bye to Robert before climbing onto the stretcher. My hair was covered, and I was wheeled into the operating room. I saw the heart–lung machine. My arms were removed from the hospital gown and placed onto arm splints. *I felt like Jesus Christ being nailed onto the cross.*

My hands and Hobbit feet shrank back to normal size. I had ankles again.

My memory is hazy after that — there are many gaps. I remember waking up in the intensive care unit (ICU) and feeling like I had been hit by a 20-ton truck. I remember the pain, the fatigue, the tube in my throat, the panic and the nausea. I remember voices and Robert stroking my forehead. I remember the tube being removed from my throat. I remember asking the surgeon what type of operation he performed and his response “quadrangular posterior leaflet resection.” For 2 days I drifted in and out of consciousness. I remember a nurse asking me what day it was and my being confused.

On the second day post-op, I was moved onto the surgical unit and given fluids to drink. The physiotherapist gave me an inspirimeter and I practised deep breathing and walking. I was exhausted. I didn’t have the strength to eat or practise deep breathing. My oxygen saturation dipped into the low 90s without oxygen. Robert was worried and frustrated at my lack of effort and progress.

On the third day post-op, the nurse gave meticulous care and made me incredibly comfortable. My blood pressure was low (85/54), but the surgeon ordered me out of bed. The resident and nurse removed my chest tubes and I was left with 2 gaping holes that looked like bullet wounds on my belly. When the physiotherapist came, I stuffed my swollen feet into my sandals and stood up. I used the walker to walk down the hallway but was forced to sit down because I felt dizzy and was suddenly out of breath. My hemoglobin was low (79, normal is above 120) as a result of post-op bleeding. I did not know the extent of my blood loss until then.

Robert told me that on the day of my operation, I experienced post-op bleeding. I lost 100 mL of blood within 5 minutes and the surgeon ordered 2 units of packed red cells. In all I received 15 transfusions in the ICU immediately post-op (3 units packed red cells and 12 units of

fresh frozen plasma) and another 2 units packed red cells on the third day post-op for a total of 17. *It was mind-blowing to imagine that my entire blood supply had nearly been replaced. I had the blood of 17 different people coursing through my veins. This was not anticipated nor had I prepared myself to be the recipient of the “gift of life.” I became concerned about the safety of the blood donation system. Several medical experts have since reassured me that the blood that I received was infection free. I know that I did not have a choice. Reflecting back, I would have chosen to live.*

I improved steadily after the transfusion. I could stay awake and hold a conversation. I read and received visitors. I forced myself to eat, to walk and to do my deep breathing and coughing. I was given diuretics and lost the 10 lb of fluids that had accumulated after the operation. My hands and Hobbit feet shrank back to normal size. *I had ankles again.*

On the day of my discharge, I had another echocardiogram. The cardiologist reviewed the results with me — I had only trace mitral regurgitation and the annuloplasty ring that was sewn into my heart was well positioned. The doctor reminded me about short-term pain for long-term gain. *The operation was a success! My heart was no longer drifting but it was limping along. The surgery had been much tougher than I had imagined.* I thanked my surgeon, from the heart.

Lily Chin-Peuckert
Montréal, Que.

“From the heart” is an excerpt from *The drifting heart*, (unpublished manuscript), written by Lily Chin-Peuckert.

Lifeworks

H₂O: Water and light speak to us

Juan Geuer’s goal is to find ways to integrate the seemingly inanimate into our visceral experience — to give us access to what we really are at the most fundamental level.

His installation piece *H₂O* was recently acquired by the National Art Gallery of Canada. After patiently observing this piece in action, a woman commented to Geuer that the art was analogous to the “experience of giving birth.” What she’d watched for almost 10 minutes was an optical dance — the slow swelling and eventual fall of a single drop of water constantly transforming the light of an unwavering red laser beam, a combination that cast complex, morphing refracted light on the wall behind.

The artist recalls the viewer’s comment as casting deep light on his work. “We’re mostly water and so the type of dynamic we observe in *H₂O* goes on in our bodies all the time. But how do we link our emotional make-up with what goes on at the molecular and atomic level of water?” says Geuer, who turns go this year.

Originally an artist working with glass, Geuer came to Canada from Holland, via Bolivia, in 1954. He spent much of his career as a scientific draftsman and equipment inventor with the Dominion Observatory in Ottawa. This personal melding of science and art infuses his work — his bookshelves combine tomes ranging from the Fisher Scientific Catalogue to works on the art

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of Jackson Pollock. In 1998, broadcaster Peter Gzowski profiled Geuer in the series “Great minds of our times.”

H_2O is classic Geuer — it combines simple physical forms, and in this case a deceptively reductionist title, to reveal a much more complex story. H_2O itself looks as much like a prototype operating room apparatus as an artwork. On a metal table is an accordion-like water pump driven by a finely calibrated motor. A length of intravenous tubing connected to a glass pipette extends from the pump. Over the course of about 8 minutes the pump forces out a single drop of water. Mounted below the tabletop is the red laser, aimed to pass through the drop as it grows.

The resulting chaotic light pattern is caused by catastrophe optics as the laser light interacts with the constantly changing water droplet: changes caused by effects from surface tension and gravity to dust. Catastrophe optics is Nature’s optics: it describes how rays of light focus in the presence of interference. It’s the optics of light on the dancing ocean wavelets creating a sparkling sheen, rather than light symmetrically focused by a lens. The light show generated by H_2O reveals water’s molecular essence, its powerful polar bonding that is the root of its nature as the universal solvent, and thus as a life force.

For many, the effect of H_2O is more spiritual than physical. In this way, Geuer puts us in touch with the enchantment of the Renaissance — the insight that beauty and truth have no boundaries, that science, art, medicine and faith flow in and out of one another.

Juan Geuer

H_2O : Science meets art when a laser brings to light the invisible tensions in water molecules.

“We’ve created false boundaries between these things. We have to find new ways to gain integrity,” says Geuer.

The water and light speak to us, and Geuer creates the opportunity for us to

patiently observe the alternating simplicity and complexity of what we’re made of, one drop at a time.

Jacob Berkowitz
Quantum Writing

Juan Geuer

Geuer’s *WiS* (*Water in Suspense*), is a “sister” work of H_2O . *WiS* used intravenous tubing and a peristaltic pump, like the ones used for accurate infusion of drugs, to precisely dole out each droplet. Similar to H_2O , a laser light was aimed through the growing droplet. An additional blue light can be placed behind the piece, such that a viewer standing in front of the blue light will cast a shadow onto the wall, whereby the dancing images cast on the wall by the water droplet will appear to be within the viewer’s body. *WiS* is in the artist’s studio collection.

Juan Geuer