she couldn't articulate them.

"We all loved Tessa very much and we thought familiar faces and voices ... we didn't know what it was doing, but we all hoped it would help in her recovery," says Courtney Rand '07, a close friend of Venell since they were roommates freshman year. "We would bring pictures, anything we thought could maybe bring her back."

It seemed to help. Soon she progressed through the minimally conscious and confusional states, two important milestones in TBI recovery.

"She was very inquisitive," says Alexis Roche, Venell's physical therapist at Braintree. "She was always asking why she was doing certain things. While a lot of patients go along blindly, she wanted to understand everything." On Dec. 9, 2006, after 100 days of rehabilitation, she went home, with her sights set on returning to Brandeis.

But her neurologist had doubts. "At that point, even though she was a lot better and able to learn and remember new information, if she had asked me, 'When can I go back to Brandeis?' I'd have said, 'Let's wait and see,' meaning, 'I'm not sure you'll ever really be able to go back to Brandeis,'" Katz says.

"I didn't notice or focus on the things that were still not healed — I just wanted to get back," Venell says. "I felt out of pace with my friends. I had gone through three years with them and they were all graduating, and I was in the hospital."

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*yesterday i got to have lunch with 10 of my therapists although they made me order the lunch and calculate the bill. all the nurses have made special visits to say bye before they leave for the night.*

*onto the next stage...*

*love, tessa*

— CaringBridge journal, Dec. 8, 2006

After returning home from Braintree, Venell continued outpatient physical, occupational and speech therapy for six months at Portsmouth Regional Hospital in Newington, N.H. By September 2007 — just 13 months after the accident — she returned to Brandeis to complete her degree in international and global studies.

“Tessa’s recovery has special meaning to me in lots of different ways,” says Katz, who graduated from Brandeis 35 years ago and even lived in Shapiro, the same freshman dorm as Venell. “In one way, because she is a remarkable person who made such a remarkable recovery and beat all the odds. And the fact that she was able to return to Brandeis, my alma mater, makes it even that much more special.”

For Venell, Brandeis was more than just about finishing her degree; it was a return to independence that served as the next step of recovery.

“It was exactly what she needed,” says Venell’s mom Julie. “She needed the intellectual stimulation and the challenges, and going to class and socializing. If she had stayed at home, we would be doing everything for her still. We’d fix her meals and we’d do her laundry and we’d hurry up and pick up after her, but at Brandeis she had to do all that herself. And that’s what she needed to figure out. It was a perfect steppingstone to being out in the real world.”

Few saw that growth as regularly as Dan Perlman, associate professor of biology and chair of the environmental studies program at the time. His most important title during that semester was Venell’s adviser.

By December 2007 she was asking Perlman about applying for grants to go to Beijing to make a film about the Chinese environmental movement prior to the 2008 Summer Olympic Games.

“There’s no way in hell,” Perlman thought. He had watched her struggle through two classes that first semester. Conversations were littered with noticeable gaps as she processed information, and her short-term memory was still unreliable. Writing the grant proposal would be difficult enough, but the prospect of success was even more worrisome. “What happens if she actually gets it?” he thought. But he kept quiet, outwardly lending his support.

Suppressing his doubts, Perlman introduced her to a friend, John de Cuevas, who was inspired as much by Venell’s perseverance as by the project itself. He funneled her proposal through the Baker Foundation, an organization he founded. The foundation cut her a check for \$15,000 to fly to Beijing for a month with cameraman Jeff Arak ’07 to make “The Green Reason,” based on firsthand accounts and expert interviews conducted by Venell. Soon after its completion, the film was screened at local schools, including Brandeis, Harvard and Boston University.

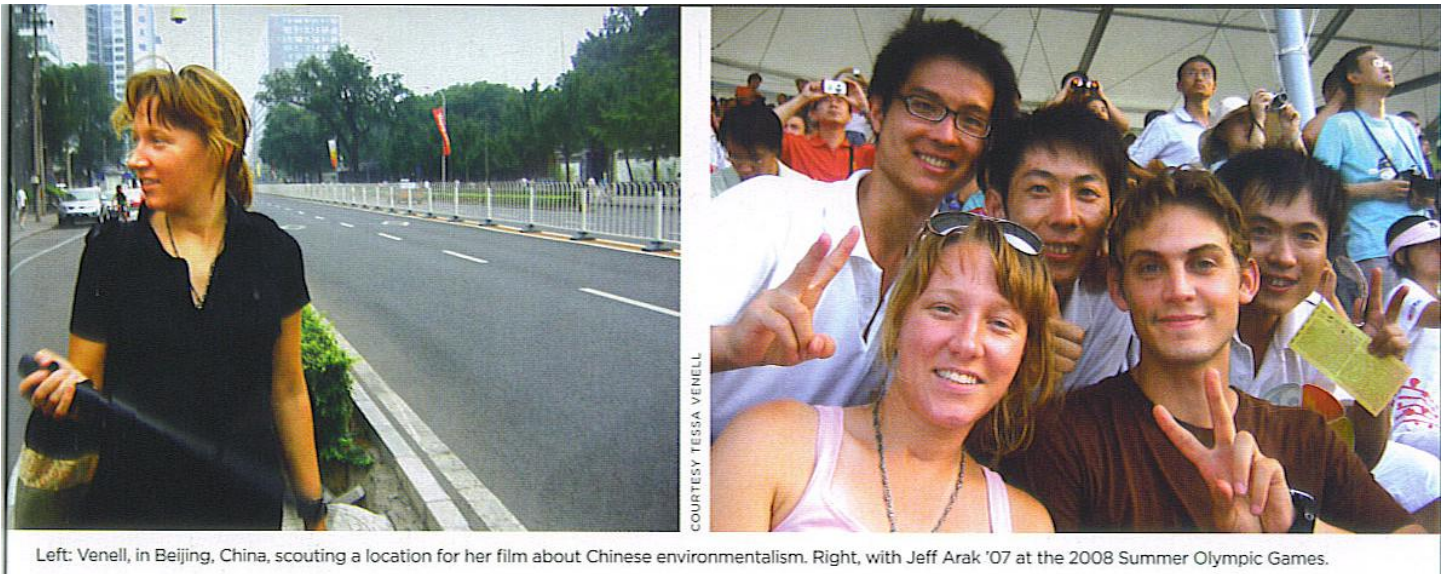
“She found the highest cliff she could struggle to the top of and dove off,” Perlman says. “And she had no clue whether she was going to be a good swimmer or not, or whether she would land feet first or head first.”

*I feel like, in my case, I've gotten to a point — and it's really strange to get to this point — that I realize things were lost because of my injury. It's OK to me now. There is a lot that wasn't lost. If I had to lose some memories and things that I was able to do, there is a lot that I gained, and I'm so happy for what I've gained.*

— Tessa Venell, in an email to a South African mother whose son also suffered a TBI, April 29, 2009

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Left: Venell, in Beijing, China, scouting a location for her film about Chinese environmentalism. Right, with Jeff Arak '07 at the 2008 Summer Olympic Games.

Nearly five years after the accident, Julie Venell sits in her living room listening to the clang of pots and running water as Tessa makes lunch for her family, a combination of stir-fried tempeh with vegetables and orzo. Julie remembers what could have been.

She remembers the young male patient that she saw every day at Maine Medical Center, whose parents would wheel him into the courtyard and wipe the saliva from his chin, and how she prepared herself emotionally for such a scenario.

Tessa dishes out the meal onto five separate plates. The lingering effects of her injuries — both physical and mental — are fading, but they have not vanished. Her movements are more calculated now than they were before the accident. Occasionally she loses her balance completely. Nearly a year of her life has been wiped from her memory bank, from December 2005 to October 2006. Her short-term memory still fails her, but she's regaining it slowly. She's excited when she remembers what she needs at the store on her way home.

"You live with what you have and you move forward," she says. "And I think I've been really good at moving forward."

She has learned how to compensate for her deficiencies. Currently she's in between jobs, but for the last year and a half she worked in the sales department at PBS International. She shares an apartment in Medford, Mass., and in her spare time she is writing a book about her recovery. She's even started running again.

"She draws people in and sets goals and moves herself forward and then gets people to move forward with her," Katz says. "She was optimistic, so I think she was definitely on the positive side of that spectrum of being driven, motivated to keep her recovery going. That's her. That's part of her personality and it was a big advantage for her recovery."

Most importantly, she has come to accept her injuries as part of who she is, but not as what defines her.

"I'm not sure where I would be had the accident not happened, but I can't anymore for sure say that I would be in a better place than I am now. That's a really good thing, right?"

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