Chapter 6
Development of the "Affect Regulation Training" (ART) Program

In 2004, inspired by a lack of transdiagnostic interventions that specifically target a broad range of affect regulation capabilities, we began to develop the Affect Regulation Training (ART) program. Since then, the training has become quite popular in the German-speaking parts of Europe, where it is known as "Training Emotionaler Kompetenzen" (TEK, Berking, 2010; www.tekonline.info). The main difference between ART and the treatments reviewed in the last chapter is that ART has, from its very beginning, been focused on enhancing emotion regulation capabilities as a strategy to improve overall mental health and address emotion regulation skill deficits that are present across many disorders.

To improve regulation skills, ART systematically integrates techniques from various psychotherapeutic approaches such as CBT (e.g., Beck, 1995), compassion-based approaches (Gilbert, 2011; Weissman & Weissman, 1996), DBT (Neacsiu, Bohus, & Linehan, 2014), emotion-focused therapy (EFT, Greenberg, 2004), mindfulness-based interventions (Farb, Anderson, Irving, & Segal, 2014), neuropsychotherapeutic translational approaches (Grawe, 2007), principles used in problem-solving therapies (D'Zurilla & Nezu, 2010), and strength-focused interventions (Duckworth, Steen, & Seligman, 2005; Grawe & Grawe-Gerber, 1999) into a highly standardized and transdiagnostic training program. Although ART certainly shares theoretical assumptions with many of these approaches and uses interventions related to these various approaches, we believe the uniqueness and advantage of ART lies with its transdiagnostic approach and comprehensive use of a wide variety of specific strategies, interventions, and exercises in a structured training program that explicitly and exclusively focuses on enhancing general affect regulation skills.

6.1 From Science to Practice: Overview of the ART Skills

Since our empirical research using the ERSQ validated the skills of the Adaptive Coping with Emotions (ACE) Model as important for mental health and well-being (see Sect. 3.3), we distilled these general skills from the model into

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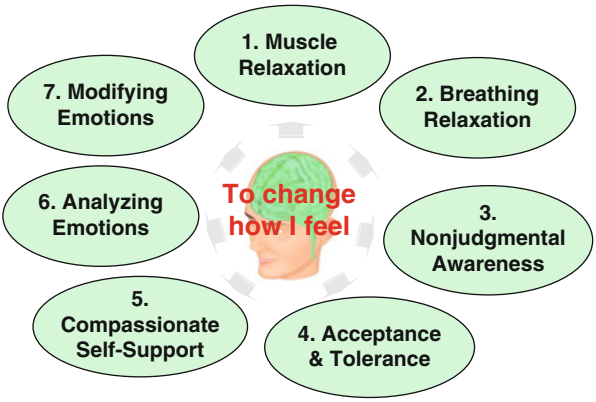

Fig. 6.1 ART skills and ART sequence

seven specific, teachable skills which we termed *ART Skills* (Fig. 6.1; see also Appendix B).

In the following section, we will describe each of the ART Skills using both a psychological and a neuroscience perspective. We have found that using neuroscience to explain emotion regulation and dysregulation is often more helpful for patients than exclusively providing psychological rationales. Many patients report feeling relieved to hear their emotions and behaviors have origins that can be understood in mechanistic terms instead of character flaws or rather abstract psychological concepts (e.g., unresolved family-of-origin issues). In our experience, this approach has helped to engage even patients who are only able to experience emotions somatically (e.g., stomach ache instead of nervousness). The ART Skills are presented to participants as techniques that can be used to interrupt neurological vicious cycles in the brain, which are involved in intensifying and maintaining negative emotions. The following section will describe these vicious cycles and the ART Skills that are presented as tools to effectively interrupt them.

ART Skills #1 & #2—Muscle Relaxation and Breathing Relaxation to effectively reduce psychophysiological arousal

In the first vicious cycle described to the participants, the amygdala initially becomes activated by a situation that is interpreted as a potential threat. The amygdala activation then initiates changes in the body, such as increased muscle tension and accelerated respiration. Because such physiological changes have occurred during threatening situations in the past, the increased muscle tension and respiration may be interpreted as danger signals by the amygdala, resulting in increased amygdala activation (classical conditioning Pavlov, 1927; somatic marker hypothesis Damasio, 2000), which could result in additional increases in muscle tension and respiration rate and a continuance of this vicious cycle. (For further information on how somatic processes are integrated into information processing related to emotion elicitation and maintenance, see Stemmler, 2004 or Teasdale & Barnard, 1993.)

When a person realizes that she is experiencing stress or negative emotions, she can stop this vicious cycle by applying the skills of consciously relaxing her muscles (ART Skill #1) and purposefully calming her breathing (ART Skill #2) to reduce the activation of the sympathetic system, the limbic system, and the brain stem (Lichstein, 1988; Porges, 2007). These skills are taught by introducing a technique based on *progressive muscle relaxation* (Jacobson, 1964) that is combined with a simple breathing relaxation method. Studies have consistently shown the effectiveness of muscle and breathing relaxation in the treatment of a variety of mental and physical disorders (e.g., Conrad & Roth, 2007; Gill, Kolt, & Keating, 2004; Öst, 1987). Additionally, with reduced limbic activity through breath and muscle relaxation, a shift can occur that changes the focus from primarily amygdala-driven limbic and brain stem-focused responses back to more prefrontal, cortical responses that are reflective instead of reactive (Arnsten, 2009). Thus, reducing psychophysiological arousal, with the help of muscle and breathing relaxation, facilitates the subsequent use of techniques that require significant cognitive resources.

ART Skill #3—Nonjudgmental Awareness

The next vicious cycle presented in the ART curriculum begins with amygdala activation in response to some type of a threat. The amygdala then alerts the prefrontal cortex which focuses attention and conscious thought on the threat (LeDoux 2007, 2012). This can be helpful in evaluating potential danger and in determining the most effective response. However, if this evaluation and brainstorming does not lead to resolving the threat, a continued focus on the potential danger can result in sustained amygdala activation. A vicious cycle is now set to occur as the sustained amygdala activation causes additional prefrontal cortex-driven analysis of the threat (Amaral, Price, Pitkänen, & Carmichael, 1992; Gray & McNaughton, 2000; Vuilleumier, Richardson, Armony, Driver, & Dolan, 2004), which may further increase amygdala activation.

Often, individuals try to rigidly suppress the negative thoughts (Ottenbreit & Dobson, 2004) and emotions (Campbell-Sills, Barlow, Brown, & Hofmann, 2006) that occur as the prefrontal cortex focuses thought and attention onto a threat. However, this strategy may actually have the paradoxical effect of increasing the intensity of negative thoughts and emotions instead of reducing them (Dalgleish, Yiend, Schweizer, & Dunn, 2009; Wegner, 2003). Thus, instead of fighting negative thoughts and emotions we encourage participants in the ART program to use ART Skill #3—Nonjudgmental Awareness in order to simply observe their situation, thoughts, and emotions without interpreting, judging, or reacting. This creates an opportunity to process what actually *is happening*, as opposed to automatically focusing on negative thoughts and evaluations of the situation.

When focusing on the nonjudgmental awareness of negative emotions, two important tasks (feeling and labeling) are involved:

1. *Feeling* consists of consciously experiencing one's emotions. This is important, since becoming aware of emotions is a critical first step in slowing run-

away limbic activation and reducing the process of automatic judgment and reaction. The idea of turning toward painful emotional experiences at first seems counterproductive. However, exposure therapy has been found to be effective and utilizes awareness of painful emotions in order to extinguish them (Hofmann, 2008).

2. *Labeling* utilizes words to create a mental representation of one's current internal experience. Evidence suggests that labeling emotions reduces their intensity by engaging the capacities of the prefrontal cortex to inhibit amygdala activation (Hariri, Brookheimer, & Mazziotta, 2000; Hariri, Mattay, Tessitore, Fera, & Weinberger, 2003; Lieberman et al., 2007). Once amygdala activation is decreased and prefrontal functioning is restored, cognitive resources such as planning, analyzing, and problem solving can be utilized to cope with the perceived emotion. In other words, with awareness that the churning feeling in my stomach is "anxiety," I can begin to calmly and thoughtfully figure out ways in which I could possibly change my emotion and my present situation.

Evidence supporting the value of *nonjudgmental awareness* comes from substantial research supporting the effectiveness of perception training (Papageorgiou & Wells, 2000; Wells, White, & Carter, 1997) and mindfulness-based approaches (Baer, 2003; Grossman, Niemann, Schmidt, & Walach, 2004; Hofmann, Sawyer, Witt, & Oh, 2010; Kabat-Zinn, 2003; Segal, Teasdale, & Williams, 2004), which view nonjudgmental awareness as an important mechanism of change (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Hölzel et al., 2011). Modinos, Ormel, and Aleman (2010) found that increases in dispositional mindfulness (observing emotions, describing emotional states, acting with awareness, and accepting emotional states; Baer, Smith, & Allen, 2004) were associated with increased activation in the dorsal medial prefrontal cortex when study participants responded to negative images with reappraisal. The increased activation in the dorsal medial prefrontal cortex (which has been associated with the downregulation of negative emotion) was inversely correlated in the study with amygdala activation.

ART Skill #4—Acceptance and Tolerance of Emotions

In the process of regulating limbic activation, the prefrontal cortex may activate in a more leftward or rightward lateralization. Left-lateralized activation has been associated with approach behavior and temperament, while right-lateralized activation has been associated with avoidance behavior and temperament (Berkman & Lieberman, 2010; Spielberg et al., 2011). Under the influence of a right-lateralization of prefrontal activation, people may attempt to escape from "threatening" limbic activation and negative emotions.

However, efforts to avoid experiencing negative emotions are unlikely to work, since we cannot simply turn off our emotions by sheer force of will. Emotions are primarily processed in the limbic system, and in the process of evolution, the limbic

system has retained a degree of functional independence from the areas of our brain that initiate purposeful action (Amaral et al., 1992). Moreover, emotions initiate significant changes in the body, which often impede instant purposeful changes of emotions (Teasdale & Barnard, 1993). For example, it is difficult to get immediate relief from stress when all of the muscles in the body are tense and the body is flooded with stress hormones. Additionally, it is believed that areas in the brain that help regulate negative emotions, such as the ventromedial prefrontal cortex and the anterior cingulate cortex under the influence of dorsal or lateral regions of the prefrontal cortex, may at times be "hijacked" by strong emotions. This can lead to decreased effectiveness of top-down regulation and increased rumination (Johnstone & Walter, 2014).

When a person is unsuccessful at attempts to instantly get rid of negative emotions, this failure will lead to increased amygdala activation and typically an increased sense of urgency to avoid the painful emotion (Martin, Tesser, & McIntosh, 1993; Rothermund, 2003). A vicious cycle may therefore ensue in which increasingly desperate attempts to get rid of a negative emotion only intensify the person's distress, while at the same time limiting the person's ability to effectively regulate negative emotions. *Acceptance and tolerance* (ART Skill #4) of negative emotions, instead of avoidance, can be used to interrupt or prevent this vicious cycle.

ART participants are encouraged to view negative emotions in a positive manner to facilitate acceptance and tolerance of them. This is accomplished by viewing emotions as "helpful allies that want to provide important information." (For additional information on adaptive conceptualizations of emotions, see Cosmides & Tooby, 2000.) Moreover, understanding the helpful functions of distressing emotions leads to more positive evaluations of one's feelings and thus cues positive emotions. For example, if I realize that my current feelings of anxiety are alerting me about a potential threat, I may perceive anxiety as helpful and experience positive feelings about my anxiety. Since positive emotions tend to inhibit negative ones, any such positive emotions help decrease negative ones.

ART Skill #4 also encourages a deeper understanding that emotions are both temporal and tolerable. This insight into the nature of emotions helps us more readily accept and tolerate negative emotions and resist the urge to avoid them. This skill becomes especially important during times when undesired emotions cannot be resolved quickly for various reasons. Evidence for the therapeutic potential of acceptance and tolerance comes from the previously mentioned research on the effectiveness of mindfulness-based approaches (Baer, 2003 Hofmann et al., 2010; Wupperman et al., 2012) and studies showing the effectiveness of Acceptance and Commitment Therapy, which involves acceptance of negative emotions and the willingness to experience unpleasant emotions in the interest of attaining important personal goals (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Additionally, support for the skill of acceptance and tolerance comes from studies that have shown its effectiveness in regulating emotions (e.g., Campbell-Sills, Barlow, Brown, & Hofmann, 2006; Gratz & Gunderson, 2006; Levitt, Brown, Orsillo, & Barlow, 2004).

ART Skill #5—Compassionate Self-Support

Many people criticize and devalue themselves for having negative emotional reactions such as stress, anxiety, anger, or sadness (e.g., "Why am I reacting this way? I must be going crazy! There must be something wrong with me! I am unable to stop feeling depressed, which shows how weak I really am"). However, when she criticizes her own emotional experience she threatens her basic *need for self-esteem* (Epstein, 1990; Grawe, 2004) and triggers additional negative emotions (e.g., anger, shame, guilt) that are associated with amygdala activation (Longe et al., 2010). The activation of the amygdala through self-criticism and additional negative feelings increases the stress response in the body and in the brain, likely leading to stronger negative emotions. These stronger negative emotions are responded to with even more intense self-criticism, resulting in a vicious cycle.

An effective strategy to interrupt this vicious cycle is to provide *Compassionate Self-Support* (ART Skill #5) that fosters empathy toward the suffering part of the self, takes active steps to encourage and soothe the suffering self, and lovingly coaches the suffering self through the steps necessary to alleviate one's suffering. Compassion, as used in this ART Skill, is a warm and powerful empathic feeling that is associated with the desire to help oneself cope with challenges (Gilbert, 2009, 2010, 2011; Weissman & Weissman, 1996) and should not be mistaken for self-pity, which is instead associated with passivity. Compassionate self-support not only inhibits self-criticism and self-blaming that generates negative emotions, such as shame and anger; it also results in positive emotions, such as feelings of safety and comfort.

Preliminary evidence has demonstrated the effectiveness of interventions that target compassionate self-support (Gilbert & Procter, 2006; Kuyken et al., 2010; Laithwaite et al., 2009; Lucre & Corten, 2013; MacBeth & Gumley, 2012; Mayhew & Gilbert, 2008; Neff & Germer, 2013). In a recent review of loving-kindness and compassion meditation, the authors conclude that these interventions "when combined with empirically supported treatments, such as cognitive-behavior therapy (…) may provide potentially useful strategies for targeting a variety of different psychological problems" (Hoffman, Grossman, & Hinton, 2011).

ART Skill #6—Analysis of Emotions

Unfortunately for many people, the origins of their own emotional reactions are a mystery, causing them to feel confused and out of control. This stress activates the amygdala, which leads to a release of stress hormones in the brain. These hormones have the capacity to strengthen amygdala functioning while impairing areas of the brain that are associated with cognitive processing (Huether, 1998; LeDoux, 2012). These brain regions, including the prefrontal cortex and the hippocampus (LeDoux, 2007), play important roles in the analysis of emotions. The capacity to analyze emotions facilitates a person's understanding of how and why the person feels the way she does, providing a sense of mastery and control over her emotions.

However, if through weakened prefrontal and hippocampal functioning, a person's capacity to analyze her emotions is impaired, she will likely feel confused and out of control. A vicious cycle now develops, since feeling confused and out of control triggers further amygdala activation. Now even more stress hormones are released in the brain, and the vicious cycle is repeated as stress hormones further weaken prefrontal and hippocampal functioning and increase amygdala activation.

For a person in this vicious cycle or to prevent the cycle from occurring in the first place, it is important to regain a sense of mastery and control over her emotions. This can be achieved through understanding how an emotion originally developed and how it is maintained. In ART Skill #6—*Analysis of Emotions*, participants are taught a method to systematically analyze the origins of an emotion by identifying a variety of specific factors that contribute to the development and maintenance of emotions. In addition to regaining a sense of control, analyzing an emotion also provides an important starting point to begin the subsequent process of modifying distressing emotions. Evidence for the skill of analyzing emotions comes from studies that demonstrate the effectiveness of insight-oriented psychological treatments. (For an overview of these treatments, refer to Gibbons, Crits-Christoph, Barber, & Schamberger, 2007.)

ART Skill #7—Modification of Emotions

Just as not understanding the causes of emotions can lead to feeling out of control, not knowing *how to modify* distressing emotions can also lead to feeling out of control. This can result in a vicious cycle similar to the one that was previously described, in which feeling out of control leads to amygdala activation and the release of stress hormones in the brain. As previously discussed, these hormones have the capacity to strengthen amygdala activation while impairing the cognitive processing capacities of regions in the brain that play important roles in the modification of emotions.

The ability to modify negative emotions provides a sense of control and mastery. If this ability is impaired by stress hormones, a vicious cycle may develop as out-of-control feelings lead to increased amygdala activation and further impairment in regions of the brain that are associated with the capacity for modifying emotions. In order to interrupt this vicious cycle, it is important to restore a sense of mastery and control. Just as control can be restored by analyzing emotions, control can also be achieved and enhanced by successfully modifying distressing emotions.

In ART Skill #7—*Modification of Emotions*, participants are taught an empowering step-by-step process, based on the general problem-solving model (D'Zurilla & Nezu, 2010), to actively modify the intensity and/or duration of an undesired emotion, thereby restoring a sense of control. In line with the general problem-solving model, the process begins with participants setting a goal for how they would rather feel. Then, a series of options are considered for how the goal could be achieved, and a plan for achieving the goal is created and implemented. Evidence for the efficacy of the problem-solving approach used in ART Skill #7 comes from research on problem-solving therapy (Bell & D'Zurilla, 2009; D'Zurilla & Nezu, 2007).

By acquiring the seven ART Skills just described, participants gain the ability to adaptively manage negative feelings. ART participants discover that negative emotions are only harmful if they become chronic or result in dysfunctional coping methods. They learn that negative emotions are temporal in nature and that they serve important positive functions in our lives. Participants also develop the ability to understand what has cued their emotions in a given moment and to modify undesired emotional states by working to change relevant maintaining factors. Finally, they learn how to cope with setbacks that arise in their efforts to regulate their emotions. These important benefits, which result from enhanced regulation skills, are coupled with improvements in how participants view themselves (e.g., with more compassion and acceptance), resulting in stronger motivation to pursue wellness. Ideally, a reinforcing cycle occurs in which an improved self-concept increases a participant's motivation to utilize the ART Skills, resulting in successful application of the skills, which enhances the participant's self-concept and continues the positive cycle.

6.2 "Chaining" ART Skills Together to Create the ART Sequence

In ART, the seven ART Skills are introduced individually, and time is allocated to discuss and practice each skill in detail. As participants become familiar with each skill and its application, the individual ART Skills are chained together to create the *ART Sequence*. The ART Sequence (Fig. 6.1) can be viewed as a highly structured self-management strategy, which can be used any time the individual suffers from significant undesired affective states. In such situations, the ART Sequence can be used as a regulation strategy, which provides a sense of control and guides effective coping behavior. Ideally, ART participants use the following instructions to initiate and successfully complete the ART Sequence:

In order to cope with this challenging feeling, I will now …

- *Take a few moments to relax my muscles* (*ART Skill #1*).
- *Calmly and consciously breathe in and out a few times* (*ART Skill # 2*).
- *Observe what is happening*, *without judgment. I try to label my emotions as specifically as possible* (*ART Skill #3*).
- *Accept my emotions as they are occurring in the moment. They provide me with valuable information. They inform me that ____. They will help me to ____. I am also aware that emotions are not permanent and that I can tolerate unpleasant emotions* (*ART Skill #4*).
- *Actively support myself in a compassionate and caring way* (*ART Skill #5*).
- *Constructively analyze why I feel the way I do* (*ART Skill #6*).
- *Use a step-by-step process to modify my emotions if I decide to change how I feel* (*ART Skill #7*).

As participants initially learn the seven ART Skills, it is important to remind them that they are not expected to master the skills immediately. The therapist should encourage participants to have compassion for themselves as they face the challenging task of learning and applying these new skills. Participants should also be instructed that while the skills in the ART Sequence are being introduced in this training, learning and applying these skills should continue long after the class is over as part of their lifelong pursuit of growth.

As participants gain proficiency in the ART Skills, they are free to modify the skills in the manner that will be personally most helpful. For example, some participants may decide to omit certain skills from the ART Sequence. Others may choose to modify the individual skills, and some may benefit from combining the ART Skills with additional strategies or techniques. However, we strongly encourage participants to practice the *complete* ART Sequence for at least six weeks before making any modifications in order to give themselves ample opportunity to thoroughly understand and assess each skill in the ART Sequence.

6.3 Practice and Repetition

Fostering adaptive emotion regulation involves strengthening synaptic networks in the brain that are responsible for effective emotion regulation. Strengthening these networks requires activating them frequently and intensely. To accomplish this, ART first helps participants identify specific emotion regulation goals that are personally important to them. Then, the ART Skills are explained from different angles, incorporating a variety of teaching methods including the use of group exercises, pictures, diagrams, and lectures. Finally, exercises designed to practice each skill are presented in the training sessions. These exercises constitute the core of the ART program. They should be practiced regularly, integrated into daily life, and continued after the training program has been completed.

In order to assist the participants in developing and maintaining a practice regimen, the ART program provides several tools. The first tool is the participant manual that includes the theory behind the ART Skills, descriptions of the ART Skills, and exercises the participant can utilize to practice the skills. The second tool is a set of guided audio exercises. These audio exercises either may be downloaded by the therapist (at www.AffectRegulationTraining.com—with access code: ART_Pcn2cfY) and provided directly to the participants or are available for purchase as prerecorded CDs. Information for ordering the CDs can be found at www.AffectRegulationTraining.com.

The third practice tool available for participants is a form of electronic or "e-coaching," in which several short exercises such as "Relax your shoulder muscles" or "Praise yourself for something you did well today" are sent to the participants daily during the course of the training via text messaging or email. Approximately 150 short exercises are sent between the delivery of the first and last

ART sessions. To activate the electronic coaching feature, ART therapists should refer to the instructions listed at www.AffectRegulationTraining.com.

The fourth practice tool is a training calendar document that contains the same short 150 exercises described above. ART therapists may download this training calendar document at www.AffectRegulationTraining.com—with access code: ART_Pcn2cfY. The therapist may then print and distribute the printed calendar to the participants.

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