**Radically Open DBT: Targeting Emotional Loneliness in Anorexia Nervosa**

Roelie Hempel, Ph.D., Emily Vanderbleek, M.A. & Thomas R. Lynch, Ph.D., FBPsS

**Abstract**

This paper conceptualizes Anorexia Nervosa as a prototypical overcontrolled disorder, characterized by low receptivity and openness, low flexible control, pervasive inhibited emotional expressiveness, low emotional awareness, and low social connectedness and intimacy with others. As a result, individuals with Anorexia Nervosa often report high levels of emotional loneliness. A new evidence-based treatment, Radically Open Dialectical Behavior Therapy (RO-DBT), and its underlying neuroregulatory theory, offer a novel way of understanding how self-starvation and social signaling deficits are used as maladaptive regulation strategies to reduce negative affect. RO-DBT proposes that rather than trying to be ‘emotionally regulated’ or achieving equanimity, long-term psychological well-being is achieved by increasing social connectedness. RO-DBT skills, including body posture, gestures, and facial expressions, activate brain regions that increase social safety responses that function to automatically enhance open-minded and flexible social-signaling, which are crucial for establishing long-term intimate bonds with others and becoming part of a “tribe.”

*Keywords:* Overcontrol, Anorexia Nervosa, Radically Open Dialectical Behavior Therapy, RO-DBT, Social Signaling

*“Feeling happy is great, but when you are lonely, it’s hard to feel happy no matter how much you might try to accept, reappraise, or change your circumstances.”(Lynch, in press-a)*

Anorexia Nervosa (AN) is a serious psychiatric illness that presents an exceptional challenge to clinicians. A disorder that is characterized by low body weight and intense fears of gaining weight, AN is difficult to treat and often chronic (American Psychiatric Association, 2013; Berkman, Lohr, & Bulik, 2007). Patients with AN may develop physical health problems and are also at a significantly increased risk for death by suicide, with a 57-fold greater risk relative to their age-matched peers (Keel et al., 2003). However, to date, no specific psychological treatment has been shown to be superior for treating AN patients (Hartmann, Weber, Herpertz, & Zeeck, 2011; Watson & Bulik, 2013). The aim of this paper is to provide a brief overview of some of the novel emotion regulation strategies linked to social-signaling used in a new evidence-based treatment, Radically Open-Dialectical Behavior Therapy (RO-DBT; Lynch, in press-a), developed specifically for disorders of overcontrol such as AN. The paper begins by introducing RO-DBT (Lynch, in press-a) and its major components, followed by a description of the concept of maladaptive overcontrol and how this relates to AN. We then discuss the importance of social signaling from an evolutionary and neuroregulatory perspective and how RO-DBT uses this to enhance the treatment of AN.

**Radically Open Dialectical Behavior Therapy**

Radically Open-Dialectical Behavior Therapy (RO-DBT; Lynch, in press-a) is a new evidence-based treatment that targets a spectrum of disorders characterized by excessive inhibitory control, or overcontrol (OC). Radical openness is the core philosophical principle and core skill in RO-DBT, which posits that emotional well-being involves the confluence of three features: openness, flexibility, and social connectedness. RO-DBT has been informed by over 20 years of clinical and experimental research, and is supported by experimental, longitudinal, and correlational research in a range of mental health disorders, including chronic depression, anorexia nervosa, and cluster A and C personality disorders (Chen et al., 2015; Keogh, Booth, Baird, Gibson, & Davenport, 2016; Lynch et al., 2007; Lynch et al., 2013; Lynch, Morse, Mendelson, & Robins, 2003; Lynch, Whalley, et al., 2015).

RO-DBT significantly differs from other treatment approaches, most notably by linking the communicative functions of emotional expression to the formation of close social bonds and via skills targeting social-signaling and changing neurophysiological arousal. RO-DBT treatment involves both individual treatment sessions and skills group sessions (and optional telephone coaching and consultation team), and centers around five OC themes: inhibited and disingenuous emotional expression; hyper-detailed focused and overly cautious; rigid and rule-governed behavior; aloof and distant style of relating; and high social comparison and envy/bitterness. The RO-DBT skills manual (Lynch, in press-b) offers 30 lessons aimed to address these OC themes, such as social signaling, activating the social safety system, mindfulness, loving kindness, self-enquiry, interpersonal integrity, forgiveness, learning from corrective feedback, and dealing with envy, bitterness, and resentment.

**Maladaptive Overcontrol**

Self-control—defined as the ability to inhibit competing urges, impulses, behaviors, or desires in order to achieve long-term goals—is highly valued by most societies and is often equated with success and happiness (e.g., Gottfredson & Hirschi, 1990; Vazsonyi & Klanjšek, 2008). A central tenet of RO-DBT, however, is that excessive self-control can be problematic: maladaptive overcontrol (OC) is associated with social isolation, poor interpersonal functioning, and severe and difficult-to-treat mental health problems, including anorexia nervosa (AN), chronic depression, autism spectrum disorders, and obsessive-compulsive personality disorder (Lynch, in press-a; Lynch & Cheavens, 2008; Lynch & Hempel, 2016; Zucker et al., 2007). Due to the high value most societies place on capacities to delay gratification and inhibit overt or public displays of emotions and impulses, problems linked with overcontrol have received little attention or have been misunderstood, making recognition difficult.

Lynch (in press-a) proposes four core deficits that characterize maladaptive overcontrol:

*Low receptivity and openness,* manifested by low openness to novel, unexpected, or disconfirming feedback, diminished reward sensitivity, avoidance of uncertainty or unplanned risks, suspiciousness, hyper-vigilance for potential threat, and marked tendencies to discount or dismiss critical feedback;

*Low flexible-control,* manifested by heightened capacities for self-control, increased detailed-focused processing, compulsive needs for structure and order, hyper-perfectionism, high social obligation and dutifulness, compulsive rehearsal, premeditation, and planning, compulsive fixing and approach coping, rigid rule-governed behaviour, and high moral certitude;

*Pervasive inhibited emotional expression and low emotional awareness,* manifested by context-inappropriate inhibition of emotional expression (e.g., exhibiting a flat-face when complimented) and/or insincere or incongruent expressions of emotion (e.g., smiling when distressed, showing concern when not feeling it), consistent under-reporting of distress, and low awareness of body sensations; and

*Low social connectedness and intimacy with**others****,*** manifested by aloof and distant relationships, feeling different from other people, frequent social comparisons, high envy and bitterness, and reduced empathy.

These deficits can be exacerbated by family/cultural/environmental histories valuing performance and self-control or reinforcing avoidance of risk and masking of one’s emotions. This emotionally constrained, aloof-vigilantstyle of socio-emotional coping limits the development of close social bonds. Thus, the problem with overcontrol is not emotion dysregulation, but emotional loneliness.

**Anorexia Nervosa: A Disorder of Overcontrol**

Anorexia Nervosa (AN) can be seen as a prototypical disorder of maladaptive overcontrol. In relation to bio-temperament, AN has been found to be associated with sensitivity to threat (Harrison, Sullivan, Tchanturia, & Treasure, 2010), insensitivity to reward (Harrison, O'Brien, Lopez, & Treasure, 2010) and low sensation-seeking behavior (Rossier, Bolognini, Plancherel, & Halfon, 2000). In addition, AN is associated with perfectionism, cognitive rigidity, insistence on sameness, and strong personal needs for structure and symmetry (Fairburn, 2005; Franco-Paredes, Mancilla-Díaz, Vázquez-Arévalo, López-Aguilar, & Álvarez-Rayón, 2005; Lynch, Hempel, Titley, Burford, & Gray, 2012; Safer & Chen, 2011; Zucker et al., 2007). Additionally, AN is associated with invalidating and critical childhood environments (Kyriacou, Treasure, & Schmidt, 2008; Mountford, Corstorphine, Tomlinson, & Waller, 2007), inhibited emotional expression and impaired recognition of emotion in others (Geller, Cockell, Hewitt, Goldner, & Flett, 2000), and aloof/distant relationships (Zucker et al., 2007). Finally and perhaps most importantly, individuals with eating disorders suffer from high levels of loneliness (Levine, 2012).

**The Importance of Social Signaling**

RO-DBT contends that human emotional expressions evolved not just to *communicate intentions* but to *facilitate the formation* of strong social bond and altruistic behaviors among unrelated individuals. Our *facilitative* advantage required our species to develop complex social-signaling capabilities that allowed for a quick and safe means to evaluate or resolve conflict, and resulted in unprecedented collaboration among unrelated individuals—a unique human feature that to this day is unparalleled in the animal world. Thus, when it comes to long-term mental health and well-being, what a person feels or thinks inside or privately is considered less important in RO-DBT than how a person communicates or social-signals their inner or private experience to other members of their tribe and the impact it has on social-connectedness.

Despite this, the vast majority of emotion research focuses on internal rather than external regulatory processes, most frequently those involving conscious, cognitive, and/or central regulatory features (Cromwell & Panksepp, 2011). This has resulted in a vast amount of research and treatment development that prioritizes emotion regulation as a fundamentally *internal* process. Examples of emotion regulation strategies that emerged from this line of reasoning include reappraisal (altering the meaning of an emotional event), situation selection (deciding to avoid or approach an emotionally evocative event), situation modification (physically manipulating one’s environment in order to increase/decrease the likelihood of particular emotions), and acceptance (acknowledging the moment rather than attempting to change it; e.g., see Beck, 1979; Gross, 1998; Hayes, Follette, & Linehan, 2004).

Lynch argues that, rather than targeting maladaptive cognition, internal emotion dysregulation, or avoidance coping, treatments for overcontrolled individuals in particular should focus more on targeting deficits in external emotion regulation, social signaling, and openness to experiences, the core factors posited to be maintaining isolation, loneliness, and psychological distress in disorders of overcontrol (Lynch, in press-a; Lynch & Hempel, 2016; Lynch, Hempel, & Dunkley, 2015). Thus, RO-DBT considers emotion and emotion regulation from a ‘collectivist’ model of emotional health, positing that individual well-being is inseparable from the feelings and responses of the larger group or community. RO-DBT does not consider humans entirely autonomous; rather, we are highly dependent on each other for our personal survival and our psychological health. Thus, RO-DBT emotion regulation strategies account for the needs of others, positing that what is most important for psychological well-being is not just about internal experience but the extent an individual feels socially connected to at least one other person or feels part of a tribe.

**The Neuroregulatory Model of Socio-Emotional Functioning**

RO-DBT takes advantage of the bi-directional nature of the autonomic nervous system and its sub-components (Berntson, Cacioppo, & Quigley, 1991) by teaching skills that activate our neurologically regulated social safety system (Porges, 2001). The neuroregulatory theory underlying RO-DBT separates emotion regulation into internal and external regulation, thereby accounting for the fact that, especially with overcontrolled patients, there is often a discrepancy between internal emotional experience and how the emotion is expressed externally (Lynch, in press-a; Lynch, Hempel, & Clark, 2015; Lynch, Hempel, & Dunkley, 2015).

The neuroregulatory theory underlying RO-DBT proposes that emotionally relevant stimuli can be perceived as safe, novel, threatening, rewarding, and overwhelmingly threatening or rewarding. The speed and intensity at which these stimuli are perceived depends largely on the individual’s levels of threat and reward sensitivity. These perceptions then guide our response tendencies, which can be either inhibited or expressed, depending on further processing and the individual’s level of self-control.

When we evaluate the environment as safe, the ventral vagal complex of the parasympathetic nervous system (PNS-VVC) is activated. Because this system is connected to the cranial nerves that control the muscles of the face, neck, middle ear, and vocal cords, the activation of this system allows us to be receptive to our environment, to respond to novel stimuli, and to communicate more effectively with others. This system is often referred to as the social safety or social engagement system (Porges, 2001, 2003). However, when there is a potential threat or reward in the environment, this system withdraws and the sympathetic nervous system (SNS), which facilitates flight, fight, and positive approach behaviors, is activated (Beauchaine, 2001; Gray & McNaughton, 2000; Löw, Lang, Smith, & Bradley, 2008; Porges, 2001). Finally, when a threat or reward is perceived as overwhelming and inescapable, the SNS withdraws and the evolutionarily older dorsal vagal complex of the PNS is activated (PNS-DVC). Activation of this system facilitates behaviors that are adaptive for conservation of metabolic resources when SNS response tendencies are ineffective and can lead to shutting down, immobilization, numbing, lowered pain sensitivity, and fainting (Porges, 1995, 2001; Schauer & Elbert, 2010). Importantly, whether or not a response tendency is expressed depends on one’s self-control tendencies.

**Applying the Neuroregulatory Model to Anorexia Nervosa**

This neuroregulatory model provides a novel means for understanding how restrictive eating and self-starvation can develop. AN individuals experience heightened bio-temperamental threat sensitivity, often exacerbated by socio-biographic feedback overvaluing self-control and avoidance of criticism, and as a result experience aversive tension across time and context, even in situations that most others experience as safe; in other words, their SNS flight-fight system is upregulated. Following periods of intense restrictive eating, the individual’s neuroregulatory system perceives the depleted metabolic state as life-threatening, thereby activating the evolutionarily older PNS-DVC, which functions to inhibit energy depleting SNS-mediated action tendencies, resulting in reduced pain sensitivity and emotional numbing (e.g., flat affect). In short, food restriction develops as a means to regulate negative affect, yet with a hidden price, because it also causes flattened affect (Lynch et al., 2013).

Thus, the neuroregulatory model offers an explanation for the deficits in social signaling in overcontrolled individuals: reduced or absent PNS-VVC social safety activation results in a decreased ability to both express and interpret emotions. When an individual experiences high levels of threat or anxiety, the social safety system withdraws and SNS threat-mediated defensive arousal dominates, resulting in impaired physiological responses linked to social affiliation and engagement: facial expressions become frozen and the ability to flexibly interact with others is lost (Porges, 2001, 2003). Chronic inhibition or disingenuous expressions of emotion that have been reinforced by early family and environmental experiences over-valuing correctness and an appearance of being in control further weaken the ability to engage in effective pro-social and flexible social exchanges. In comparison to non-suppressors, habitual suppressors of emotional expression report feeling more inauthentic in social settings and experience greater discomfort with intimacy (Gross & John, 2003). Likewise, incongruence between felt experience and displayed behavior makes it more likely for observers to perceive a person as untrustworthy or inauthentic (Boone & Buck, 2003; Kernis & Goldman, 2006), thereby reducing social connectedness and exacerbating psychological distress (Mauss et al., 2011). Furthermore, withdrawal of the PNS-VVC social safety system weakens empathic response behaviors by making the overcontrolled individual less sensitive to the facial and vocal expressions exhibited by others during social interactions. Research shows that individuals who tend to smile when angry or when revealing negative feelings are characterized by lower emotional empathy, whereas facial expressions of people with high emotional empathy tend to match their internal experience (Sonnby-Borgström, 2002; Sonnby-Borgström, Jönsson, & Svensson, 2003).

**Interventions for Improving Social Signaling in Anorexia Nervosa**

RO-DBT differs from many other treatment modalities for AN in that it does not consider restricted eating to be the primary problem; rather, RO-DBT therapists aim to address the core difficulties of overcontrolled individuals that are hypothesized to underlie the emotions, behaviors, and cognitions that may lead to symptoms of AN, particularly the restrictive subtype. Weight regain is not the focus of RO-DBT, but attending to the psychological factors that may be driving the eating disordered behaviors will, in turn, encourage healthier eating patterns and weight regain. RO-DBT conceptualizes restrictive and ritualized eating as a form of maladaptive inhibitory control that has been intermittently reinforced. Though life-threatening and therapeutic alliance ruptures always take precedence, the emphasis is on generating solutions that help the individual re-establish social-connectedness, signal their intentions more directly, and live according to their values. Additionally, heightened concern about a non-life-threatening low body mass index (BMI) may block work on non-eating disorder issues essential for recovery or might inadvertently reinforce future restrictive eating by conferring a “special” status on the client that excuses them from normal expectations or responsibilities (Lynch et al., 2013).

RO-DBT posits that it is critical to first engage neurophysiological systems that allow patients to feel safe in social situations. Feeling safe activates the social safety system, associated with contentment, friendliness, and social-engagement (Porges, 1995, 2001). When an individual feels safe, they naturally experience a desire to explore and flexibly communicate with others; they are able to relax facial and nonverbal expressions and engage reciprocally in fluid and genuine social interactions (Lynch, in press-a). Once activated, the social-safety system is also hypothesized to reduce compulsive negative affect-driven desires to restrict food (Lynch et al., 2013). A range of skills designed to activate the social safety system are taught, including non-verbal social-signaling strategies (e.g., eye brow wags and closed-mouth smiles, described in more detail below) shown to universally activate social-safety responses, signal cooperative intentions, and enhance social connectedness. Social-safety activation skills taught in RO-DBT also incorporate modifications of more traditional mindfulness-based interventions.

For example, RO-DBT teaches a form of Loving-Kindness Meditation (LKM) that has been modified specifically for OC clients in order to activate their PNS-VVC social safety system. Short four-minute practices have been shown to bring significant increases in positivity and social connectedness toward strangers (Hutcherson, Seppala, & Gross, 2008). Unlike traditional LKM practices, the overarching goal of LKM in RO-DBT is less about improving a person’s ability to experience love or kindness toward themselves or other people, and more about triggering a mood state associated with contentment, curiosity, and desires for social engagement that occurs naturally when a person’s social-safety system is on-line.

Plus, mindfulness approaches in RO-DBT for AN focus on ‘urge surfing’ food-aversive response tendencies, such as sensations of bloating, nausea, urges to vomit, or catastrophizing thoughts. The goal of these practices is not to mindfully enjoy the taste of food; on the contrary, the focus is on noticing aversive sensations, emotions or thoughts associated with food ingestion without responding to them as a crisis. Clients are encouraged to dispassionately observe food-aversive response tendencies and are reminded that the practice is similar to techniques used by sailors or jet-pilots to overcome severe nausea. Urge-surfing food-aversive response tendencies represents the only formal mindfulness practice that specifically focuses on food related stimuli (Lynch et al., 2013).

RO-DBT also capitalizes on proprioceptive feedback mechanisms and research demonstrating that humans tend to automatically mimic the facial expressions exhibited by an interacting partner; facial micro-mimicry functions to trigger similar emotional experiences in the receiver (Hess & Blairy, 2001; Moody, McIntosh, Mann, & Weisser, 2007; Schneider, Hempel, & Lynch, 2013; Vrana & Gross, 2004). RO-DBT therapists are encouraged to display closed-mouth cooperative smiles and eyebrow wags as a means of getting their clients into their social safety system (Lynch, in press-a). The closed-mouth smile is likely to be experienced by both the sender and receiver as a ‘genuine smile of pleasure’ and as a consequence triggers reciprocal smiling and social-safety responses. It is common for an automatic deep breath or ‘sigh of contentment’ to arise almost immediately after engaging a closed-mouth cooperative smile, indicating social safety activation (Porges, 2003). Social-safety responses can often be enhanced when the ‘smile’ is accompanied by a simultaneous upward movement of both eyebrows.

Another example of a social-signaling skill taught in RO-DBT pertains to what is commonly referred to as the ‘eyebrow wag’. This universal social-acceptance signal involves a simultaneous upward movement of both eyebrows and most often is also accompanied by genuine smiles of pleasure and melodic voice tones. The eyebrow wag occurs in a wide range of social situations, including greetings, flirting, approving, seeking confirmation and thanking. It is a powerful social signal that occurs across cultures, most often without conscious awareness (Grammer, Schiefenhovel, Schleidt, Lorenz, & Eibl-Eibesfeldt, 1988).

Finally, communicating openness is considered a powerful pro-social signal and radical openness is the core skill in RO-DBT. Indeed, most humans instinctively recognize the value openness brings to their relationships. For example, we tend to trust open-minded people because they are more likely to reveal rather than hide their inner feelings during conflict. Plus, we desire to affiliate with open-minded people because they are more likely to give others the ‘benefit of the doubt’ and don't automatically assume that ‘their way’ is the ‘best, right, or only way’. Radical openness posits that we often learn the most from those areas in our life that we find most challenging: unwanted emotions, thoughts, or sensations in the body are reminders to practice *self-enquiry* by directing one’s attention towards the challenging or threatening experience and asking “*Is there something here to learn?*” By openly revealing our opinions, feelings, and thoughts to others, we create reciprocal learning opportunities or dialogues that can further refine ideas, improve coping strategies, and enhance social-connectedness—not only for the individuals involved but for the tribe as a whole. Thus, in RO-DBT, an emotionally dysregulated experience is seen as an opportunity for new learning and social-connection rather than solely a time to practice down-regulating arousal or accepting ‘what is’.

**Conclusion**

Anorexia Nervosa is considered a disorder of overcontrol, characterized by low receptivity and openness, low flexible control, pervasive inhibited emotional expressiveness, low emotional awareness, and low social connectedness and intimacy with others. However, for the OC individual, superior capacities for inhibitory control are both a ‘blessing and a curse’: it allows them to delay gratification and work harder than most others in order to achieve long-term goals, yet the social consequences of compulsive self-control severely impact interpersonal relationships and impair social-connectedness. Indeed, AN individuals often report high levels of loneliness (Levine, 2012).

The neuroregulatory model underlying RO-DBT (Lynch, in press-a) offers a novel explanation of how AN individuals may use self-starvation as way to ‘numb out’ negative affect, and how social signaling has become impaired in these individuals. In contrast to other models, RO-DBT proposes that being emotionally regulated or feeling safe are not necessary precursors for psychological well-being per se. Instead, feeling socially connected or part of a tribe might be. What a person *feels inside* may matter less than how they *socially-signal on the outside*: we don't feel connected because we feel safe—we feel safe because we feel connected. This core proposition underlies the vast majority of RO-DBT treatment interventions, and RO-DBT uses body postures, gestures, and facial expressions to automatically trigger social-safety responses (via PNS-VVC social safety activation) in both the therapist and the client, thereby making feelings of genuine ease and social engagement and connectedness more attainable.

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