A Control-Value Approach to Affective Growth

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Abstract

In this essay, I outline how control-value theory (CVT) can be used to understand and promote affective growth. They theory explains how emotion and motivation are shaped by individual appraisals of control and value as well as situational conditions, and how they impact thought, action, and performance. Emotions and motivation are linked with these antecedents and outcomes by reciprocal effects over time, which opens up various possibilities to manage emotions and motivate people. According to CVT, four major options include changing (a) situational factors, (b) appraisals, (c) emotional and motivational responses, and (d) personal competencies. In closing, I discuss a control-value intervention designed to modify appraisals and outline CVT principles to change social environments and everyday motivational practices.

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Since ancient times, thinkers have been intrigued by the question of how we can motivate people to behave according to society's norms, to adhere to the values of religion, or to live a fulfilling life (e.g., Seneca; c. 1 BCE – CE 65; Asmis et al., 2010). Various approaches have been proposed, ranging from changing one's thinking to altering nutrition, behavioral reinforcement, or the opportunity structures in the environment. Here I use control-value theory (CVT; Pekrun, 2006, 2021) to conceptually organize different approaches and to highlight approaches that may be most effective. CVT was designed to explain emotions. However, the theory can also be used to understand human motivation. In fact, CVT originated from an expectancy-value theory that integrated constructs of self-efficacy, expectancy, and value to understand motivation (Pekrun, 1988, 1992, 1993).

CVT suggests that appraisals of the current situation, possible actions, and their outcomes are prime drivers of both emotion and motivation, thus making it possible to explain the two using common principles. I will first discuss the role of these appraisals, the influence of related situational factors, and the impact of emotion and motivation on thinking, behavior, and outcomes (see Figure 1). Based on this discussion, I will highlight four ways to change emotion and motivation.

The Role of Control and Value Appraisals

CVT posits that emotions are prompted when one feels in control over, or out of control of valued activities and outcomes. Similarly, motivation is generated when it seems possible to perform an action that is valued, either because it leads to positive outcomes ("extrinsic," instrumental value), or because it is valuable in itself ("intrinsic" value; Pekrun, 1993, 2006; Wigfield & Eccles, 2000). Conversely, lack of control and lack of value lead to a decrease in positive emotions and motivation. For example, if students feel competent and in control over studying the learning materials in a course, and are also interested in the materials, then they can enjoy learning and will be motivated to invest effort. In contrast, if

the material is too difficult, enjoyment may be replaced by fear of failure, and if it is uninteresting, boredom may be experienced.

In this way, both emotion and motivation are influenced by perceptions of control, resulting expectancies of outcomes, and the value of actions and outcomes. In addition, there is also a more direct connection between emotion and motivation – emotions can directly trigger motivation. Enjoyment of meeting a friend prompts motivation to meet the friend again; anxiety before visiting a doctor can motivate to avoid physician visits; shame about negative evaluations by one's supervisor can motivate to do better next time; and boredom when attending a lecture can motivate to skip the next lecture.

Given the role of control-value appraisals as antecedents of emotion and motivation, individual factors that influence these appraisals, such as gender and personal beliefs, can also influence emotion and motivation (see Figure 1). Let us take gender and math emotions as an example. Due to stereotypes that girls are less able to mathematics, they often show less self-confidence in math, and are less interested in this subject as compared with boys – even when their objective math performance is the same. Due to these differences in appraisals, their emotion and motivation in math are also less positive. For example, girls have been shown to be more anxious in math and enjoy math tasks less than boys (Frenzel et al., 2007). Similarly, environments impact emotion and motivation by influencing individuals' appraisals, as discussed below.

Emotion and motivation, in turn, shape human thinking, behavior, and resulting outcomes (Figure 1). For example, emotions such as enjoyment, anxiety, and boredom have a profound influence on cognitive problem solving. Positive emotions typically facilitate creative, flexible thinking; negative emotions like anxiety promote more rigid, analytical styles of solving problems. Due to their influence on behavior, emotion and motivation impact important outcomes, such as success and failure in school, the salary earned for doing

one's job, the establishment of a new friendship, or giving birth to a child, as well as one's health and satisfaction with life. However, these outcomes not only depend on the emotions and motivations that direct behavior. They also depend on individual competencies to perform behavior in suitable ways, such as students' success at school depending on their cognitive abilities and skills to employ strategies for learning.

Relative Universality of Motivation and Emotion

CVT posits that basic mechanisms of motivation and emotion are common to all humans. As such, the principles linking motivation and emotion with their antecedents and outcomes are thought to be universal across individuals, settings, genders, and cultures. However, universality of mechanisms notwithstanding, the objects, frequencies, and intensity of motivation and emotion are expected to differ widely, due to differences in individual dispositions, developmental trajectories, situations, and sociocultural contexts ('relative universality' of motivation and emotion; Pekrun, 2009). For example, as noted above, typically female students report more anxiety and less positive emotions in mathematics, as compared with male students. Similarly, math anxiety differs substantially across cultures. Nevertheless, the links between these emotions and students' performance in math are similar across genders and across countries representing different cultures (e.g., OECD, 2013; for a summary, see Pekrun, 2018). Given the universality of basic mechanisms, principles for how to change motivation and emotion, as discussed in the next section, are also thought to be applicable across individuals and contexts.

Reciprocal Causation, Regulation, and Intervention

As discussed so far, environments and individual factors shape control and value appraisals; these appraisals generate and sustain emotion and motivation, which, in turn, impact thinking, behavior, and outcomes. However, behavior and outcomes reciprocally influence the appraisals, individual dispositions, and environmental factors that shape emotion

and motivation (Figure 1). For example, success on exams can increase students' self-confidence and expectations to be successful in the future, and lead to positive responses from parents, teachers, and peers, thus positively influencing subsequent enjoyment. As such, emotions and motivation, their antecedents, and their outcomes can be linked by reciprocal effects over time. The resulting cycles of reciprocal causation can be vicious, such as boredom at work undermining performance, and lack of performance increasing boredom. Alternatively, they can be virtuous, with positive appraisals, enjoyment and motivation, and productive outcomes reinforcing each other (see Pekrun et al., 2017, and Forsblom et al., in press, for empirical examples).

Reciprocal causation has important implications for the regulation of emotion and motivation. What can we do to motivate people (including ourselves)? How can we develop adaptive emotions and reduce maladaptive emotions? This question can be answered using the reciprocal effects perspective (see Figure 1). Given reciprocal effects, all components involved in the cyclic feedback loops of antecedents, emotion and motivation, behavior, and outcomes can be targeted to change emotions and motivation. For example, intervention can target behavioral performance because performance impacts the appraisals shaping emotion and motivation in the next causal cycle.

From this perspective, four groups of regulatory strategies and types of intervention may be most important (depicted at the bottom of Figure 1). First, emotion and motivation can be changed by changing situational conditions (*situation-oriented regulation and intervention*). An example is restructuring schools, classroom instruction, and the workplace (see below). Second, emotion and motivation can be changed by modifying appraisals (*appraisal-oriented regulation and intervention*). Third, it is possible to directly change emotional and motivational responses. Examples are using drugs, relaxation techniques, or suppression of expressive behavior to reduce one's anxiety (*response-oriented regulation and*

intervention). Finally, it is possible to build the competencies that enable skillful behavioral performance. Building competencies promotes success and positive social relationships which, in turn, positively impact appraisals, emotion, and motivation (*competence-oriented regulation and intervention*).

This four-fold CVT model of emotion and motivation regulation is consistent with Gross's model of emotion regulation (e.g., Gross, 2015). However, the CVT model also considers competence-oriented regulation which is so important across many life domains. While traditional theories of regulation focus on situational change to influence emotion and motivation, the CVT model also addresses the development of personal competencies, thus acknowledging that person and situation are equally important in explaining affective change.

Control-Value Intervention

Especially when individuals' beliefs are biased and too pessimistic (Scherer, 2020), focusing on changing appraisals is an important avenue to modify emotion and motivation. According to CVT, changing control and value appraisals may be most promising. Relevant control appraisals including perceived competence ("self-concept of ability"), expectations to perform behavior in competent ways ("self-efficacy expectations"), expectations to achieve desired results ("outcome expectations"), and attributions of results to causes that suggest controllability (such as one's own effort; "causal attributions;" see Marsh et al., 2019; Pekrun, 2021; Weiner, 2018). Value appraisals can refer to the intrinsic value of actions as well as their extrinsic value to obtain desired outcomes, as noted earlier.

Various motivational interventions have been developed that target either control appraisals or value appraisals. For example, attributional retraining aims to change causal attributions such that outcomes are attributed to controllable causes, like insufficient effort or poor choice of behavioral strategies, rather than to uncontrollable causes like lack of ability (Perry et al., 2014). Mindset intervention seeks to change beliefs that abilities are innate and

not malleable, which would imply that success cannot be achieved if ability is not high in the first place. The intervention makes clear that it is possible to develop competencies (Dweck, 2006). Utility value intervention changes the perceived value of action by helping individuals to understand how beneficial active engagement can be, both for everyday life and one's personal future (Hulleman & Harackiewicz, 2009).

We are currently developing a control-value intervention that aims to combine the advantages of different approaches. The intervention comprises four components. First, an attributional retraining component is used to change maladaptive causal attributions and expectations. Second, a mindset component is included which conveys information that growth can be achieved by developing one's competencies. Third, the intervention includes a utility value component helping to perceive value in active engagement. Finally, going beyond the existing motivation interventions, a negative value reduction component is included. As explained in CVT, high value can not only boost positive emotions but also exacerbate negative emotions. For example, if achievement is deemed extremely important, to the extent that life seems worthless without success, then excessive fear of failure can result. As such, negative value reduction helps people to reduce the perceived importance of failure, to perceive errors as opportunities to learn, and to value alternative routes to a fulfilling life.

The first two components (attributional retraining and mindset) aim to address important types of control appraisals: causal attributions, causal expectations, and perceptions of competence. As such, these two components may be helpful for people who suffer from a lack of perceived control. The second and third components aim to increase the positive value of engagement while avoiding to boost the perceived value of failure. As such, the intervention helps different groups of individuals at risk, both those who doubt their competencies, and those who are not able to see value in their activities.

Changing the Environment

CVT principles can also be used to conceive changes in social, educational, and workplace environments to promote affective growth, that is, to promote adaptive motivation and emotion, and to reduce maladaptive motivation and emotion. Specifically, given the role of perceptions of control and value as antecedents of emotion and motivation, changes in the environment may be effective if they help to change these perceptions. The following factors may be most important especially for education and the workplace (see also Linnenbrink et al., 2016).

Cognitive quality. The cognitive quality of classroom instruction and workplace requirements as defined by their structure, clarity, and potential for cognitive stimulation likely has a positive influence on perceived competence and the perceived value of tasks, thus positively influencing emotions and motivation to engage. In addition, the relative difficulty of tasks influences perceived control, and the match between task demands and competences influences perceived task value, thus also impacting emotion and motivation. If demands are too high or too low, the incentive value of tasks may be reduced to the extent that boredom is experienced.

Emotional and motivational quality. Teachers, supervisors, and peers deliver messages conveying values. Two ways of inducing values may be most important. First, if tasks and environments are shaped such that they meet students' and workers' needs, positive activity-related emotions should be fostered. For example, environments that support cooperation should help individuals fulfil their needs for social relatedness, thus making work more enjoyable. Second, teachers' and supervisors' own enthusiasm in dealing with tasks can facilitate the adoption of positive values and related emotions. Observational learning and emotional contagion are prime mechanisms mediating these effects (Frenzel et al., 2018).

Autonomy support. Tasks and environments supporting autonomy can increase perceived control and, by meeting needs for autonomy, the value of related activities (Reeve

et al., 2022). However, these beneficial effects likely depend on the match between individual competences and needs for autonomy, on the one hand, and the affordances of these environments, on the other. In case of a mismatch, loss of control and negative emotions could result.

Goal structures and social expectations. Different standards for judging performance can imply individualistic (mastery), competitive (normative performance), or cooperative goal structures (Johnson & Johnson, 1974). The goal structures provided in academic and workplace settings conceivably influence emotion and motivation in two ways. First, they can influence the achievement goals adopted by the individual and any emotions and motivations mediated by these goals. Second, goal structures determine opportunities for experiencing success and perceiving control. Specifically, competitive structures imply, by definition, that some individuals have to experience failure, thus inducing negative emotions such as anxiety and hopelessness. Similarly, the demands implied by parents', teachers', and supervisors' unrealistic expectancies for achievement can lead to negative emotions resulting from reduced perceptions of control.

Feedback and consequences of behavior. Positive outcomes of behavior can strengthen perceived control, and negative outcomes can undermine control (Forsblom et al., in press). In environments involving frequent assessments, performance feedback is a prime trigger of emotions and motivation. In addition, the perceived consequences of success and failure are important. Positive emotions (e.g., hope for success) can be increased if success produces beneficial long-term outcomes (e.g., future career opportunities). Negative consequences of failure (e.g., unemployment), on the other hand, can increase anxiety and hopelessness, and undermine motivation.

All of these factors are located in individuals' immediate environments, called "microsystems" in Bronfenbrenner's (1979) ecological model of human development.

Beyond these microsystems, the organization of institutions and the broader sociocultural context are critically important for emotion and motivation (Pekrun, 2018). For example, educational systems that use tracking often group students according to ability, which can impact their emotional wellbeing (Pekrun et al., 2019). How should we change institutions and cultural contexts in ways that promote affective growth, and how should we inform policymakers? This is an underdeveloped area of research that deserves more attention (see also Deci et al., 2017), but also requires interdisciplinary collaboration of motivation and emotion researchers with sociologists, economists, and political scientists.

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Figure 1

Control-Value Theory: Basic Propositions