

Community Institute for Psychotherapy Linda Graham, MFT April 16, 2010

Healing Relationships: The Role of Oxytocin in Therapeutic Change

I'm Linda Graham, MFT in full-time private practice here in Marin and in San Francisco. I've specialized in relational counseling – individuals and couples – for almost 20 years. For the last ten years I've been integrating attachment theory and the neuroscience of relationships with mindfulness and trauma therapy. I first began to understand and experience the power of O to create a sense of safety and trust and thus promote a deep viscerally felt sense of connection and belonging in relationship about five years ago and have been teaching and writing about it ever since.

I'm going to lay some groundwork about O and then have you introduce yourselves in that context. Mostly I know many experienced and skillful clinicians in this room, therapist who already know a lot about relationships, about attachment (O is the hormone of bonding and attachment) who already know a great deal about how the brain works and the role of neurotransmitters in regulating our emotional states, so I really do want to have a conversation, a dialogue among us. I expect I will be learning from you today, too, as we come together to learn for ourselves and move the field forward.

When our clients come to us stressed out, dealing with the upsets and challenges of life or coping with trauma, experiencing anxiety, close to panic, or when clients are disconnected within themselves, from others, sinking into loneliness, isolation or depression, when couples are constantly volatile and reactive, escalating into arguments, or when couples are so withdrawn and remote from each other, there's a chilling distance, even deadness in the relationship, when, in these states of physical and emotional dysregulation, clients can't be present, engaged, and available to listen to each other, or to us for therapy, it's going to be very helpful to offer tools and techniques that will actually help clients regulate the physiological arousal of their nervous system, regulate their anxiety to come back down into their window of tolerance, and use their social engagement system to come out of withdrawal, out of disconnection, out of defensiveness, to come back up into their WOT, to become present, engaged and available to do the work of therapy to heal the relational distress they came to us for help with. Activating the release of O is one of the most effective tools in the toolkit.

Do we as therapists need to know how oxytocin evokes a positive recursive resonance of safety and trust between us and our clients so that they can “take in” the new experiences of self and other generated in a warm, empathic relationship? Or why oxytocin is the neural cement of bonding and attachment - in any relationship - for our therapy with clients to be healing? Maybe not.

But as modern neuroscience probes more deeply into the structures, circuits and neurotransmitters of brain functioning, it illuminates many of the deeper mechanisms of therapeutic change.

- below the level of cortical processing of thoughts and beliefs – and certainly great therapeutic strides can be made through insight, through mindfully changing our conscious thought patterns and behaviors, through improved communication skills;
- below the level of limbic processing of emotions and unconscious relational rules – and certainly amazing therapeutic gains can be made when clients comfortably experience a full breadth and intensity of emotions, when new experiences in relationship with us “re-program” old, dysfunctional patterns of relating with others;
- below the level of somatic processing of body memories – and certainly miraculous therapeutic healing can happen when implicitly stored trauma memories are accessed, resolved and re-integrated into the psyche -

Scientists are discovering that changing the neurochemical scripts in the brain primes the brain to alter its neuronal scripts as well. We can begin to “re-wire” the deep encoding of all of our clients’ habitual, often unconscious, patterns of feeling, dealing and relating when we know how to prime the brain’s neural plasticity by strengthening the oxytocin response.

So, today, I’m going to bring us down through the layers of cognitive insight, communications coaching, emotional repairing, somatic resourcing, to the neurochemical level where, as interpersonal neurobiological regulators of our clients, we intentionally harness the power of O to create a biochemical platform for therapeutic change.

[introductions: name, where you practice, background in relational psychology or attachment, background in embodied psychotherapy, neuroscience, anything that integrates the body and/or brain into our work with the mind-self]

Oxytocin is just one of the many neurochemicals modern brain science is discovering are potent catalysts of psycho-physiological change in our body-brain. Oxytocin is one of the most relevant for us as therapists, because it is the neurochemical basis for the felt sense of safety and trust that allows clients to become more open to therapeutic change. I’m hoping that someday oxytocin becomes as much of a household word as adrenalin or serotonin, that the calm and connect response becomes as much an understood phrase as the fight-flight-freeze response or the need to elevate mood. Because it is oxytocin coursing through our body-brain that antidotes the flood of cortisol that gets triggered when we’re stressed or frightened and helps us feel safe; it is O that floods through our body-brain when we know that we are connected, loved, cherished; it feels warm and sweet. O is the hormone of bonding and attachment, whether we’re two days old or 22 years old or 42 or 72. O helps generate a felt sense of deep connection and well-being, even, according to Dacher Keltner at U.C. Berkeley, oceanic feelings of bliss and devotion.

The more we understand the role of oxytocin in regulating our physical arousal and emotional states, in healing relationships, in creating the platform for therapeutic change – and help our clients understand that - the more help we are going to be to them in the very immediate term and in the very long term.

Today I'll interweave some of the research about O; how it works in the body-brain, present some of the clinical applications, and there are many. I'll teach some of the tools and techniques I know of for activating the release of O, and offer a bibliography of resources. As we go through the clinical applications, please feel free to ask your questions that I hope to answer in a way that will be helpful for everybody.

O is a naturally occurring neurochemical, (sometimes called a neuropeptide or a neurotransmitter) that acts like a hormone in our bodies, meaning it crosses the blood-brain barrier and circulates in the blood stream as well as in the brain, to regulate the arousal level of our nervous system. It has been called the neuropeptide of safety and trust, the hormone of bonding and attachment, the molecule of motherly love. O is released through touch, warmth, and affectionate connection. Classic examples of connections that activate the release of O are breastfeeding and orgasm that can generate a blissful, other-worldly sense of contentment, "everything is all right" between two members of a couple, between a mother and newborn. [Stephen Johnson tells the story in his book *Mind Wide Open* of his wife and newborn coming home from the hospital two days before 9/11. They lived in lower Manhattan, and the day debris and ash were flying by their window, Stephen pacing the floor in agitation, his wife was nursing her newborn, buffered from the stress of what was happening, calm and content in the focused rapture of the breastfeeding.] But any warm, loving, touch can release O - hugs, holding hands, massage. Latest research has confirmed, because of how our brain process information, even thinking about someone who loves us is enough to activate the release of oxytocin in the brain, which is very good news for us therapists as we use the relax and repair quality of O to create a platform for therapeutic change.

1. First, let's explore O as a fast-track down regulator of stress.

I'm going to start by reviewing the fight-flight-freeze response or stress response because that's familiar to most of us, and even maybe with our clients, and because the calm and connect response of oxytocin is the immediate and direct down regulator of fight-flight-freeze.

When we are startled, when our brain senses danger or threat, the sense door to our brains, the thalamus, signals the amygdala, which is the 24/7 alarm center of our mid-brain limbic system. The amygdala is also our most primitive emotional processing center, at least in fast track, unconscious appraisal of positive, negative or neutral) If the perception of the amygdala searching its memory bank - and that is very fast, in milliseconds, and entirely implicit, entirely out of awareness - is that this person, event, thing, whatever, is dangerous or threatening, it sends a chemical cascade through the HPA axis, hypothalamus, pituitary, adrenals, that results in the release of cortisol which is what fuels the body to react in fight-flight-freeze response. We move, we act, we react, very quickly, very automatically.

This amygdala adrenal system doesn't shut itself off when we are safe. What can instantly reverse the stress response, what does quell the fear response of the amygdala in fast track mode, what shuts off the production of cortisol in our bodies, is O. O is our brain's primary agent to reverse the effects of the stress response. O also generated in

hypothalamus deep in mid-brain when we feel safe, which in this primitive fast track mode is when we feel safe and protected by an older, wiser, stronger, protective figure – which is our attachment figure, even an internalized, remembered attachment figure. The O sends its chemical signals through the PFC which quickly sends GABA (gamma amino butyric acid) down to the amygdala, which immediately inhibits the firing of the neurons of the amygdala. Then the amygdala stops sending the chemical signals that keeps the HPA axis producing cortisol; cortisol levels plummet, blood pressure lowers immediately. This is all in the sub-cortical limbic system; it does not have to go through conscious processing to happen.

I track the moment-to-moment physiological arousal in my clients, modeling for them to track themselves also, and when clients are hyperaroused I have them do a Hand on the Heart exercise which I will teach you in a moment to calm down the stress response.

So, for example, when my client Sue arrived for her regular therapy session a few weeks ago, she was agitated and upset. Her son's bicycle had been stolen two days before; the washer-dryer had gone on the blink; and suddenly her car needed new brakes. As a single parent, Sue had budgeted barely enough to cover seeing me each week. Now, with these unexpected expenses, she felt had to stop therapy right NOW.

Or a few months ago, Lisa was yelling at her husband Andy in my office. “You never talk to me anymore! I'm sick and tired of you never saying anything! You're like a brick wall!” Andy sits frozen on the couch, staring at his hands helplessly. Here's what I have them do, right in that moment, in the session.

Sit comfortably; place your hand on your heart. Breathe gently and deeply into heart center. As that steadies, breathe in any sense of goodness, safety, trust, ease, peacefulness you can.
De-brief.

Because there are neural cells around the heart, placing our hand on our heart and breathing deeply into our heart center activates the parasympathetic nervous system and begins to calm down the fight-flight arousal of the sympathetic nervous system. Because the vagus nerve connects the heart, lungs and gut with the cortex (our “higher” brain) placing our hand on our heart helps activate the release of oxytocin in the brain and signals the pre-frontal cortex to turn off the cortisol pumping messages of the amygdala.

Sue was able to calm down in the session with me enough that we could be curious about her situation without being overwhelmed, we could address all of the fears around the current cash flow crunch and could negotiate a workable fee payment. When I asked Lisa and Andy to do the Hand on the Heart, because they had done it before with me in session and knew that it worked, in less than a minute Lisa felt calm enough, Andy felt safe enough, to re-engage in the work they knew they needed to do to create the new patterns of trust, connection and intimacy that would save a fragile marriage. Andy reported in the next session that just two days before, Lisa had almost lost it running late getting their 4 year old son to pre-school. He was afraid saying anything would make

matters worse, so he simply stood in the doorway where Lisa could see him with his hand on his heart. Lisa caught herself, stopped, met his gaze, and put her hand on her heart, too. She calmed down and then calmly got their son to school – on time – without further upset.

2. This brings us to our social engagement system and the slow track, the cortical conscious use of O to regulate our nervous systems. O is released when we are in loving contact with another human being. What's important for therapy is that even evoking a memory, an image, and then the felt sense of being with someone who loves us unconditionally, someone we feel safe with, loved and cherished by, is enough to activate the release of O. We can teach our clients to use the power of explicit memory and guided visualizations to evoke the release of O and help themselves come back out of a sense of withdrawal and isolation into a sense of connection and belonging again. So we'll try this exercise, which is what I use with my clients most often.

We begin as before. "Place your hand on your heart. Breathe gently and deeply into your heart center. Breathe into your heart center any sense of goodness, safety, trust, acceptance, ease, you can muster. Once that's steady, call to mind a moment of being with someone who loves you unconditionally, someone you feel completely safe with. This may not always be a partner or a parent or a child. Those relationships can be so complex and the feelings mixed. This may be a good friend, a trusted teacher. It may be a therapist. It may be your grandmother, a third grade teacher, a beloved pet. Pets are great.

"As you remember feeling safe and loved with this person or pet, see if you can feel the feelings and sensations that come up with that memory in your body. Really savor this feeling of warmth, safety, trust, love in your body. When that feeling is steady, let go of the image and simply bathe in the feeling for 30 seconds."

De-brief.

For Lisa, her memory was baking cookies with her grandmother every Saturday morning back in the third grade. For Andy, this was the look of delight and pleasure in his son's eyes after a playful wrestling match on the living room floor two weeks before. For many clients, as it was with Sue, it will be us. They will remember a moment when we showed up for them and "held" them as they processed something difficult or painful; they can self-soothe and self-right in the flow of oxytocin released.

I want to place the fast track sub-cortical and the slow track cortical use of O in context of the WOT. If you imagine two parallel lines, the WOT is in the middle where we experience ourselves calm, present, engaged, a state of relaxed alertness. It's the subjective experience of feeling centered, balanced, safe and OK. If our nervous system senses danger or threat, we go up out of the WOT. This is the cortisol fueling fight-flight-freeze. We are mobilized and reactive. This is where our clients experience anxiety, stress, overwhelm, panic, trauma. We've looked at how the anti-stress circuit of O can down regulate the hyperarousal of the nervous system very quickly, very effectively

If our ANS acts on its own to shut down the overwhelm of hyperarousal by over-correcting the SNS, overactivating the PNS (brakes and gas) we can plunge down out of the WOT into shut down, collapse, numbness, lethargy, dissociation. Or if the NS is under stimulated – hypoaroused because of too much disconnection or defensiveness against connection, not enough connection, engagement, attachment, client goes down below WOT into withdrawal, isolation, loneliness, depression. The O released by engaging with the client, by connecting, insisting on connection, meta-processing the connection, making the safety and trust explicit, is also very effective in u-regulating the hypoarousal of the NS, especially over the long term.

3. We can also use the O response to prime the brain to be less reactive to stress in the future, because the chemical cascade of O, evoked whenever we remember someone we care for or feel cared for by, acts as a buffer against stress even before it occurs.

Phil Shaver, in his Handbook on Attachment, reports on results of research he's done at U.C. Davis, "priming" subjects' brains to exhibit less reactivity to a disturbing event by thinking of someone they love or feel safe with first. Consistently, the oxytocin released in remembering a secure attachment figure acted as a buffer against a stressful trigger a few minutes later.

In a study done in Richard Davidson's fMRI lab at the University of Wisconsin by J.A. Coan, women volunteers were given a slight but unpleasant electrical shock on their ankles while their brain responses of anxiety and pain were monitored in an fMRI scanner.

In the control group of women holding no one's hand during the procedure, participants registered anxiety before and pain during the shock. In the group of women holding the hand of a stranger (the lab technician) during the procedure, the reactions of anxiety and pain were reduced somewhat. But in the group of women holding their husbands' hands, the pleasurable security of holding the hand of someone who loved them (and the oxytocin thus released) down-regulated their stress and overrode both anxiety and pain. The women instead experienced peacefulness throughout the procedure.

Sue Carter of the Chicago Psychiatric Institute, one of this country's first researchers on O, says, "People under the influence of O don't have the same stress response that others do; bad news rolls off them more easily."

I now ask couples to practice generating the release of oxytocin in their brains before they leave our session, priming their brains to modulate arousal and prevent escalation in the 167 hours they are on their own during the week.

One way is to have them sit or stand facing each other. They hold each others' left hand, fingers facing up as though they have connected in a bow to each other. They place their right hands on each other's hearts. They gaze into each other's eyes with warmth and tenderness. Initially this intense non-verbal intimacy of this social engagement may even

generate a little stress on its own, but the experience of the oxytocin calming down that stress is a powerful positive reinforcement for the couple during the week.

Another way is the 20-second full-body hug, which Stan Tatkin at UCLA has found, when the couple feels safe enough with one another, is enough to release oxytocin in both men and women, putting a couple on the same loving hormonal wavelength for the time being. Twenty seconds is about three long, deep breaths, easy for a couple to time on their own, sometimes changing head positions with each breath. The full-body-ness of the hug maximizes the warmth of the touching; twenty seconds is enough to allow the couples' defenses to "melt" as they relax into their healing hug.

A third way is a gentle two-minute head rub, sensual without being sexual. The gently massage of fingers on the scalp, the forehead, the nose, the jaws, the ears, can lower blood pressure and calm racing thoughts. The touch, warmth, movement releases the oxytocin in the brain, calming the fear center, allowing a few moments respite from stress and pressure, and priming each partner to cope more resiliently with the next distressing wound or rupture in the relationship.

4. Now we use the O response to create a felt sense of safety and trust that supports therapeutic change

Louis Cozolino notes in *The Neuroscience of Human Relationships*, "Researchers have discovered that oxytocin can be released in the brain from all kinds of social interactions, psychological states and mental imagery, including therapeutic relationships. Oxytocin can evoke an inner sense of well-being that facilitates flexibility and openness to change."

Dan Goleman writes similarly in *Social Intelligence: The New Science of Human Relationships*, "Oxytocin generates a sense of satisfying relaxation. This brain chemical evokes the inner sense that everything is all right, possibly the biochemical basis for what Erik Erickson called a basic sense of trust in the world."

Sue Carter says a single exposure to oxytocin can make a lifelong change in the brain. As therapists, engaged with our clients' struggles in a heartfelt, compassionate way that touches their minds, hearts and souls, we can trigger many single and even sustained exposures to oxytocin. Through our clients' resonance circuits they can internalize an image of us as a caring other, a True Other to their True Self, and evoke the release of oxytocin in their brains any time they remember us later. The safety and trust thus generated sets the conditions for harnessing the neuroplasticity of their brains. We can help clients choose new self-perceptions, new relational strategies, new coping behaviors that result in powerful therapeutic change.

Because the tools of visualization and guided imagery can be just as reliable as physical touch in generating the oxytocin response, I teach clients to "Sit quietly. Close your eyes. Place your hand on your heart. Breathe deeply. When you're ready, imagine someone sitting across from you, looking at you with true love and acceptance. In this moment,

you can feel completely safe, completely cherished in their presence. Let yourself take in that love. Feel it fully in your body. Let it sink in. Set the intention to feel this sweet feeling of love and connection any time you need to.”

Another exercise is to call to mind someone you know unconditionally loves you. Imagine sitting across from them face to face, you can see all the love they have for you in their eyes; take it in, feel it, savor it, let it soak in. Now imagine trading places with them for a moment, so that you are looking at yourself through their eyes, seeing yourself as they see you. Imagine what you could be saying to yourself, as them, telling you how much they love you. Feel their love for you as they look at you. Then imagine being yourself again, again receiving their love coming toward you. Feel it, take it in, savor it. Let it soak in.”

De-brief.

5. How can we use the O response to repair attachment wounds from earlier development?

The circuitry of this O response, like everything else in the early brain development of the infant-child, develops in the interactions with our earliest caregivers, shaped by the parenting style of the parent. Lots of touch, warmth, safety, loving connection and attunement, this O response matures well. Less than optimal attachment, less than optimal conditioning, less than optimal development of this circuitry.

Lack of warmth and touch in a client’s earliest attachment relationships can de-rail the full maturation of oxytocin receptors in the brain. A deficiency in this “molecule of motherly love” makes it much harder for them to “feel” the love and trust available to them in other relationships later in life.

Our “re-parenting” of clients, allowing them to experience us as reliably secure attachment figures, (or helping couples experience each other as secure attachment figures) helps re-build those receptors in the brain, even after years of depression and loneliness. Is this easy or guaranteed? No. Is it possible? Yes.

Daniel Goleman again in *Social Intelligence*: “Oxytocin has a short half-life in the brain – it’s gone in just a matter of minutes, writes “But close, positive, long-term relationships may offer us a relatively steady source of oxytocin release; every hug, friendly touch, and affectionate moment may prime this neurochemical balm a bit.

“The benefits of oxytocin seem to emerge in a variety of pleasant social interactions – especially caregiving in all its forms. For a toddler, parents and family offer this savory security. Playmates and, later in life, friendships and romantic intimacy activate the same circuits. The systems that secrete these chemicals of nurturing love provide some of the neural cement for the loving bond. Where people exchange emotional energy, they can actually prime in each other the good feelings that this molecule bestows. When oxytocin releases again and again – as happens when we spend a good deal of time with people

who love us – we seem to reap the long-term health benefits of human affection. . . . Repeated exposures to the people with whom we feel the closest social bonds can condition the release of oxytocin, so that merely being in their presence, or even just thinking about them, may trigger in us a pleasant dose. Small wonder that cubicles in even the most soulless of offices are papered with photos of loved ones.”

We’re offering this neurochemical balm every time we allow ourselves to be used as a secure attachment figure by our clients. Our consistent responsiveness, our accurate empathy, our acceptance of every bit of muck and mayhem they bring us, helps the clients experience, perhaps for the first time ever, a safe enough haven in our re-parenting that they can resume the development of an internal secure base long ago gone awry.

One of my clients originally came to me with a horrendous generalized anxiety disorder. In our first session he reported the only way he could feel safe in this world was to imagine himself six feet underground before he had been born. Over time I learned one of the few places he actually had felt safe was in a spiritual community where he could surrender himself to practices of devotion and transcendence. This surrender was not escape or dissociation but a spiritual awakening supported by the oxytocin released by finding a safe haven in an accepting community. Over more time, he was able to experience similar safety with me, with his wife, with a growing circle of friends, to recover his capacities to trust and love others, to rely on trust and love from them.

Next exercise, again hand on heart, breathe. “Bring to mind someone you love, someone you can unreservedly, unconditionally love. This could be a benefactor, a dear friend, a beloved child or a beloved pet. Feel the love you feel for them in your body. Sense the flow of love from you to them. Then, when that’s steady, simply slip your inner self into that flow. Keep the love and empathy. Let it flow to yourself. If you can, let yourself receive the love and empathy; receive the care, feeling loved and cared for by your larger self.”

De-brief.

5. Re-wire the clients “internal working models” of relationship

The safety and trust generated by oxytocin allows clients to harness the innate neural plasticity of their brains to, over time, grow new neural circuits and re-wire old ones. They can re-work their belief systems, templates, schemas, object representations of self and other in relationship, without recalcitrance, blocks or inner saboteurs.

Remember, a single exposure to oxytocin can make a lifelong change in the brain. Therapy offers enough sustained exposure to oxytocin that clients can re-wire large segments of implicit relationship “rules,” even permanently.

Near the end of their therapy with me, Lisa and Andy shared an example of how much things had changed for them. They had been practicing the two-minute head rub I had suggested as a safe but sensual re-entrée to sexual intimacy.

Even though this exercise was meant to focus them on each other, out of the blue Andy suddenly mentioned that he wanted to take their son Jake camping weekend after next – a “boy’s getaway” for Jake’s 5th birthday. Lisa started to blow her top at her side of the family being forgotten again - Andy had promised to take her sister car shopping that same weekend. Let alone feeling deeply hurt at Andy de-focusing on them at such a tender moment.

Andy saw the train wreck about to happen; he quickly pulled Lisa into a soothing oxytocin-releasing hug, reassured her repeatedly of his love for her and her importance to him. Lisa was able to take in Andy’s sincere cherishing; Andy was able to re-focus on their own precious connection. They found their way to expressing their own deep bonding and intimacy before negotiating priorities and logistics later.

Oxytocin is not itself a therapeutic modality. Oxytocin is a hormone released in our brains under certain conditions to our great benefit. The more we can integrate tools to help clients intentionally generate the release of oxytocin in their brains, (and regulate ourselves by releasing oxytocin in our own brains!) the more helpful we will be to them through any blend of therapeutic modalities we use.

On the days when clients just can’t pay us enough to deal with the muck and mayhem they bring us, and we dream of going back to school to become a welder, knowing how to activate the oxytocin response can save a therapy – for clients and for us.

I find the more I intentionally harness the power of oxytocin to “relax and repair” regardless of the modality I’m drawing on in the moment to match the clients’ needs – psychodynamic, cognitive-behavioral, guided visualizations – the more I can help clients develop the biochemical platform of therapeutic change.

This is not the only work we do in therapy, but sometimes we can’t do the work with clients in therapy if this repair and recovery is not done. Do clients need to know it was O that brought their agitation or shut down back into a normal window of tolerance for them to benefit from its effects? Maybe not. But I have learned that clients do like the sense of mastery and agency that comes from knowing how this O response works.

And teaching clients these techniques gives them a sense of hope and empowerment that in itself is transformative.