The Wise Brain Bulletin

News and Tools for Happiness, Love, and Wisdom

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Optimizing Your Brain with Exercise

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It's no secret that getting regular exercise is one of the most effective ways out there to nourish, preserve, and enhance that very Wise Brain of yours.

What is fascinating to me, as a psychotherapist-turned-Life-and-Wellness coach, is how many people in the helping professions fail to make enough time for fitness in their own lives. Many of my peers and clients *know* they should exercise, and in fact may spend a good amount of time encouraging their own clients to get active… yet they don't follow their own smart advice.

There are a multitude of studies on the benefits that exercise can bring in terms of mood, cognitive function, disease prevention etc, but is it really necessary to go through them all? If you've found your way to the Wise Brain Bulletin, it's not likely you need someone breathlessly delivering the news that exercise is good for your brain as though it were hot off the press.

Greetings

The Wise Brain Bulletin offers skillful means from brain science and contemplative practice – to nurture your brain for the benefit of yourself and everyone you touch.

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Rick Hanson, PhD, edits the Bulletin. Michelle Keane is its managing editor, and it's designed and laid out by Laurel Hanson.

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So what's the problem? My guess: too many of you out there are so busy helping others you don't make time to help yourself. You may see your own irritability, weight gain, insomnia, brain-fog, loss of self-esteem, or fatigue as a fair price to pay for being so, so, very helpful.

Do we need to drag out that whole "put on your own oxygen mask first" metaphor to remind you how silly this is? Who is a more effective helper: a well-rested energetic happy fit person, or a sluggish, depressed, stressed-out, martyred worrywart?

Probably many of you have already discovered the profound difference physical activity can make in your lives, and you've made exercise a priority. Congratulations! You can feel justifiably smug and just skim through the rest of this hoping there may be pictures of scantily clad fitness models tucked in here somewhere.

Others of you may be hanging out in Prochaska's Precontemplation phase, perhaps enjoying a Krispy Kreme and a cigarette out on the back stairs, thinking yeah, "Someday" seems like an excellent time to tackle this stuff! Perhaps you can dig this up later when the lightning bolt strikes and it occurs to you that you could happier and healthier *today* if you started to reclaim your health again with a few approachable baby steps.

So this excerpt from my rather odd little exercise eBook is mostly direct towards those of you in the middle. You may be totally on board with the idea of getting more active, you're feeling motivated… but the logistics just seem a bit overwhelming.

Note: this excerpt has been edited and cleaned up a bit, as the book itself contains quite a bit more swearing than is customary for any respectable self-help resource.

How Do Busy People Find the Time for Fitness?

There are so many things calling for your time and energy. Demanding jobs, family obligations, friends, hobbies, community involvement, cooking nutritious meals, Words With Friends, catching up on Downton Abbey, and then somehow getting enough sleep to keep from doing a faceplant into your skinny caramel macchiato during staff meetings. Just when are you supposed to exercise?

Clearly it's impossible.

Hmm, but wait...somehow Barack Obama makes time to exercise. Um, is your job *that* much more important than his?

A study by the Center for Creative Leadership (which is now hidden behind a pay wall so you may have to trust me on this), found that CEO's and other higher-ups who exercised

outperformed unfit executives when it came to overall leadership effectiveness.

More specifically, fit leaders beat the pants of the unfit when it came to "inspiring commitment, credibility, leading others, leading by example, energy, resilience and calmness."

Yet again though... how do they find time to do it? Clearly, people who work out consistently despite busy schedules must have some secrets.

I exercise religiously, but then I'm neither a top executive, nor president of anything other than my own imagination. Nor am I a parent, a moonlighter working two jobs, a full time student, or an office worker with a 2 hour commute. And even I struggle sometimes to fit everything in.

So I can only guess how the super-achievers do it. But it does seem as though there are some common themes among folks who, whatever life demands they face, are almost never too busy to exercise.

1. Plan It

However small you want to start, even if it's just a daily 10 minute walk, you need to figure out how and when it's going to happen.

Sounds obvious! But the biggest mistake many motivated but busy folks make is to substitute wishful thinking for planning. *"Hmm, maybe I'll get up early tomorrow? Maybe after work I'll go for a run?"* Maybe you'll get to the end of the week and realize you haven't done squat?

Consistent exercisers have schedules and routines and backup plans. They anticipate logistical problems, are prepared for last minute schedule changes, have worked out all kinds of alternatives depending on the circumstances, and are generally prepared with the right

clothes and equipment.

When and how will you next get some activity in, and what do you need to do to be prepared? Answer those questions and you're more than halfway there.

2. Combine Exercise With Other Activities

Pets! Family! Friends! They're all important to spend time with... maybe a hilly hike or a game of Frisbee or a bike ride instead of getting together over a big meal? Oh, wait, dogs are notoriously bad bicyclists. But perhaps you could romp around with your pooch and sneak in some intervals rather than standing there throwing balls for him or her to chase?

If there's a TV show you just gotta watch... could you stretch during it? Walk on a treadmill? Do a plank or a wall-sit until the sound of your moaning and whimpering and cursing drowns out the soundtrack?

Got any chores you could do the "hard" way? Swap a hand mower for a power one, walk or bike to the library, etc.?

3. Substitute Exercise for Useless Addictive Time-Sucks

Depending on how much time you like to waste, this could be as powerful as creating extra hours of the day by cutting out aimless web surfing or crappy TV shows. Or it could be as minor as swapping out some of the little compulsive breaks you don't even realize you're taking during the day to check things that don't need such constant attention...whether it be email, social networking sites, sports scores, stock prices, or your feed reader. What if instead you took more of those mini-breaks by stretching, or doing a couple of squats, or getting up for a drink of water?

4. Increase Workout Efficiency

Often it's possible to do two things at once, or to substitute exercise intensity for extra time.

Examples include circuit training (which incorporates cardio by the use of rapid strength training); or interval training (which can allow you to get a hideous and horrible challenging cardio workout in less than twenty minutes); exercise classes that combine cardio and weights and possibly annoying music; Cross-Fit and other impressively fierce

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functional fitness routines; yoga (which can combine stretching/strengthening/meditating), or even inventing your own synergies. You can sometimes stretch a couple of different body parts at the same time, or use your cardio warm-up or cool-down time to increase range of motion or work on balance training. Plus, falling on your face and getting back up again after you attempt too much multitasking is a great core builder!

5. Sneak Exercise Into Your Day

Yeah, yeah, yeah, we've all heard these suggestions before. But are you doing them? Take the stairs instead of the elevator, park further from the building, commute by bike or on foot, use a stand-up workstation or treadmill desk, use your lunch hour for a walk or run and eat a rushed sweaty meal when you get back, or crabwalk to Starbucks for a cup of coffee and freak out passers-by with your taut abs and triceps of steel. And as mentioned above, you could do stretches or relatively stationary exercises like calf raises, squats or isometrics to take a break while going about your day.

6. Ditch the Perfectionism

If you have a demanding life, and try to compare your exercise accomplishments to the stuff you read or see on TV, you're never going to feel like it's enough. Weirdly, this does not motivate better performance-- often it does exactly the opposite.

Many well-meaning folks fail to take advantage of perfectly good opportunities because they seem too wimpy compared to perfect-world exercise heroics shown on TV.

If you're busy, every little bit counts! So sure, try to strategize as to how you could get more out of the time you have, but if there's no time for the gym, maybe you could slip in a quick romp at the playground with your kid, or walk for half an hour after dinner. Something is always better than nothing.

7. Find the Joy

What sort of exercise gets you excited? Hiking? Tennis? Dance? Skateboarding? Golf? Window shopping in a fun neighborhood? Busy people sometimes unconsciously equate "fun" with "naughty." But scheduling time for exercise that you look forward to is not self-indulgent, it's crucial for your health and productivity. And activities you love to do, or at least don't hate, are much easier to stick to in the long haul.

8. Rethink Endless Chores

I suspect that the real secret of so many CEO's who handle huge jobs but still fit in workouts is: they can afford to hire help for all the time-consuming everyday obligations that aren't work-related. However, those of us not making six or seven figure salaries may

find it hard to afford personal chefs, valets, nannies, cleaning staff, etc.

So what to do about domestic duties if you also work outside the home? Left to their own devices, shopping, errands, bill paying, cooking, cleaning, child-care, etc. will expand to fit every available hour of the day and consume every spare minute you've got.

This is a huge subject, and none of these are easy, but some areas to explore are: getting better organized; lowering unrealistically high parenting and housekeeping standards; renegotiating family responsibilities if they are not shared equally; financial juggling to prioritize hiring help if possible; exploring exercise-with-kids options (jogging strollers, gyms with daycare, etc), and multi-tasking discussed above in #2.

9. Question Your Priorities

It may be that you are living the life of your dreams, and not getting enough exercise is just an inevitable trade-off of a fulfilling work setting. But sometimes, if there really is no time for exercise, or meditation, or bonding with your family, or healthy meals or even precious, precious sleep … it may mean you have some issues with work/life balance.

Could you imagine yourself with a different schedule that allowed you to take care of yourself? Perhaps even working at a different job? Or from a whole new location?

What would it mean to have more time in your life, and how might you eventually make that happen?

Western cultural norms can embed a sneaky "achieve and rise to the top above all else" career mindset that can inhibit making fully conscious choices about how we fit work into our lives. And it can be particularly difficult for people in the helping professions to carve out career versus personal boundaries. You may be able to handle the notion of financial and material compromises more easily than the idea that if you do less than devote every waking moment to helping others… that you are selfish and are not doing your part.

But these are bigger questions. In the meantime, to round out the list to an even ten, I'll leave you with the tiresome but oddly useful injunction swiped from the sage marketing folks at Nike:

10. Just Do It.

Maybe… today?

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Lizzie, My Lizard

Excerpted from *Biting the Apple* by Jeanie Greensfelder. © 2012.

The brain's amygdala,
nicknamed lizard-brain,
stays ever alert and wary.

Honed on fear and survival,
my Lizzie pumps cortisol
and disables my cerebral cortex.

Give her a symptom and
Lizzie stalks it to my demise:
sniffles become pneumonia;
a mole becomes melanoma.

Unsure of my acuity, she
repeats her report,
repeats her report,
repeats her report.

Desperate to silence her
I picture holding Lizzie,
stroking her scaly skin,
then containing her in a
terrarium. Through glass,
we stare at each other.

I study this creature
primed to keep me alive
even if it kills me.

Projective Dream Work and the Cultivation of Compassion

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Many great spiritual teachers, past and present, have pointed to compassion as a key to mankind's evolution, and even survival. Such teachers recommend compassion practices which traditionally come with moral, ethical or religious underpinnings, such as "love thy neighbor" and "seek equanimity and non-attachment." With nothing short of the future of humanity at stake, these compassion practices are adopted by people eager to evolve on a personal level as well as to contribute to evolution on the collective level. Advances in neuroscience have given us scientific methods to evaluate a wide array of practices and target our evolutionary work to practices that most effectively "*stimulate and strengthen the neural foundations*" of a compassionate state of mind (Hanson 2009). This article examines how effective projective dream work might be as a practice to cultivate compassion, using neuroscience as a point of entry.

Compassion

Teachings about compassion are central to the work of many great spiritual masters. The Buddha taught that to realize enlightenment, a person must develop two qualities: wisdom and compassion. The Dali Lama said *"Love and compassion are necessities, not luxuries. Without them humanity cannot survive."* In the moral teachings of Islam, compassion is named as one of the divine attributes. In Christianity, Jesus modeled compassion in all his interactions. Clearly, compassion is important to our ongoing future. Although Hanson points out that

"*humans are by far the most empathic species on the planet*," it is clear that our empathy is still limited, as evidenced by the level of suffering, pain and violence we inflict upon one another and upon our natural surroundings. We need to pay attention to cultivating compassion if we want to survive.

What is compassion? Compassion involves the ability to feel what another person is feeling, and it carries with it a desire to eliminate the suffering associated with those feelings, for oneself and for the other person. Because we are embodied beings, compassion is something that we experience in the body. Hanson describes it like this: "*to be truly compassionate, you must first feel something of what the other person is going through. You must have empathy…*" (p. 138). When we feel compassion, then, our bodies react. This reaction may include sensations of pain, sadness and a desire to "hold" the other person, either physically or psychologically. Consequently, any effort to enhance our ability to be compassionate, as individuals and as a species, implies corresponding enhancement of those parts of the brain in which the bodily sensations of compassion are triggered.

Neuroscience of Compassion

Neuroscience tells us that every experience we have shapes the brain. Everything we touch, smell, hear is stored as an electrical impulse in the brain, creating neural networks that help us to make sense of the world according to our own lived experiences. Using techniques such as brain scans and EEGs, neuroscientists can trace changes and activity in the brain structure and operation, correlating them to thoughts, feelings, and activities. When we experience the world, what is "out there" is really a subjective internal experience that reflects the triggering of neural networks in the brain. As we grow from infancy to adulthood, we develop, expand and prune neural networks, so that over time, we have established dominant networks. Sometimes our dominant networks operate; other times, new information comes into the brain, expanding the dominant networks.

What are the neural centers that support compassion? Hanson (2009) tells us that the human empathic ability, which supports compassion, depends on three neural systems. One system (mirror neurons) allows us to "feel" what another is experiencing through actions. The second system (insula and anterior cingulate cortex) allows us to "feel" what another is experiencing emotionally. The third system (prefrontal and temporal lobe structures) allows us to "track" the thoughts of another person. Siegel (2011) tells us that "*mirror neurons tie us, not just to other people's actions, but to other people's feelings.*" He describes a system in which the brain takes intention from the mirror neurons, combines the information with the superior temporal cortex, which then drives down to the insula and limbic regions, influencing the brain stem and body. Siegel states that "*this is the basis of empathy.*"

Because of the brain's neuroplasticity, we know that we have the physical capacity to enhance neural systems. Any effort to cultivate compassion must include work that "strengthens and stimulates" the systems referred to by Hanson and Siegel. To be truly successful, however, we must employ methods that target these systems effectively. Can dreaming and projective dream work help us to accomplish this objective?

Neuroscience of Dreaming

Peoples across time, cultures, religions and perspectives have grappled with the origins, meaning and purpose of dreams. Neuroscience offers us a new way to think about both dreams and dream work. From the perspective of the sleeping brain, dreams are experienced neurologically in much the same manner as events or experiences in waking reality. Research has shown that, during dreaming, the brain responds to the events of the dream in much the same manner as it would to waking life events (Taylor 2009). Dreaming has been called "paradoxical" because, while the dreamer's brain responds in a manner similar to waking life, the body of the dreamer experiences a sort of muscular paralysis preventing movement. Tedlock (1992, p.14) summarizes the physical aspects of dreaming:

> "*Physiological reactions include increased neuronal activity in the visual cortex, increase and variation in respiratory rate, reduced blood pressure, speeding up and variation of heart rate, and loss of muscle tone; also certain brainstem cells are activated, resulting in the same kinesthetic effect for the dreamer as if the balance organ were stimulated (this is hypothesized to be why dreamers perceive themselves as moving in space). Because of all this physiological activity, some researchers view the REM period as a conscious form of mentation.*"

To the sleeping brain, therefore, the physical experience of dreaming is much like the physical experience of waking reality. Greatrex (2002, p.93) explains it like this: "*….every act of perception modifies the experiential learning processes of the brain.*" This suggests that, like waking reality, dream experiences can strengthen, add to, or expand our neural networks. Our dreaming actions and emotions have already made changes in the brain structure and operation before we awaken.

So, to the sleeping brain, the physical experience of dreaming is much like the physical experience of waking reality; *it is real.* The dreamer's brain has been altered simply because of the dream. Therefore, one purpose of a dream might be to modify our neural networks, maybe even with evolutionary intent? And what about dream meaning? Might dream interpretation serve an evolutionary purpose? I believe that at least one form of dream work, called the 'projective dream work method', may indeed offer a path to developing a more compassionate state of mind.

Projective Dream Work

Over the years, prominent psychoanalysts and dream experts have made claims that dreams can advance human evolution. Sandor Ferenczi (1873-1933), a Hungarian psychoanalyst and associate of Sigmund Freud, stated *"dreams are the workshop of evolution."* Jeremy Taylor (2009, p.232), a world-renowned dream expert and advocate for the power of projective dream work, writes that *"…dreams and dreaming also advance collective potential for more evolved consciousness in the whole human species."* If we apply neuroscience to the activities of projective dream work, we can better understand how these claims make sense.

We have previously established that all experiences contribute to create, modify, or add to neural networks. Once we have the primary experience, however, we can continue to impact the brain by sharing, exploring, and imagining the experience. Important for our purposes, doing this work in a group appears to add additional value.

'Projective dream work' is a method of interpretation developed by Montague Ullman (1916-2008), an American psychiatrist and psychoanalyst who

was a strong proponent of dream sharing groups. Projective dream work, especially in group settings, uses the mind to facilitate changes in the brain, relying upon the brain's neuroplasticity. Hanson tells us that all activities in which the mind is engaged impact the physical structure and operation of the brain, and all physical functioning of the brain impacts the workings of the mind. He calls the mind and the brain "… *a single, co-dependent, mind/brain system*" (2009, p.7). Therefore, if we engage our mind in projective dream work, we can quite literally alter the physical operation of the brain centers where compassion is stored, if projective dream work can be traced to changes in those neural centers.

Projective dream work involves an exploration of the multiple levels and depths of meaning in a dream. The method starts with the belief that only the dreamer really knows the meaning of a dream. Sitting in a group, one of the members shares a dream, telling it as vividly as possible. The dream is always told in the present tense, as if it were occurring right now. The other group members imagine the dream, truly feeling into it as if it were their own. After a series of clarifying questions, about details or misunderstood elements of the dream, individuals begin to offer interpretations to the dreamer and other group members.

Interpretations about a dream are understood to be projections and therefore say more about the person sharing them than the dreamer. As a tool to maintain everyone's awareness of the projective

aspect of any dream interpretation that is offered, participants use specific language, beginning with "*if this were my dream…*" or "*in my imagined version of the dream….*". Every dream that is shared is considered a gift to the entire group, as it has the capacity to allow each member to gain a better understanding of how he/she sees the world, and also how others might see it in contrast. Quite often, group members will build upon the interpretations offered by others, reflecting the way in which their own understanding of the dream shifts when a new perspective is taken into account.

Before we explore the neurological basis of projective dream work, it may be useful to understand the psychological aspect of the practice. In psychoanalytic terms, projection is a defense mechanism. It involves attributing to others certain qualities or behaviors that we are not ready to accept as part of ourselves. Taylor (2009, p.232) states the following:

> *"It is through projection that we usually gain the first conscious, relatively clear…. glimpses of currently unconscious aspects of our own being that are pressing and clamoring for more conscious acknowledgement, recognition and expression in our waking lives. The more our conscious self-awareness develops and grows….the more necessary it is for us to recognize consciously, acknowledge, and withdraw these previously unconscious projections of our own inner lives from the people and situations in the external world where we first 'saw' them."*

In projection, when I see another person take action, feel an emotion or express a thought, I experience that action, emotion or thought as belonging to the other, not to myself. I am, quite literally, projecting myself onto the other. Considering the difficulty that I have internally recognizing the aspect of myself being projected, watching another person acting out that aspect is a step toward understanding it. Relevant for the purposes of projective dream work, projection involves me *watching you "be" me* in a dream.

The Neuroscience of Projective Dream Work and Its Application to Compassion

In order to understand how projective dream work is a practice to cultivate compassion, we must explore how projective identification impacts the neural networks. Earlier in this paper, we examined what Hanson (2009) said is the basis of empathy in the brain.

Three neural systems were identified. One allows us to "feel" what another is experiencing through actions. A second allows us to "feel" what another is experiencing emotionally. A third system allows us to "track" the thoughts of another person. Referring to the collective power of the three neural systems, Hanson claims that they "*help you understand, from the inside out, what it is like to be another person*" (p. 127). How does projective dream work impact these three neural systems?

System One: Feeling the Action

Mirror neurons enable human beings to "feel" what another is experiencing through actions. Greatrex (2002, p.96) quotes the neurophysiologists Gallese and Rizzolatti in this explanation: "*These neurons appear to represent a system that matches observed events to similar, internally generated actions, and in this way forms a link between the observer and the actor…*". So, mirror neurons enable the observer to understand the actions of another person because they act almost as "representatives" of the actions, enabling the observer to process the meaning of the action.

Siegel (2011) tells us that "*the mirror system is the way that you tap into, the way that you harness, your own abilities and project them out one the world.*" So, mirror neurons are activated in the process of projection and therefore, by extension, projective dream work. The dreamer describes the dream action, speaking in the present tense. This sharing enables the listeners/observers to imagine the dream actions, and to experience them as though the dream events were occurring to them in present time.

System Two: Feeling the Emotions

According to Hanson (2009), the insula and anterior cingulate cortex work together to allow us to "feel" the emotions of another. In psychoanalytic terms, Greatrex (2002, p.93) describes it as such: "*when we allow ourselves to be receptive to another person, we have the capacity to resonate with the unconscious feelings of that person like a vibrating tuning fork…*". Greatrex quotes the findings of other researchers, who show that communication can actually happen on deeply unconscious levels; this means that we do not even have to be conscious of the experience for it to affect us. All of this is registered in the brain.

During the process of projective dream work, emotions are evoked on at least four levels. At the first level, the dreamer will consciously describe the emotional content of the dream while sharing it. For example, the dreamer might describe an image in which she is flying, and state how happy it makes her feel. At the second level, the dreamer may convey emotional content through nonverbal (somatic) means, such as through physical actions or facial movements during the sharing. At still a third level, the group members offering projective interpretation may verbally offer up their own emotional reaction to the dream. For example, the flying image might provoke fear in a group participant, rather than happiness, since that person is afraid of heights. And finally, the dream group members may convey emotional reactions to all participants through the same nonverbal means as the dreamer.

I believe that this looped process of sharing emotions, verbally and non-verbally offers huge potential to activate the insula and anterior cingulate cortex, simulating those very neural systems which must be expanded in order to cultivate compassion. Greatrex (2002,

p.95) explains that: "*symbolic thought, intertwined with self-awareness and language, transforms the emotional matching capacity into a cognitive/emotional dialogue that we now refer to as mentalization.*" He further states that: "*…the capacity for self-reflective thought, embedded in feeling and language, offers the potential for consolidating change*" (p.93). Projective dream work, therefore, offers a solid platform for change.

System Three: Tracking the Thoughts

Hanson (2009, p.126) tells us that the third essential parts activated in the cultivation of compassion are the prefrontal and temporal lobe structures. When the prior two systems are operating, enabling one to track actions and emotions in others, the brain is presented with sufficient information to develop informed guesses about the "*inner workings of another person.*" The term "theory of mind" (ToM) refers to this ability. Siegel (2011) states that introspection arises as a result of the looped mirror neuron system, that includes the insula, sub-cortical area, the limbic brain stem and into the body state. He says: "*this is how you understand what is going on in the other person's mental world. This is how you develop 'mind sight' to see inside subjective experience.*"

Perspectives on Self-Care

Be careful with all self-help methods (including those presented in this Bulletin), which are no substitute for working with a licensed healthcare practitioner. People vary, and what works for someone else may not be a good fit for you. When you try something, start slowly and carefully, and stop immediately if it feels bad or makes things worse.

When a group is practicing projective dream work, the participants literally offer their thoughts to the dreamer (as well as to the group). After a dream is shared, and clarifying questions are asked, group members offer up their imagined version of the dream. Inherent in this imagination are the thoughts arising from the prefrontal and temporal lobe structures, which make sense of the symbolic dream content. This activity strengthens and stimulates those structures.

Projective Dream Work and Evolution

It is my contention that dream work can be an effective compassion practice, one with great evolutionary potential. If we examine dream work from a neuroscientific perspective, dreams take on a whole new meaning and purpose. Dream sharing supports the activation of neural systems that can lead to an increased capacity for compassion, "feeling" the actions, emotions and thoughts of the other dream group members.

The importance of the group setting in which to do dream work as a practice to cultivate compassion cannot be overstated. Hall (2010) talks about multiple levels of perception. At the first level, we take in reality through the senses (hearing, smelling, seeing). At the second level, we "*move inside to 'the theater of our mind'*" and re-present what we have experienced in order to "*run our own brain*" and send signals to the mind, body and emotions. At a third level, we think abstractly, investing meaning in reality. Hall (2010, para. 11) makes the following statement:

> "*….here we construct the human symbol systems and symbolic meaning structures….Yet is all of this perception just projection, or is it possible that we can detect and pick up from each other, and from humans who lived thousands of years ago the ideas and dreams they created?"*

Here, we find essence of where projective group dream work offers the potential for growth of compassion. When we work together in a group, we expand our associations with the symbolic imagery in a dream, well beyond what our neural networks afford us, to include the actions, feelings and thoughts of the dreamer *and* all the participants in the group who offer projective interpretations. As Hall (2010, para. 15) simply states: "*The 'world' does get in. It doesn't get in unfiltered. We filter it, we detect it, pick it up, and we then create our facsimiles of it in the representational and conceptual maps that we create.*" And, in the projective dream group setting, we offer those facsimiles back to all who are present, enabling one another to experience our collective actions, emotions and thoughts.

Supporting this idea that the group is essential for transformation, Greatrex (2002, p.97) says the following: "*It appears that the human condition is such that only in the presence of the other can we create change that endures.*" Speaking psychoanalytically, the author claims that: "*The intrapsychic work of creating psychic ownership involves translating temporal feeling shapes symbolically through our words into thought, feeling, and fantasy that enlarge the inner vistas of our minds.*" Speaking neurologically, it is through the projective dream work group process that the social brain is activated, enabling group members to engage in a looped system of sharing that literally serves as a compassion practice, by strengthening mirror neurons, the insula and anterior cingulate cortex, and the prefrontal and temporal lobe structures.

Summary

Neurophilosophy takes what we are learning about the brain and applies it to better shed meaning on the world. As the host states in the NOVA scienceNOW episode on mirror neurons (2005): "*there is a place in my brain whose job it is to live in other people's minds…to live in other people's bodies.*" We know that dreaming affects the brain neurologically and that the neural centers that activate compassion are stimulated when we engage in projective dream work. This means that projective dream work can be used as a compassion practice, one with tremendous potential. If we are to evolve as a species, we each hold part of the responsibility to adopt practices that strengthen our own compassion. I now see dream work as central to my compassion practice, a practice whose effectiveness can be measured by scientific study.

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Fare Well - may you and all beings be happy, loving, and wise.