What this is

This is not an academic paper. The academic version exists — it's (Applebee & Combe, 2026, "*Social Group Scaling*") in this series, with full citations, health economics data, and a twelve-section argument for movement-rich public infrastructure. This is the kitchen table version. This is what it feels like to be a primate in a box.

If you've ever stood up after three hours at a desk and felt your body creak like a building settling, you already know everything in here. You don't need the biomechanics. You lived it.

When did you last climb something?

Think about it.

Not a staircase. Not a ladder at work because you had to. When did you last climb something — with your hands, your whole body, pulling yourself up, figuring out where to put your feet, using muscles you forgot you had?

If you're under ten, the answer is probably "today." If you're over twenty, the answer is probably "I can't remember." If you're over forty, the answer is almost certainly "decades ago, and it frightened me a little."

As a child, you climbed everything. Trees. Fences. Playground equipment. The back of the couch. Your parents' bookshelves. You did it without thinking about it, because your body was designed for it. You are a primate. Your shoulders have the full range of motion required for brachiation — swinging from branch to branch. Your hands can support your entire body weight during a hang. Your spine, your core, your grip strength, your spatial awareness — all of it was shaped by sixty million years of moving through trees. Not walking on flat ground. Climbing.

Then you turned twelve, and the monkey bars disappeared.

Not gradually. Not because you outgrew them physically. They were removed from your environment. The playground — the one place where your body got to do what it evolved to do — was reclassified as a children's space. You graduated to the adult world. The adult world has chairs.

Why?

There's no good answer. There's no biomechanical reason why a thirty-year-old shouldn't hang from a bar. There's no physiological reason why a fifty-year-old shouldn't climb. In fact, the older you get, the more you need it — because the muscles, bones, and proprioceptive systems that climbing maintains are exactly the ones that atrophy with age, causing the falls, fractures, and frailty that fill hospitals with elderly people who broke a hip stepping off a curb.

We took away the monkey bars precisely when the body started needing them most.

Your feet are trying to talk to you

You have approximately 200,000 nerve endings in the soles of your feet. Two hundred thousand. That makes the bottom of your foot one of the most densely innervated surfaces on your entire body — up there with your fingertips, your lips, your tongue. These nerve endings are organised into four distinct types of receptor, each tuned to a different kind of information: light touch, pressure, vibration, stretch (Kennedy & Inglis, 2002; Strzalkowski et al., 2018).

Your feet are not platforms. They are sensory organs. They evolved to read the ground — every pebble, every root, every shift in temperature and texture and slope. Wet rock versus dry rock. Firm soil versus loose sand. A branch that will hold versus one that will snap. For two million years, the soles of your feet had a continuous, real-time conversation with the surface of the Earth, and that conversation calibrated everything: your balance, your gait, your spatial awareness, the micro-adjustments in every joint from ankle to spine that keep you upright and moving efficiently.

Now your feet are in padded shoes, on a flat floor, receiving approximately the same amount of sensory information as your tongue would get from licking a wall. The same signal, all day. Nothing. The 200,000 nerve endings are still there. They're still firing. They have nothing to report.

Daniel Lieberman at Harvard published a study in *Nature* in 2010 showing that barefoot running produces a completely different gait pattern from shod running — a forefoot strike instead of a heel strike, generating less collision force, mediated entirely by the foot's direct sensory contact with the ground. Put a shoe on the foot, and the foot stops talking to the brain. The brain stops adjusting the gait. The heel slams down. The ankle, knee, and hip absorb forces they were never designed for.

The Zookeeper — Chapter 15, "The Indoor Species" — puts it better than I can. The foot that spends its life in a shoe on a floor is receiving "approximately the same sensory input as a tongue receives from a tube of beige paste." The information isn't wrong. It's absent. The proprioceptive system, starved of data, loses calibration. Balance deteriorates. The intrinsic muscles of the foot — the small stabilisers that evolved to negotiate uneven ground — atrophy from disuse, because the shoe and the floor have taken over their job.

The silence extends upward. Ankles. Knees. Hips. Spine. Each joint evolved to manage variable forces from variable terrain. The flat floor delivers no variables. The body has nothing to compute. So it stops computing. And then, at seventy-five, you step off a curb that's three centimetres higher than you expected, and your body doesn't know what to do, because it hasn't had to solve that problem in fifty years.

Falls are the leading cause of injury death in adults over 65 in Australia, the UK, and the United States. Hip fractures in the elderly have a one-year mortality rate of 20-30% (Abrahamsen et al., 2009; Haentjens et al., 2010). We spend billions on hip replacements, rehabilitation, and aged care facilities to manage the consequences of bodies that lost their balance because we put them on flat surfaces in padded shoes for six decades and then acted surprised when they couldn't handle an uneven footpath.

Your feet were trying to tell you. We gagged them.

We build climbing walls for gorillas

Every accredited zoo in the world provides climbing structures for captive primates. Ropes. Logs. Platforms at varying heights. Textured surfaces. Vertical complexity. This is not a luxury. It is a regulatory requirement. The Association of Zoos and Aquariums, the European Association of Zoos and Aquaria, the Zoo and Aquarium Association of Australasia — all of them mandate environmental enrichment that includes opportunities for climbing, brachiating, and traversing three-dimensional space (AZA, 2023). A zoo that housed gorillas on flat concrete with nothing to climb would lose its accreditation. It would be in the newspapers. People would be outraged.

We know what primates need.

We know this because we studied it. Decades of welfare science, behavioural observation, physiological monitoring. We know that primates deprived of climbing opportunities develop muscle atrophy, joint degradation, stereotypic behaviours, and psychological distress. We know that environmental complexity — varied surfaces, vertical space, things to grip and hang from and navigate — is essential for physical and mental health in captive primates.

We are primates.

We are great apes — family Hominidae, same as gorillas, same as chimpanzees. Our shoulder joints have the same rotational range. Our hands have the same gripping architecture. Our bodies carry the same sixty-million-year legacy of arboreal locomotion.

And we designed our environment to remove climbing entirely.

Flat floors. Elevators. Escalators. Smooth footpaths. Padded shoes. Chairs. The modern built environment is specifically, deliberately, expensively engineered to minimise the physical effort required to exist within it. We spent billions making sure you never have to climb anything, ever, for the rest of your life.

Put a gorilla in that environment and a welfare officer would shut it down.

We would fail our own zoo inspection. Not metaphorically. Literally. If you applied the AZA standards for captive primate housing to a standard office building — assessing it for climbing opportunities, surface variety, vertical complexity, environmental enrichment — it would not pass. The office building is a worse primate enclosure than the gorilla exhibit at the zoo down the road. The gorillas get monkey bars. You get a desk.

Stairs are terrible

Let's talk about the one form of vertical movement the built environment does provide: stairs.

Stairs are a repetitive, joint-loading, monotonous activity that engages a narrow range of muscles in a single plane of motion. Step, step, step, step. Same height. Same depth. Same angle. Same muscle groups — primarily quadriceps and glutes, with minimal engagement of the upper body, core, grip, or stabiliser muscles. Stairs load the knee joint at forces of three to six times body weight per step (Costigan et al., 2002). For people with knee problems — which is a lot of people, because we've been walking on flat surfaces in bad shoes for decades — stairs are painful. For elderly people with reduced balance — because their proprioceptive systems have atrophied from decades of flat floors — stairs are dangerous. Falls on stairs are a major source of injury and death.

Now consider a climbing wall. Or even monkey bars.

Climbing engages your entire body. Grip. Forearms. Shoulders. Back. Core. Legs. You're pulling, pushing, stabilising, rotating, reaching, balancing. Your brain is solving spatial problems in real time — where to put your foot, how to shift your weight, which hold to reach for next. Your proprioceptive system is firing on every channel because the surface is varied, the angles are varied, the demands change with every movement.

A climbing wall loads your body through its full range of motion across multiple planes. It builds grip strength — one of the strongest predictors of all-cause mortality in older adults (Bohannon, 2008; Leong et al., 2015). It builds bone density through varied mechanical loading. It improves balance. It improves spatial awareness. It improves confidence in your own body. And — for a fit person — climbing is faster than stairs. A climbing wall from ground floor to first floor covers the same vertical distance with more engagement, more benefit, and more interest than a flight of stairs.

Stairs are what you get when you design vertical movement for efficiency. A climbing wall is what you get when you design vertical movement for the animal.

Every gym has a climbing wall now. The gym knows. The question is why the climbing wall is in the gym — a separate building, requiring a separate trip, a separate membership, a separate decision to go — instead of on the side of the train station.

The playground paradox

Watch a children's playground. Monkey bars. Climbing frames. Rope nets. Swings. Slides. Balance beams. Spinning things. Hanging things. Things that challenge grip strength, core stability, upper body strength, balance, coordination, spatial reasoning, risk assessment, and confidence. The playground is, without anyone calling it this, a primate enrichment environment. It is the closest thing in the modern built environment to the complex three-dimensional terrain the human body evolved to navigate.

Children use it instinctively. You don't have to teach a five-year-old to climb. You have to teach them to stop. The body knows. The impulse is primate. It's sixty million years old.

At twelve, it vanishes.

There is no rite of passage. No ceremony. No biomechanical assessment determining that this particular child no longer requires climbing. The equipment just... isn't there anymore. The secondary school has a gym with a flat floor. The university has a library with chairs. The workplace has an office with a desk. The public spaces between them have benches to sit on. Nowhere — nowhere in the adult world — is there a place where you can casually hang from a bar, swing across monkey bars, or climb something while waiting for a bus.

Here is the paradox: the child's body — young, resilient, naturally strong, with excellent bone density and proprioception — gets the climbing equipment. The adult body — which is losing muscle mass at 3-8% per decade after thirty (Volpi et al., 2004), losing bone density, losing proprioceptive acuity, losing grip strength, losing balance — gets a chair. And a gym membership it won't use.

It won't use the gym because the gym requires a separate trip. It requires separate motivation. It requires you to decide, today, that you will drive somewhere, change clothes, exercise for an hour, shower, change again, and drive back. The research on this is clear: when physical activity requires a discrete decision, most people don't make it. Only about 23% of adults worldwide meet the WHO's recommended physical activity guidelines (Guthold et al., 2018). We have been telling people to exercise for fifty years. It hasn't worked. Not because people are lazy. Because the environment is designed for sitting.

The environment shapes behaviour. This is not philosophy. It is one of the most robustly documented findings in behavioural science. If the stairs are hidden and the elevator is obvious, people take the elevator. If the escalator is right there and the stairs are around the corner, people take the escalator. If there's nothing to

climb at the bus stop, nobody climbs at the bus stop. And then we publish another study showing that Australians are too sedentary, and we launch another campaign telling them to move more, and nothing changes, because the environment hasn't changed.

Put monkey bars at the bus stop, and people will use them. Not all of them. Not every time. But some of them, some of the time, without needing a gym membership, without needing motivation, without needing to make a decision. Because it's there. Because the body sees it and the sixty-million-year-old primate brain says: *I want to hang from that*.

The cost of sitting

The diseases of sedentary life are not exotic. They are the most common, most expensive, most preventable diseases in the industrialised world.

Cardiovascular disease. Type 2 diabetes. Osteoporosis. Sarcopenia. Chronic back pain. Depression. Anxiety. The falls and fractures that fill aged care wards.

Sedentary behaviour — specifically, prolonged uninterrupted sitting — is independently associated with increased risk of all-cause mortality, cardiovascular disease mortality, cancer mortality, and type 2 diabetes, even after controlling for physical activity (Biswas et al., 2015). That last part is important. Even if you exercise for an hour a day, sitting for the other fifteen waking hours still increases your risk. The exercise doesn't fully cancel the sitting. The sitting is its own problem.

The economic cost is staggering. Ding et al. (2016) estimated the global economic burden of physical inactivity at $67.5 billion per year in direct healthcare costs and productivity losses. The Lancet Physical Activity Series estimated that inactivity causes 6-10% of the major non-communicable diseases worldwide (Lee et al., 2012). In Australia alone, the direct healthcare costs attributable to physical inactivity exceed $2 billion annually.

Falls in the elderly — the downstream consequence of decades of proprioceptive deprivation and muscle atrophy — cost the Australian healthcare system approximately $3.3 billion per year (AIHW, 2023). Hip

fractures alone account for a significant portion of this. Every hip fracture that results from a fall that results from poor balance that results from a lifetime of flat shoes on flat floors is a failure of infrastructure, not biology. The biology works fine. We just stopped using it.

We spend billions treating diseases caused by an environment we designed to be sedentary. Monkey bars at every bus stop, train station, and park would cost a fraction of one year's hip fracture bill. A fraction. And they wouldn't just prevent falls — they'd maintain grip strength (mortality predictor), bone density (osteoporosis prevention), muscle mass (sarcopenia prevention), cardiovascular fitness, proprioceptive acuity, and the psychological benefits of physical competence and play.

We know this. The evidence is not in dispute. It hasn't been in dispute for twenty years. We just haven't built the bars.

Put them everywhere

Here is the argument in its simplest form: movement infrastructure should be as standard as benches and water fountains.

We don't ask people to bring their own water to public spaces. We install drinking fountains. We don't ask people to bring their own light. We install streetlights. We don't ask people to bring their own seats. We install benches. These are not luxuries. They are infrastructure — things the public body needs, provided by the public environment, without requiring individual decision-making or willpower.

Movement infrastructure works the same way. Monkey bars at the bus stop. A hanging bar at the train platform. A low climbing wall along the footpath in the park. Pull-up bars at the playground — adult-height ones, next to the kids' ones. Traversal elements at shopping centres. Textured ground surfaces instead of uniform concrete. A balance beam. A rope. Something — anything — that invites the body to do what it evolved to do, casually, incidentally, as part of the normal texture of public space.

This is not fantasy. Some places are already doing it.

Outdoor fitness equipment is installed in public parks across parts of Europe, Asia, and Australia. Zurich has climbing boulders integrated into urban walkways. Copenhagen has pull-up bars along its harbour. Seoul has outdoor exercise stations in nearly every neighbourhood park. China has outdoor fitness equipment in thousands of public spaces — most of it used primarily by elderly people, who understand intuitively what the research confirms: if the body doesn't move, it breaks.

But most of these installations are segregated. They're in "fitness zones" — special areas set apart from normal public space, the way playgrounds are set apart for children. The equipment says: this is where you exercise. The bench says: this is where you sit. And the bench wins, because sitting is the default, and the default always wins.

The argument is not for fitness zones. The argument is for integration. The argument is that monkey bars should be as common as benches. Not in a special area. Everywhere. At the bus stop. On the train platform. Outside the supermarket. In the office building lobby. Along the footpath. Wherever people wait, wherever people stand, wherever people have thirty seconds with nothing to do — give them something to hang from.

Because the body will do it. The body wants to do it. You can see this in every adult who walks past a low wall and considers, for a moment, balancing along it — and then doesn't, because they're too old, because it's not for them, because someone might see. The impulse is still there. It has always been there. The environment suppressed it. Change the environment, and the impulse comes back.

You already know this

You know what sitting all day feels like. You know the stiffness in your lower back after three hours at a desk. You know the creaking in your knees when you stand up. You know the particular kind of tiredness that comes from not having moved — a tiredness that isn't sleepiness, that doesn't respond to coffee, that lifts the moment you go for a walk. You know the feeling of hanging from a bar — if you can remember the last time you did it — the relief in your spine, the stretch through your shoulders, the way your body says *thank you*.

You know what movement feels like versus what stillness feels like. Your body has been telling you. Every day, in every stiff joint and tight muscle and restless leg, it has been sending the same message: *I need to move. Not*

in an hour. Not at the gym later. Now. Here. Give me something to grab.

The built environment has been ignoring that message for a century. We designed cities for cars, buildings for efficiency, floors for flatness, footwear for fashion, and public spaces for sitting. We took an animal that evolved to climb, hang, run, squat, and swing through trees, and we put it in a padded box and told it to sit still. And when it got sick — when the cardiovascular disease and the diabetes and the osteoporosis and the depression arrived on schedule, exactly as the evolutionary mismatch would predict — we told it the problem was that it wasn't trying hard enough. Go to the gym. Take the stairs. Download a fitness app. Try harder.

The animal doesn't need to try harder. The animal needs monkey bars.

Not as a prescription. Not as a fitness intervention. Not as a wellness initiative with a logo and a hashtag. As infrastructure. As basic, boring, unremarkable public infrastructure, built into the environment the way water fountains and streetlights are built into the environment, there when you need them, invisible when you don't, requiring no decision, no motivation, no gym membership, no special trip.

The animal needs to climb. Build it something to climb on.

The zoo knows

I keep coming back to this, because it's the detail that should keep us up at night.

Every accredited zoo in the world has a welfare science team. Those teams spend their careers studying what captive animals need to thrive — not just survive, but thrive. They measure cortisol levels and activity budgets and social behaviour and reproductive success. They design environments to match the species' evolved needs. They provide climbing structures for primates, swimming pools for otters, digging substrates for meerkats, flying space for eagles. They know that an animal in an impoverished environment — one that doesn't match its evolutionary needs — will develop pathologies. Physical pathologies. Behavioural pathologies. Psychological pathologies. The zoo knows this. It's the foundation of modern zoo science.

We are the animal.

We are the primate in the impoverished enclosure. The enclosure is very comfortable — it has heating, lighting, Wi-Fi, food delivery, and a chair that cost $1,200 because we know, we know, that the chair is killing us, so we spend $1,200 on a slightly better chair instead of standing up and hanging from something.

A zookeeper who spent $1,200 on a better floor for a gorilla enclosure instead of installing climbing structures would be fired. Not reprimanded. Fired. Because the gorilla doesn't need a better floor. The gorilla needs to climb. The gorilla has always needed to climb. The floor is the problem, not the solution.

We are the gorilla. The chair is the floor. And we keep buying better chairs.

The question

When did you last hang from something? When did you last pull yourself up over a wall? When did you last balance along a narrow surface, or swing from bar to bar, or use your whole body to navigate space that wasn't flat?

You used to do it every day. Your body was designed for it. It still is. The shoulders still rotate. The hands still grip. The core still stabilises. The proprioceptive system still calibrates — if you give it something to calibrate against.

The monkey bars are not in the bibliography. They're not in the gym. They're not in the wellness app.

They're nowhere. That's the problem.

The research version is (Applebee & Combe, 2026, "*Social Group Scaling*"). The monkey bars are in the bibliography. Your body is in the chair.

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If you read this and then went and hung from something: good. Your body was waiting.