It's Complex...Now What?

by Matthew J. Taylor, PT, PhD

The future of rehabilitation depends on our collective ability to move beyond linear, simplistic thinking to not only thinking complexly, but delivering care that embodies that thinking. The "buzz" at national conferences, in the literature and on the social media PT feeds is about the need to understand pain and movement as complex. Appreciating complexity is an important first step in our next level of professional development. Even more important is transforming practice to reflect those new findings and to leave behind the out-moded, simplistic practices of the 20th century. The "Now What?" can best be understood by looking at the past and considering what we know in the present, before speculating on the future.

A 30 Year Look Back

In 1980 as a US Army - Baylor graduate student, the "buzz" was PT's could actually evaluate, assess and treat without MD intervention. As the leaders in autonomous practice we were expected to know our basic sciences so we could detect mechanical dysfunction down to the tri-planar level of each vertebra, and then have the hands to move that part back into place or train the neuromuscular imbalance into normal function. Sounds obvious today, but it was revolutionary then. Unfortunately that is still the dominant model in practice today.

Somewhere in the mid-90's having attended all the best CEU courses and using that material on myself, my low back was still increasingly unstable and creating debilitating bouts of pain. Kind of embarrassing, you can imagine. Long story short, we hired a yoga teacher for our integrated PT clinic/health club (another old, tired idea being kicked around these days) as yoga was to be the next hot fitness trend. I'd made fun of my wife for going to such a class, but when I could go for free, I decided to try it. Enter my appreciation for the complexity of pain and movement on a first person experiential level! Going once a week for two months in a group format, my back pain resolved and stability returned after over 10 years of a vicious downward spiral. That type of experience forced me to re-assess my world view on what pain and movement are and began a 16 year adventure into emerging mindbody science.

What We Know Now

What I know now in reflection is it wasn't the yoga per se that fixed my back as a variant of therapeutic exercise. Rather, the practice of inquiry and awareness of patterns of thought, beliefs, breath and posture expanded my lens of perspective far beyond getting parts in the proper places. Through the years of study, research and over 10,000 hours of clinical trials I quite literally can't put back on the "parts" lens. Don't get me wrong, our new complex practice requires us to know and be skilled in everything we have been doing and know, and then more.

Consider these developments:

- In my dissertation on chronic spine pain, I found these interesting bits of trivia that early on pointed to a need for a more complex perspective:
  - ...Eisenberger and Lieberman (2004) who were able to visualize through brain imaging that the same areas of the brain are active with chronic pain as with the emotional pain of social exclusion, leading them to conclude that physical pain and the emotional burden of loss and of decreased self-esteem may overlap in their underlying neural circuitry and computational processes.[1]
  - ...had imposed moderate loads on the spine and found that small increases in spine loading occurred in response to psychosocial stress (Marras, Davis, Heaney, Maronitis, & Allread, 2000). The compressive loads increased by an average of 7%, with even larger increases seen for certain types of individuals (e.g., introverts [13.7%] and intuitors [10.8%]).[2]
  - ...there is a relationship between forgiveness and pain, anger, and psychological distress in patients with chronic low back pain (Carson, et al., 2005). Patients who report an inability to forgive others might be experiencing higher pain and that forgiveness can be reliably assessed in patients with persistent pain, and that a relationship appears to exist between forgiveness and important aspects of living with persistent pain.[3]
  - ...only a minority (< 12%) of physical therapists reported use of some CBT techniques (to include relaxation) when treating older patients with chronic pain, yet their interest in incorporating these techniques into practice is substantial. Concerns with their skill level using the techniques, time constraints, and reimbursement constitute barriers to use of the interventions...[4]
- A case in point is to review the trajectory of David Butler's career. Try to get into either his or Moseley's sessions at CSM or Annual. The classes are packed beyond capacity as they brilliantly share the new research on the complexity of pain.
- Physical therapists and occupational therapists experience high rates of work-related pain. The most commonly affected body regions include the low back, neck, shoulder, and hand or wrist. The prevalence of work related pain reported in earlier studies ranged from 40% to 80%.[5]
- At the 2011 CSM women's health session I sat with 500 colleagues as we learned from Paul Hodge, Mary Massery and Marshal Hagins how human stability and movement is the result of an integration of the glottis, respiratory diaphragm and pelvic floor. Dysfunction at any level affects all three and creates a loss of power and function in the extremities, spine and respiration.

- The May 2011 issue of the Physical Therapy Journal was entirely dedicated to the "Psychologically Informed PT". What we think, believe and feel drives human function.

The blinders of our dominant paradigm of linear, ordered thinking quite literally keeps us in the well-worn ruts of our past. To acknowledge that there are BOTH patterns of predictability AND unique, complex individual human attributes confounds our quest for standardized practice. How as a profession do we move forward (intentional pun) to do both?

You can't change problems using the same thinking that created them

The Future of Rehabilitation

Given the above glimpses of complexity, how will we better care for both ourselves (given that we are in pain) and those we serve in the future? If we are serious about becoming true Doctors of Movement then we need to change the form of our thinking. Einstein is attributed with the famous quote about you can't change problems using the same thinking that created them.

As we begin to think complexly, we also have to develop the ability to move between paradigms of thought as well. This is a hallmark of transformational learning theory and demands we develop the ability to move between disciplines and see knew relationships within systems. Complex thought is a transdisciplinary process rather than a linear, mechanistic interdisciplinary process. If we fail in our flexibility to move with ease amongst disciplines we'll become rigid and largely irrelevant in the world of movement science. We must create a practical biopsychosocial model. Here are a few examples of creative transdisciplinary processes to illustrate our potential as doctors of movement:

- My work as the founder of the research section of the International Association of Yoga Therapist has revealed a new, albeit nascent, profession that offers a cost-effective model of rehabilitation service. The research is coming out of Harvard, UCLA, MD Anderson and numerous other education and research stalwarts. The Yoga therapists utilize posture, movement, awareness/proprioception, and, breathing to generate outcomes that have resulted in the recent NIH grant of $4.5 million to MD Anderson Cancer Center[6] and Ornish's epigenetic effect on regulating both immune enhancing and tumorgenesis gene expression using the same modalities with the addition of nutrition modification and group practice[7].
- In workplace wellness it isn't rocket science to set up a work station or modify biomechanics and in fact, many less expensive options for this service already exist. It does however take a doctor of movement to diagnose why the employee sits collapsed posturally in a $1500 chair. Evidence points to the importance of meaningful work in the successful recovery from a work related injury. What if using movement, posture, breathing and awareness could statistically significantly enhance employee satisfaction and retention, work production and creative organizational change?[8] Well it does. My 2-year at the Courage Center in Minneapolis, MN yielded those results and more.[9] Blending those PT modalities with new group action research process from MIT[10] and elsewhere rehabilitated not just individuals, but an organization's cultural and fiscal health.
- The challenges of adherence, accessibility to care, and motivation all require unique, creative interventions developed with the complex client, not a tear-sheet of unrelated repetitive therapeutic exercises. The "average" complex client requires transformational care that addresses the changes needed to shift health behaviors (actions). Such a collaborative relationship celebrating the client as hero and sage is part of that new neuroscience paradigm of patient-therapist attunement[11].

Merely making biomechanical diagnoses and prescribing movement and manual interventions has become tantamount to superficial, technician-level work of the last century. As doctors (L., to teach) we should understand and make use of our ability to educate (L., educare, to draw out) and direct the complexity of care needed by increasingly savvy, movement-challenged clientele in need of a biopsychosocial model. This will be the market place of real health care reform as the old sickcare system collapses under its inefficiencies. Medicine will utilize our breakthrough discoveries about what influences movement in therapeia as they should and they will refer clientele that they are unable to serve to us for consultation and collaboration with PT's as the experts. Join me, won't you, in creating the future of rehabilitation!

Endnotes

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