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# Playing with Gravity

## The role of conceptual understanding in helping our clients overcome faulty images of balance

As Feldenkrais Practitioners, we know that since everything we learn and do takes place in gravity, the more skillfully we relate to gravity itself, the better we function in ALL ways. For our students, however, gravity's primary influence on their abilities, their quality of life, and the concerns that bring them to study with us is often a hidden or thoroughly misunderstood factor. Their self-image about gravity – by which I mean their conscious and unconscious ideas about gravity, *and* their learned, embodied relationship with it – may be confused, or entirely focused on avoiding falls. The intellectual components of their self-image are often roadblocks to their ability to improve their relationship with it through Feldenkrais study. For example, if they *think* standing well is about not moving, they may quickly exit their flowing, dynamically balancing state after a Feldenkrais lesson.

If we're explicit more often in teaching the conceptual principles at work, our students' intellectual understanding of gravity can support their ATM and FI learning about balance, instead of impeding it.

My intention here is to share the most effective language and conceptual teaching I've developed to counter common learning roadblocks, starting with *why* playing with gravity is so valuable. Students often need reasons to be curious, especially when we ask them to follow more and more subtle signs along their path. It's helpful if they know why they may want to become "connoisseurs of plumb," as I like to say – besides simply not falling.

I think of this aspect of our teaching as a kind of cheerleading. We can help students pay attention to themselves by talking enthusiastically about what they can already do, and the benefits of studying their own relationship with gravity, then sharing joy in what we've learned through the same process. This cheerleading element of teaching is more essential than many Feldenkrais trainings and practitioners acknowledge. It helps students trust and get excited about what they feel in their lessons.

## “Cheerleading” for games with gravity

While some students come to Feldenkrais seeking better balance, often they think about their balance as if it's unrelated to their other concerns and interests. It's usually compartmentalized and listed alongside difficulties they're experiencing: “this hurts, that is wrong...oh, and I have bad balance.” And some students who believe they “have good balance” see their conscious work with gravity as complete, even though we may easily see that their reasons for coming to lessons or classes clearly relate to their habits of uprightness and balance.

It's important to gently, verbally challenge students to pay more attention. I often introduce the topic by saying that being more aware of gravity, and refining their response to gravity, is like asking a fish to discover water. It's so intrinsic to everything they do and experience that it's hard to notice it. Yet it's easy to imagine that a more skillful relationship with water leads to a better quality of life, for a fish. So, too, for humans who notice and develop a more skillful relationship with gravity.

I try to endlessly model curiosity and enthusiasm for both the concepts and moment-to-moment processes, in hopes of inspiring in them a more playful attitude about gravity. I talk about how my own games with gravity have slowly led me to enjoy more challenging sports and physical activities even as I've aged. Usually they'll react to one of my

stories, or volunteer one of their own that demonstrates how they've spontaneously become an expert in gravity in some aspect of their lives. Or they recognize the joy and ease of skillful balancing they see in others, perhaps their children or grandchildren. I latch on, and talk with them about the brilliant things that our nervous systems can do, given safety, curiosity, and options.

To bring the idea of teaching the *concepts* of a more skillful relationship with gravity further into reality, I'll write from here on as if I'm talking to a Feldenkrais student or class. I'll begin with primary principles, address common faulty beliefs, explore the notion of "losing" balance, and end with some reminders for our ATM and FI teaching. The quotes I've included from Moshe inspire me, and may be useful to some students.

## Translating physics and neurology into accessible, inspiring language

*"The nervous system is constantly and without break responsive to gravitation, so long as there is any life in it."*

- Moshe Feldenkrais, *Body and Mature Behavior*

Our sense of balance is our personal encounter with one of the primary laws of the universe. Balance, the intersection of physics and human neurology, is a brilliantly evolved solution to the fundamental challenges of gravity for our uniquely upright species. Because we have such a high center of gravity and small base of support – our two little feet or our sitbones – most of our brain function is intimately connected to reckoning with gravity.

Think about it: almost nothing else is possible without first knowing which way is up, using the support surface to become upright, and then trusting that we can stay there reliably and not fall. All of that

comes before we can move and act in the world. Learning it is essential play for babies, but it can also be a pleasurable ongoing refinement process for us.

Balancing is how we generally keep our center of gravity over our base of support (our feet when we're upright, our bottom when we're sitting). Doing this nearly constantly as we live and move requires enormous sensitivity about ourselves and our world, and the ability to coordinate and control all the necessary little and big movements. Every person who is standing, sitting without reclining, or even simply sustaining their head upright in gravity – like you probably are right now – is already “doing balance” quite miraculously.

For most people, most of the time, balancing feels – and is – automatic. It takes care of itself in the lower parts of the brain. Generally, when we're in the familiar, safe activities of our lives, we don't think about our instability: how far our center of gravity is from the ground, how small our feet are. Skillful movers can become comfortable with highly unstable situations. In most of their movements, even extreme ones, athletes and dancers are still confident that they won't fall.

Everyone, at any age, can refine their relationship with gravity, improve their balance, and improve their safety, confidence, and ease of their everyday movements. This is true regardless of our unique history, habits, and structures. We're all subject to the same principles of physics and neurology, but most people have ideas about what balance is – and ideas about how to improve it – that actually conflict with basic principles of physics and human learning. When they try to improve their balance, they unconsciously limit themselves because their understanding is faulty.

Interestingly, when we were babies and children we didn't think about balance at all. We probably balanced very well and played very nicely with gravity, enjoying big and creative full body actions in many

different activities. I have a very physically confident 10-year-old daughter who throws herself at every challenge she can find right now: mountain biking, climbing, field sports, Jiu Jitsu. She delights in finding out what she can do. And she falls often, even hard sometimes, but laughs about scrapes like they are a badge of honor.

Most of us adults don't feel so playful with gravity. This reluctance is in part because our relationships with gravity are far more repetitive: maybe we're quite sedentary, or our job or hobbies require a lot of repetitive actions. We've gotten out of practice with "playing" with gravity with great variety, so our repertoire of what feels safe has shrunk. Along the way we've internalized ideas about balancing that don't match reality.

So let's dispel some misunderstandings, because changing our thinking about how we balance in gravity often unlocks roads to improvement.

## Responding to faulty images of balance

### *Faulty image 1: "Balance is about stability"*

*"Life is not a stable process. Our ability to recover is our greatest quality."*

- Moshe Feldenkrais

Many people have the idea that good balance is static, that it's about finding some right shape of our body, some right place over our feet, and staying right there. But balancing is actually an endless dynamic process, like a dance with gravity. With our top-heavy design and small points of support we need to always move, at least a little bit, when we're on our feet or seated without leaning. The fact is that even people who balance with great skill are fundamentally unstable.

If we were meant to be stable we'd have been built like a pyramid, and we'd move like one, too (not much). Rather we're more like an upside

down pendulum that needs to recover our center, to be nudged back toward and through the middle point all the time, by little or big adjustments. Though every action and step shifts our balance, each moment that we unnecessarily hold our center of gravity outside our skeletal base of support costs us effort. There our muscles have to fight with gravity to keep us upright, instead of letting our bones effortlessly do the work. When we learn to better sense this effort, we can improve our ability to find the pendulum's path back home to plumb, no matter what action or body configuration we're in.

This metaphor is actually too simplistic, because we're much more unstable than an upside down pendulum. We take steps. We've got hips and spine, ribs and neck, and everything else. There's enormous freedom in how we can arrange and move our muscles and bones, and our brains are always capable of learning and controlling the endless balancing possibilities of movement in gravity in a more efficient, refined way...even if we've grown limited in our repertoire.

Being unstable means we can easily move, and if we're skillful in our instability we can move in any direction at any time. That ability is where confidence in our balance originates. Through our early childhood apprenticeship with gravity, and conscious attention later in life as needed, we acquire the sense that we can adjust our balance in any situation, catching ourselves when we stumble or are bumped. We learn that not falling is a matter of sensitivity, agility, and suppleness of our response to the unexpected. Maintaining our balance is a matter of *dynamic* stability – constant change in our relationship with gravity – not holding onto a static state.

### *Faulty image 2: "Balance is about strength and effort"*

Hand-in-hand with the idea that good balance is static comes the myth that balance is about being strong, or holding some muscle group tight. Yet all our strength, effort, and hard work are nothing in the face of gravity. We can't beat it, so instead we must seek to play more and more nicely with it, as we recover our balance over and over in

everything we do. By becoming more skillfully aware of plumb, and how it feels to veer away from it and return through it no matter what we're doing, the endless process of righting ourselves becomes increasingly more efficient, and actually takes less and less effort.

Feldenkrais talked very scientifically about muscles working too hard in gravity, and the importance of passing through plumb with ease no matter what we're doing:

*“In cases where movements are not perfectly adjusted to gravity, the body’s passage through the stable position is not clearly defined and the muscles continue to perform superfluous work.”*

Notice how he links excess muscular work to a person not being skillfully aware of “the stable position,” the center of the upside down pendulum in the language of our analogy above.

Ironically, *trying hard* to balance – having muscles constantly unnecessarily contracted – makes us rigid and less sensitive, and suppresses the natural supple movements we need for adjusting our balance. We're actually more susceptible to falling when we're trying hard not to.

One of the best ways to think and feel our way out of strength-based images of balance is to explore effortless lengthening in our activities. In Feldenkrais lessons we spend a lot of time learning to be long, tall, and graceful on our bones. This skill is all about learning to sense and enjoy the subtle – but always available – sensations of not shortening ourselves with unnecessary muscular effort.

*Faulty image 3: “The way to improve our sense of balance is by overwhelming it”*

Because of well-meaning assignments from some physical therapists and other movement professionals, many people believe the only way to improve their sense of balance is to overwhelm it with exercises like

standing on one foot while reaching out, or standing on an extremely demanding support surface like a wobble disc.

But the truth is that when we're overwhelmed, we feel unsafe, threatened, uncomfortable, or bad about ourselves. Each of these reactions suppresses our ability to learn. Instead we go into willpower mode. Willpower is what we use when we lack skill, and there's no learning or refinement possible when we're in that mode.

Being overwhelmed also causes all the balance challenges mentioned above in the strength myth: we become rigid, less sensitive, and more susceptible to falling because our natural supple corrective actions are suppressed.

You'll improve more, and faster, by exploring in states where you can learn and refine your balance-related skills. Think of a baby in a crib: seek out playful, safe challenges to your balance. Take opportunities in life and in Feldenkrais lessons to listen carefully to your sensations when you gently and safely disturb your balance, in actions as simple as shifting your weight. Attend to your sense of ease, and rest when you want to, so the challenges remain fun. Explore body parts relationships (like head and pelvis), and the sensory relationship with the surface you're on. Don't overload your system. Instead look for small challenges, and "overload" on their sensory details.

*Faulty image 4: "Aging means balance must worsen," and/or "I can't improve."*

There's some truth that aging diminishes the capacity of some of our neuromuscular balancing equipment, and certainly there is statistical truth that falls happen more to older people. Often as people age they start to move more rigidly, and lose some of the ability to react quickly to disturbances in balance with supple adjustments to their center of gravity.



However we can always learn, refine, and improve our skills, even if we don't feel as strong or fast. We have many systems and ample redundancy related to balance, meaning we can often function well even if one or more systems are compromised. We balance with our sensitive relationship to the support surface, our proprioception (knowing where our parts are, and our skills in counterbalancing them), our vestibular system, and our visual system.

Feldenkrais study develops our skills to sense disturbances and make adjustments to gravity.

ATM lessons gently and safely prove to us, through our own felt-sense experience, that interacting with gravity is about sensitivity, suppleness, and coordination – not strength, effort, and fear – and all of these things can improve at any age.

## Talking about “losing” balance

Our sense of balance is at the core of our habits and literally everything we've learned to do, so unless we're studying, we only tend to think of balance when we “lose” it. But from a physics point of view we lose our balance and recover it all the time: when we walk we move our center of gravity out from over our base of support (one foot) and then place a new base of support there to catch us (the other foot). So if you walk, you're already incredibly skillful at recovering your balance. “Losing it” is a matter of degree.

When we *feel* unstable, or that we may fall, it's a big neurological event. Protecting ourselves and recovering our balance become all-consuming tasks. Whether we fall or recover when we lose our balance, at that moment our skills, awareness, and experience make a difference. It's worth it to fine-tune them, since moments of instability surprise us every day.

We can improve our balance by developing safer responses to life's most unstable moments, and it's never too late to learn. Studying the Feldenkrais Method develops these skills, and helps us build confidence in our ability to recover, which further improves our balance. Feldenkrais can help us get past habits that limit our sensitive response to gravity, and can help us get past compensatory strategies from past injuries that lock us out of natural, sophisticated ways to reduce fall risk.

## Reminders for ATM and FI teaching

My intention in the previous section was to share the most effective language and communication strategies I've developed to address the often-neglected limiting factor of our students' conceptual understanding of gravity and balance.

It may also be helpful to share a few reminders about how ALL Feldenkrais lessons are opportunities to consciously teach students to play more nicely with gravity. Remember to frame these explorations with why we want to become more skillful sensors and movers in gravity: *we're cultivating the ability to recover*, which Moshe Feldenkrais called "our greatest quality."

- 1. We're always in gravity:** All movements require balancing; it's just a matter of degree of difficulty. We should teach some lessons that give a gentle direct challenge in gravity, such as standing lessons, or seated lessons involving shifting away from plumb and returning. But remind students that even lying on your side and rolling your body a little forward and backward is a balance game, and that studying on the floor with no fear of falling allows for much more subtle attention and improvement. Our miraculous nervous system takes into upright life all the learning about gravity we do while lying down, just like it did when we were babies.

2. **Teach reversibility:** It's helpful to emphasize smooth, flowing changes of direction, in different tempos, and to help students avoid abrupt movements and static feelings at the ends of the range. It's very important to note that Moshe didn't intend "reversibility" to mean literally reversing movements. He meant the ability to *change course* as needed mid-movement. Think arcs, circles, and unexpected vectors, introduced gently.
3. **Focus on floor forces:** Remember that experiencing the details of shifts of weight on the support surface *anywhere* on the body, even while lying down, generates usable nervous system data about balance. Feet and pelvis shifts are important, but even rolling the head can be about balance.
4. **Cultivate length:** Lessons that attract students to sensations of effortless length are very important. Functioning around the maximum skeletal height available in whatever we're doing allows us to adjust with minimal effort in any direction, from any disturbing force, without hesitation or preparation. As Moshe put it, "The standing body is thus ever ready for translation movement at short notice." I do find it necessary to simplify this concept for most students. I teach that we are suspended upright between terrestrial gravity (real gravity) and "celestial gravity," a helpful poetic image that steers students to sense the effortless anti-gravity function of the skeleton. For most students this is as close as I can get to teaching the concept of the highest available center of gravity being desirable for better balance in whatever we're doing, though this can be a rich ongoing discussion with experienced students.
5. **Free the hip joints and pelvis (and spine and head...):** More options and agility for getting the pelvis quickly underneath the center of gravity are essential. Remind students about their big, beautiful ball-and-socket hip joints, and the joy of a freely swinging pelvis, and help them experience these gifts. (It is always useful to call out the tremendously damaging cultural hangups about these body parts and movements!)

**6. Invite conscious transitions:** Remind students that getting up, getting down, rolling to side-lying, etc., are all part of the learning. Learning about changing position in gravity while they're tuned, sensitive, and slow-moving in lessons makes responses to surprise external disturbances in balance (stumbles, getting bumped) more efficient and effective.

**7. Always help them breathe more easily:** There are so many reasons to teach breathing, but in this context I like reminding students that a free thoracic and lower abdomen is incredibly helpful for quick access to little balance-corrective reshaping of our center of mass. Every Feldenkrais lesson can include linking together better breathing, balance, and posture/acture in ways students can sense for themselves.

**8. Remind them to *play with gravity*.** Experiencing pleasant sensations, curiosity, and lack of self-judgment – in life and in lessons – is fun! Help students find appropriate safe opportunities for gentle, playful challenges. It's very individualized teaching: for some students this might simply mean seated games on a firmer chair than usual. For others it could mean walking slowly while barefoot or in minimal shoes on uneven natural surfaces. If they're more confident they might play with kids or grandkids on playground equipment. Invite students to picture babies and small children, or observe young children in their lives. Help them notice the details of how children sit, stand, walk, run, breathe, fall and get up. When observing closely, everyone intuitively notices the *quality* of movement of kids. Invite them to consciously include the playful elements of these images into their own games with gravity, and their ATM studies.