

Class Divisions

Indonesian Exit Permit.
 Translation: "Reason for departure
 to Taipei; to attend to husband in SQ
 plane crash; permit issued by telephone
 at 12.45 hours 01 November 2000
 Central Indonesian Time."

1. Architectural Design

For five days I forbade mirrors. On the sixth day, accompanying his stretcher through the back passageways of Taipei airport, I was unable to foresee, and thereby protect, him from glimpsing the remains: burn marks reflected in the one-way windows of terminal security.

For a decade I thought we c/would achieve the sort of marital synchronicity modeled by Australian bower birds: *He*, the creator of an artfully constructed and playfully adorned nest to honor *Her*, the engineer and overseer of a climate-controlled heap of progeny.

Instead, *We*, two highly trained ecologists, were incapable of producing non-aggressive pets or a functioning compost pile. This was evident well before the plane crash.



2. Communications

Sweaty, troubled dreams. One a.m.? Two a.m.? Knocking, thumping, someone repeating my name and something else, urgently. Muddled awakening, seconds lost flailing and fumbling with the mosquito net, wooden crossbar, door. A British-accented voice saying nightmarish things, urging me to the phone. Clambering over felled coconut palm segments blocking the path; banging knee, foot, shin, elbow. A naked bulb illuminating the resort's reception hut, a receiver lying prone on the counter. Grabbing it, crushing it to one ear.

“He’s OK. He’s been in a plane crash in Taipei.”

“Just how OK is he??!”

3. Aeronautics

On Halloween night, 31 October 2000, in the middle of a typhoon assaulting the island of Taiwan, the pilots of Singapore Airlines flight 006 departing Taipei for Los Angeles erred. The plane was scheduled to depart from Runway 05L (Left). Instead, it lined up with 05R (Right), a runway partially open for taxiing, but closed midway for repairs. One thousand meters down 05R, the plane collided with concrete barriers and construction vehicles pitched at a height geometrically congruent with a jetliner initiating takeoff.

The Boeing 747's left wing was ripped off by a crane. The nose slammed into a front loader. The fuselage tore in two. Newly filled fuel tanks exploded. Half of the 179 passengers died, along with a quarter of the crew.

3. Cultural Hybridity

My brother is dyslexic, a sex-linked trait inherited through the Y-chromosome. He, like my father, struggled to keep up in schools failing to recognize their disability. I joke that I possess a limited form of dyslexia, because I'm constantly confusing left and right.

“Just follow the way my hand is pointing,” I tell driver-friends befuddled by contradictory directions issued enroute to our destination. “Ignore what’s coming out of my mouth.”

4. *Physics*

Nanoseconds after the crash, while the airplane was still careening down the runway, flames engulfed my husband. Having participated in Australian fire ecology experiments as a runner – someone who jogged ahead of a prescribed burn line and clocked the flames’ progress – he did not expect to survive. Instead, he covered his face with his hands and prepared to die.

Newtonian properties of mass, velocity, force, and trajectory intervened. The airplane cleaved into three sections, each one torquing and skidding apart before wrenching to a halt on the tarmac. When the plane’s body split, the fireball sucked back into the center, sparing the lives of everyone in the rear. A last-minute seating change during a layover in Singapore had switched my husband from the midsection to the front row of the tail. Eventually he regained consciousness in darkness, felt his body dangling at a strange angle, and concluded he wasn’t dead, but feared he could be if he didn’t flee *immediately*. He unclipped his seatbelt, fell through wreckage onto the pavement, spotted hanger lights in the distance, and joined dozens of survivors scrambling across airstrips and drainage ditches in the driving rain.

Chaos reigned in the hanger. There were no medical personnel: all first responders had rushed to the fireball. Drifting in and out of consciousness, my husband refused haphazardly proffered medications with unintelligible Chinese labels, but accepted the offer of an Australian pilot’s cellphone, dictating his brother’s home number to the pilot because his hands were too badly burnt, seared in the explosion.

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This is how we learned the details of the crash before the rest of the world. While I frantically dialed clueless embassies and airline offices across several time zones, my husband huddled in the hanger with

other survivors for hours, until the second-most severely injured were abruptly loaded into vans and rushed to the nearest available hospitals.

The airport was shut down.

5. Systems Analysis I

Sociologists analyzing the Three Mile Island nuclear meltdown in Pennsylvania posit the inevitability of accidents in complex situations that are tightly coupled, have catastrophic potential, and involve human operators.

On October 31 the airline's time pressure for flights to depart before the typhoon worsened, the strong crosswinds and limited visibility, the inconclusive lighting on Taipei runways, the lack of a ground radar system enabling airport controllers to monitor aircraft, the girth and angle of the 747's wings blocking cockpit sight lines for signage indicating left/right runways, the fact that three pilots ignored a misaligned beacon signal on the navigational display, and a premature turn – perhaps because the pilots were multitasking, still completing their preflight checklist while taxiing – are all believed to have contributed to the crash of flight 006.

6. Heuristics

The resort phone is black plastic with square buttons. I punch blindly, embossed numbers pressing into jittery fingertips. During the first hour of knowing-but-not-knowing, my credit card is cut off every third call due to unusually high long-distance calling volumes. I dial zero-one-one, repeatedly ask operators to reinstate my account so I can find My Husband Who Was In A Major Airplane Crash Goddammit.

In between calls I shut down my Fulbright-based life, scribbling instructions in black marker on hastily packed boxes before taping them shut. I fly from Lombok to Bali, then yield to Singapore Airlines staff who track me down in the Ngurah Rai Airport to reroute me from Jakarta to Singapore, piling stacks upon stacks of rupiah onto a Balinese immigration officer's desk to expedite my exit permit. I watch the harried official dab whiteout onto my passport, obliterating and writing over whatever he was initially instructed to inscribe.

I board another plane. I ensure my seat and tray table are secured and in the upright and locked position. I calculate and recalculate statistical odds. In a back room at Changi Airport, I join lines of next-of-kin to fill out forms and be checked off lists while large-screen televisions display nonstop images of fireballs and ruin, visual brutalities achieving their intended effect.

My heart is straight-jacketed with anxiety. My eyes track sluggish clock hands while Singapore Airlines holds off flights to Taipei, waiting for the worst of the typhoon to pass. It is now fourteen hours after the crash.

If only we knew where/how he was...is?

7. Biochemistry

Cremation at temperatures of 1400-1800 degrees Fahrenheit requires at least two hours to consume a skeleton. Jet fuel burns at temperatures between 800-1500 °F. At 1292 °F, the calcium phosphate in bones changes color and shape. When this happens to a vivacious young Iranian-American returning on Flight 006 from a marine biology conference in Bali, the intensely loved girlfriend of a fellow ecology graduate student in the program I attend and my husband chairs, her identification can only be confirmed with dental records.

8. Linguistics

Taipei Airport Hotel. Racing up a red-carpeted staircase, bypassing formalities, pleading for a car, a driver, interpretive staff. Rain streaming, spattering, puddling; neon pulsing against intractable concrete. A medical center revealed, squatting behind a McDonald's. Automatic doors parting, deathly quiet, dead of night. A nurse vanishing down a dimly lit corridor, her shoes squeaking on linoleum. Another nurse materializing, handing over a plastic bag of *personal effects*: torn clothing, a passport, everything damp, acrid, reeking of smoke. Panicky English translated to Sober Mandarin, back to Understandable English.

Nurse's eyebrows lifting slightly behind her facemask, beckoning. Elevator doors parting, closing, opening.

Curtains walls beds railings lights machines cables tubes IV stands oxygen tanks.

One recognizable husband: red burns, white sheets, black smears of ash, eyebrows gone.

Awake, breathing, otherwise whole.

9. Speech Pathology

I sit by his bed, find a body part I can touch without hurting him, lock eyes, listen.

“Just before the flames surrounded me, I saw you in my mind,” he whispers, his voice cracked by smoke inhalation. “When I came to, I thought of you, of us. I knew you wanted me to save myself. So I did.”

10. Systems Analysis II

The rivet-popper theory compares ecological systems to airplanes. Just as airplanes are built with many mechanical redundancies (e.g., extra rivets), ecosystems contain species performing overlapping functions. Lose a few parts (species), and the system can still function. Progressively lose too many parts, and ultimately everything collapses.

Counterintuitively, the opposite – over-engineering – can backfire. Redundant safety devices increase system complexity; increased complexity increases the risk of errors and accidents. Humans relying on redundant systems get sloppy, depending more on technology and less on intuition, causing accidents. Precautionary interventions can still result in system failure.

11. Resource Management

Week One. Basic surgery, stabilization, intermediate care. The crash dominates the news; Buddhist monks pray at the site. A ten-armed Mahakali, I orchestrate 24/7 bedside service, patient advocacy, logistics, telecommunications, media interviews, family and public relations, university affairs, evacuation to the States. I shower but do not sleep.

Week Two. “My surgeons removed enough skin to make at least two man-purses but I’m growing skin like a salamander!” my husband boasts from a burn unit festooned with snarky gifts: jokey crispy critter cards, a Burning Man action figure.

Week Three. His usually cheerful state is overcast with gray, his face pain-weary. “What happened?” I ask, intuiting the answer. I take the head nurse aside, channeling Asian-style deference during our conversation. “Could the nurses be a little gentler with him?” I plead.

She holds my gaze, nods. “We’ll teach *you* how to do it.”

12. Business Administration

Debridement: an extreme version of dermabrasion, the skin-resurfacing technique used to treat acne or remove wrinkles. Dermabrasion is a short-duration procedure using a rapidly rotating device to sand the upper epidermal layers. Debridement takes weeks, and involves the repeated removal of newly formed raw tissue from healing wounds. Both dermabrasion and debridement promote the growth of smoother skin, reducing scarring.

13. Humanities

There’s hard, and there’s fucking horrid.

There is no vocabulary for the relentless, excruciating torment of recovering burn wounds and skin grafts. Every day, twice a day, during Weeks Four and Five and Six and Seven and Eight I gently soak my husband’s bandages in warm water before taking deep breaths, gritting my teeth, and ever-so-slowly peeling the bandages away. I check and re-check every few moments: *how are you doing?* I focus intently, do my best to still my trembling hands and scrape tender skin from open wounds on his face, his wrists, his thighs.

At the end of each session I pack up the bandage kit, make sure he is resettled comfortably, ask if he needs anything else, and tiptoe outside.

If I huddle in the furthest reach of our backyard I can sob for as long and hard as I need to without being heard. Or seen.

14. Magical Realism

My husband graduated from debridement to wearing pressure garments to further reduce scarring and maintain motility. Ultimately his burn- and graft-induced scars faded into the surrounding skin. You would need to know his history, and look very closely, to see them.

We returned to academic life. At the graduate-student-organized Mardi-Gras-Hooray-Our-Chair-Survived Party we dressed up as King Kong and Fay Wray. He sweated, I posed. Our marriage crumbled, romantic fiction in reverse.

In real life, surviving a plane crash makes no difference if the couple remains fiercely attached to their carry-on baggage. Once the immediate crisis is over and the spotlight recedes, Party A does not suddenly realize how deeply and truly Party B loves them. Instead, overstuffed luggage bins spill open, contaminating the scene.

15. Childhood Development

Cognitive dissonance theory claims that when humans receive information that shows our behavior to be inconsistent with our beliefs, we feel uncomfortable, because the mismatch between our opinion of *who* we are with *what* we do causes stress. For example: the anxiety provoked in an otherwise cautious person who, despite discovering they risk anaphylaxis, continues raising venomous scorpions as pets.

With cognitive dissonance, the higher the awareness of the contradiction, the greater the psychological tension. If the stress is acute enough, we try to restore consistency by changing our actions to fit our beliefs, or, conversely, by changing our beliefs to align with our actions. Yet when our belief-changes include justifications, rationalizations, or minimizations, the inconsistencies are perpetuated, because we allow two or more contradictory beliefs to coexist alongside self-defeating behaviors. For example: “I haven’t been stung *yet*.”

16. Human Resources

A few years after the crash, following weeks of abdominal issues that eluded diagnosis but inspired potent pharmaceutical cocktails, I reached the point where everything I ingested came right back out. Spent by

hours of writhing and weeping on the bathroom floor, I asked my husband to take me to the emergency room.

He refused. He needed to go to the airport. He had a speaking engagement. “Can’t someone else go with you?” he demanded. In despair, I called a girlfriend hundreds of miles south, asking if she could please fly up to be with me and our pets because my spouse was scheduled to speak at a restoration conference in the Midwest.

“Of course I can come up to be with you,” she said. “But that’s not my job. That’s your husband’s responsibility. He needs to take care of you.”

I turned to my husband, repeated what my girlfriend said, and *insisted* he drive me.

Hospitalized in a wing adjacent to the University of California at Davis Burn Unit, I was diagnosed with a *Clostridium difficile* (C-dif) infestation, acquired when overlapping courses of redundant antibiotics from a revolving set of doctors knocked my intestinal biome out of whack. The drugs obliterated the helpful bacteria that usually outcompeted the pathogenic bacteria, keeping it in check. With my healthy microflora diminished, multi-antibiotic resistant populations of *C. difficile* expanded in my gut, turning toxic and life threatening.

After I recovered, my primary care physician revolutionized her medical approach and become a practitioner of holistic healthcare, training herself in herbal and alternative medicine. My husband was re-invited to speak at the same conference the following year. And I – embittered, resentful – began my third iteration of “I’ll-give-it-another-six-months” journal entries.

17. *Systems Analysis III*

A controlled burn is a low-intensity fire deliberately set within a designated area, used to promote germination or healthier growth of fire-adapted native plants, to improve wildlife habitat, to clear agricultural fields, or to reduce fuelwood hazards and prevent larger, more devastating fires.

And, still. Despite ideal conditions, careful planning, and well-trained personnel, some controlled burns jump their fire lines, becoming full-fledged, out-of-control conflagrations.

18. *Kinesthetics*

Five-plus years after the plane crash – the half-life of our relationship – we kept up the crossfire. It took a village to remain married: My Therapist, His Therapist, Our Couple’s Therapist, and numerous friends providing peer counseling.

Our dysfunctional coupling didn’t seem odd to me, in part because I grew up in a hostile family environment. My mother defaulted to nag/escalate; my father chose dodge/explode. As she turned up the volume and frequency of her complaints, he took on more overtime, absenting himself. Ultimately my father achieved 100% absenteeism, accidentally killed on a late-night factory shift he chose to avoid my mother.

“One evening, unwilling to contain ourselves, we morphed into Others. My husband: a Humanoid speaking an unrecognizable tongue. Me: a Droid displaying plastered-on calm.”

19. *Civil Engineering*

The end came three weeks into a jointly-taught tropical ecology course on Tioman island, Malaysia. During class we were all business: lectures in the morning, field exercises in the afternoon. In between we imitated monitor lizards, surreptitiously sniping and picking at each other’s tender flesh. One evening, unwilling to contain ourselves, we morphed into Others. My husband: a Humanoid speaking an unrecognizable tongue. Me: a Droid displaying plastered-on calm. The Humanoid stood and vocalized formerly unspeakable things. The Droid sat on the mattress and transcribed the unspeakable things.

“I want to end the relationship. You aren’t meeting my needs and I’m not meeting yours.”

“We aren’t meeting any of each other’s needs? Nothing?”

“OK, we had some good parts in our relationship. Maybe I’ll regret this later, but I can’t do this anymore. I feel scared but it feels right.”

“What’s the crux of the reason you want to divorce me?”

“It’s very difficult for you to take responsibility for things that are wrong with the relationship. You think I’m the juvenile delinquent in the relationship, that it’s me who has to do everything to change. I don’t feel I have much empathy from you. I don’t see that changing. I can’t remember the times you’ve said ‘I’m really sorry for doing that.’ ”

“I’m astonished at the film you have in your head.”

“You’re right. We have two separate realities. It seems we can’t bridge that.”

“I completely support you not being with me if that’s all you’re capable of seeing. I feel so unseen. This is something people do in relationships – they superimpose this negative image onto their partner and they stop seeing the real person. I’ve done it too. How would you feel if I just said to you what you said to me? But I wouldn’t say that kind of thing, because it’s not true. And the part about ‘saying sorry’? It’s not just about saying the words, it’s about making an actual change, a change for the better.”

“I *do* want to change for the better.”

“Your change involves not being with me, that’s what you mean?”

“Yes.”

20. *Microeconomics*

The resort where we spent our last idyllic vacation snorkeling along beachside coral was bordered by fishing communities. For years, a subset of men seeking quick cash filled their boats with explosives instead of nets, and every so often a bomber blew himself up. News of the funeral was broadcast from local mosques, and coral harvesting for building materials temporarily ceased. Although everyone tut-tutted the damage to the bomber’s household and local marine life, the millennia required for a new reef to form wasn’t in the local consciousness.

“I expected that we would be together until we were old, because I actually believed it was possible for couples to stay together and work through things,” I said that night on Tioman island. “This divorce means

the dismantling of the thousands of ties that bind us to our community. It's huge. I don't think either of us realizes how huge it is."

That night I typed out every relationship-murdering sentence as if I were a court transcriptionist, and not the accused, witness, defense lawyer, and co-plaintiff all rolled into one. I continued typing until every shred of my insides was screaming and I couldn't absorb another syllable. At that point I shut the laptop lid, left the computer on the bed, opened the door, closed it behind me, and walked shell-shocked towards the ocean on wobbly legs, securing the knot in my sarong, cinching the material tightly so it wouldn't fall.

21. Forensics

No matter whether our skin is burnt by cold, heat, radiation, electricity, or chemistry, we classify burn severity by how far it penetrates. The deeper the burn, the more layers of skin are damaged. A mild burn on the skin's surface – the typical sunburn – is termed a first-degree, or superficial burn. A more serious burn that partially damages the secondary dermal layer is a second-degree, or partial-thickness burn. A severe burn that sears through both the epidermis and the dermis down to the subcutaneous tissue is a third-degree, or full-thickness injury; and a potentially fatal burn – one that bites all the way through to underlying tissue, muscle, tendons, and bone – is a fourth-degree burn.

For a burn to heal, different components of the body cooperate to restore the damage: connective tissue expands throughout the wound and draws the raw edges together, networks of blood vessels migrate to the area and nourish it, nerve cells reestablish, sweat glands regenerate. Optimal healing occurs when the burn victim keeps stretching the scarred area. Although nascent scar tissue is fragile and easily injured, moisturizing and massaging the area can help loosen and desensitize it, making stretching easier and preventing further skin breakdown.

22. International Relations

Post-divorce, hiking along a hillside at the research site I once shared with my husband, my path intersected with an elder auntie: silvered hair coiled into a bun, basket tumplined to her forehead, faded cloth wrapped around a muscular waist.

“*Mana anak rona?*” she asked, querying me about my No-Longer-A-Husband’s whereabouts, using the local kinship term for son-in-law. News of the plane crash news had travelled rapidly through the tribe. Our extended family spent sleepless nights mourning the loss of a beloved. In their understanding of the world, if an airplane goes down, everyone dies.

When I announced their *anak rona* was badly injured but would recover, folks were stunned and overjoyed. For long afterward, everyone inquired after his health, praising God for our good fortune. They asked me because they couldn’t ask him. He never returned, never called.

Auntie shifted her basket and smiled up at me, awaiting my reply.

“*Anak rona mesai ga* – I lost him!” I replied with a corresponding smile, choosing the Manggarai verb for inanimate objects – a frying pan, a shoe – that have gone missing.

Auntie grinned back. She already knew why my divorced husband wasn’t with me. She was testing me, observing how I responded. Seeing if I’d recovered.

“*Ho’o ga* – where are you headed,” Auntie continued, the most important part of the conversation completed to her satisfaction.

“*One sekang Amé Tua Golo* – back to the chief’s (Daddy’s) house.”

This was another formality. She knew exactly where I was going. Everyone knew the basics of my business in the community: where I ate, drank, bathed, hung out, napped, crapped, or cried on any given day. It got trickier when asked *why* I was there, or what, exactly, my research entailed.

But that is another story.