

HOW PROGRAMMERS CAN THINK ABOUT FELDENKRAIS

Computer programming has changed tremendously over the last two decades, but some ideas have stood the test of time. In Object Oriented Analysis and Design, first published in 1990, software architect Grady Booch noted:

“Modularity is the property of a system that has been decomposed into a set of cohesive and loosely coupled modules.”

Today, Booch’s ideas of loosely coupled design are embraced by programmers world-wide. In well-designed computer programs, each module does a small number of things well. There are specific and well-defined ways that a module talks with other modules. Modules are functionally independent; changes to one module will not affect other modules.

Contrast this with a tightly coupled machine. Parts in a tightly coupled machine are designed to run “like clockwork”. All the parts move in lock-step with each other.



A 19th century orrery: a model of our solar system with all its parts moving “like clockwork”.

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There are problems designing programs with a tightly coupled design:

- The modules are large or everything is in one huge module.
- Changes to one module can change the behavior of other modules in unpredictable and undesired ways.
- As the computer program grows, it becomes increasingly difficult or impossible to have it behave correctly.

Our musculoskeletal structure is loosely coupled. Our bones don't touch; there are no levers or fulcrums. We're designed to move in a smooth and flowing fashion; we don't move like a clock or any other tightly coupled machine.

If we are loosely coupled, why don't we consistently move that way? And what does this have to do with Feldenkrais?

Our nervous system sends signals to multiple muscles simultaneously; such signals are the foundation of our posture and coordinated movement. Every movement in our bodies is a concert of dozens if not hundreds of muscles.

What happens when our nervous system works too hard? What if the system tensions muscles that are unnecessary—or even counterproductive—to hold a posture? What if some or all of our muscles are over-tensioned for the force needed for a particular movement? What if some don't have sufficient tension? What if muscles tend to be fired together when they don't need to be fired together? All of these patterns impose artificial couplings on our musculoskeletal system.

The results of artificial couplings are the same as a tight coupling:

- Extra effort and energy are needed in order to move.
- Changes to the position of one part of our body will disproportionately affect other parts of our body.
- Movement may feel stiff or awkward; range of movement will be limited.
- If the artificial coupling is in place a long time, it becomes increasingly difficult to move without pain and, ultimately, injury.

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Feldenkrais classes, called Awareness Through Movement (ATM) lessons (http://www.feldenkrais.com/method/awareness_through_movement_classes), allow students to discover where they have imposed those artificial couplings on themselves. The lessons are disruptive to counterproductive patterns of movement; they allow us to notice better ways to move. A programmer might describe Feldenkrais as a way to refactor (<http://en.wikipedia.org/wiki/Refactor>) your structural patterns.

Awareness is the key! Each lesson begins and ends with a benchmark: a way for each student to clearly measure the impact that the lesson has on a range of motion, sense of balance, etc. Luxurious time is spent during the lesson to reestablish an awareness of the positions and pressures in our bodies. Moshé Feldenkrais was an engineer (http://en.wikipedia.org/wiki/Moshe_Feldenkrais); odds are high his lessons will have a special appeal to engineers.

All body/mind disciplines are about altering the network of tensions in our body, but Feldenkrais specifically targets the artificial couplings that we have imposed on ourselves. If my explanation of Feldenkrais doesn't make sense, don't worry: *Feldenkrais instructors don't talk that way*. Ultimately, the "why" may be the least important thing.

To find Feldenkrais classes, go to www.feldenkrais.com and see which local instructors offer ATM lessons. A variety of lessons are available in books, CDs, websites, but it's really valuable to try a dozen or so lessons in a class setting first.

