The Hilltop Review

Volume 7
Issue 1 *Winter*

Article 3

December 2014

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Cover Page Footnote

Thanks to Drs. Mary Z. Anderson and Lisa Baker for providing feedback on an early draft of this paper.

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First Place Paper, Winter 2014

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Since at least the time of the ancient Greeks, humans have wondered about the nature of emotions and the role they play in human life. Philosophers such as Socrates, Plato, Descartes, and Kant have considered the relationship between thinking and feeling in everyday human experience and have tried to better explain how emotional and rational processes influence behavior. Some thinkers have argued that emotion, or affect, clouds human thinking and is a liability to rational, logical thought, while others have suggested that affect is an essential and adaptive component to cognition which broadens and expands rational thought (Forgas, 2008). Modern technological advances have afforded researchers from disciplines such as medicine, psychology, and physiology investigative opportunities to observe the interplay of affect and cognition in ways the ancient Greeks may have never imagined. With increased technology and more sophisticated research designs, scholars have come closer to understanding the neural correlates of affect and the ways in which different affective states influence cognition.

While there exists a broad collection of research regarding affective states, researchers have tended to focus on so-called "negative" emotions (Forgas, 2008). Consequently, relatively little research is focused on positive affect in general and even fewer researchers investigate how positive emotions may influence the therapeutic change process. Positive emotions, however, are important for clinicians to consider because of their generative and catalytic influences upon the therapeutic change process. Thus, this paper is an attempt to summarize and integrate research from cognitive, neuro, and clinical psychology such that clinicians and will have a better understanding of the role of positive emotions in the therapeutic change process. First, a brief historical overview of the consideration of affect will be presented, followed by a summary of theoretical approaches to understanding the affect – cognition relationship. Next, a theory explaining positive affect's influence on cognition will be described and three experimental studies investigating affect, cognition, and the role of dopamine will be reviewed. Finally, practical applications of research regarding positive affective states will be discussed and suggestions for future lines of inquiry will be presented.

Theoretical Background

Historical Perspective

The emphasis and focus of psychology has changed throughout the years. During the 18th century, philosophers began to conceptualize the subject matter of psychology as concerned with three separate domains: cognition, affect, and conation (Forgas, 2008). As psychology slowly evolved, each of the domains was given attention depending on the interest of the scholar and the predominant Zeitgeist. During the formal founding of psychology in the late 19th century, researchers such as Wundt and Titchener viewed the three domains as

"inseparable, complementary aspects of human experience" (Forgas, 2008, p. 94). Although introspective experimental methods were part of the formal founding of psychology, some thinkers did not agree with the mentalist approach and instead argued that psychology should focus on observable, measurable behavior.

In the early to mid 20th century, behaviorism became the dominant force in US psychology as researchers sought to better understand behavior through precise measurements and tightly controlled experiments. Although the goal of early 20th century US behaviorism was prediction and control of behavior, there were other, more mentalist schools of thought emerging in Europe, notably Gestalt psychology. Psychologists of the mid to late 20th century began giving more attention to affective states and technological advances since the 1980's have allowed researchers to view the brains of people actively experiencing emotions. It could be argued that psychology has come full circle and again views cognition, affect, and conation as connected parts of human existence.

Modern Theoretical Approaches

There are several modern approaches to understanding the relationship between affect and cognition. Appraisal theories "seek to explain the cognitive genesis of emotions…and the functions they serve" (Forgas, 2008, p. 96). Classic examples of appraisal theories are the James-Lange and Cannon-Bard theories of emotional arousal. These types of theories search for physiological correlates of affective states and try to incorporate an individual's interpretation of bodily sensations when describing the subjective experience of an emotion. Another class of affect-cognition theories, known as infusion models, tries to understand how emotional states influence thinking. Some infusion theorists focus on the influence of emotional states on decision making and judgment processes, while others focus on how emotions influence information processing and the content which is stored in memory. Finally, integrative theories of affect-cognition explore how emotions influence both content *and* process of cognition (Forgas, 2008).

Conceptual theory of positive affect. Since about the 1980's, many researchers have documented the influence of mild positive emotional states on a wide range of human behavior and cognitive processes (Isen, 1999). Studies have shown that subtle positive feelings elicited by simple events such as seeing a few minutes of a comedy film, receiving a small gift, or unexpectedly finding a small amount of money are enough to produce significant changes in thinking and behavior. Positive affect has been associated with greater efficiency with both fundamental and complex cognitive processes. Researchers have shown that memory and learning are enhanced when subjects are in a positive state as compared to a neutral or negative affective state. Creativity, problem solving, and risk-assessment have also been shown to be influenced by positive affective states as compared to neutral or negative affective states (Isen, 1999). In addition to cognitive tasks, subjects experiencing positive affective states have been shown to have greater motivation to exercise and engage in more pro-social behavior such as altruism and donating time or money to charity as compared to subjects experiencing neutral or negative affective states (Isen, 1999).

Within conceptual research frameworks, scholars have theorized that positive affective states give individuals access to a wider array of mental faculties that result in more efficient problem solving strategies (Isen, 1999). This idea has come to be known as the *broaden-and-build* theory (Fredrickson, 2001). Proponents of this theory argue that healthy individuals most often exist in a neutral or mildly positive affective state and therefore most cognitive encoding occurs during emotional states which are not negative. They theorize that when individuals must access their cognitive store, such access is most efficiently facilitated during mildly positive emotional states. When one is feeling happy, for instance, one has full access

to all mental faculties and is able to make broad connections between cognitive material which may have been stored at different times via different methods (Isen, 2000).

Research into the consequences of positive affective states on human cognition and behavior is not without criticism. Some scholars question the reliability and validity of this type of research while others criticize the correlational nature of some of the evidence indicating positive affective states influence behavior and cognition. Still other critics question how emotions can be sufficiently operationalized and whether the study of human emotions is scientifically possible. In some ways, the debate is the same that has gone on since ancient times. (Ciarrochi, Forgas, & Mayer, 2006)

Scholars investigating the influence of positive affect on human behavior and cognition use a variety of methods to enhance the validity and reliability of their research. To ensure that a desired affective state was indeed induced, researchers may use manipulation checks or triangulation methods to verify a certain feeling was experienced (Isen, 1999). Manipulation checks are usually embedded within self-report measures and are generally less desirable than triangulation methods. Regarding triangulation, investigators vary the method of affect induction and employ different measures of capturing the consequence of the induced affective states (Fredrickson, 2001). Although every individual study is open to methodological criticism, when taken as a whole, multiple studies have had similar impacts on variables such as creative thinking or problem solving, such that "the most parsimonious interpretation for their impact on the dependent measure is in terms of the one quality or factor they share, induction of happy feelings" (Isen, 1999, p. 523). Furthermore, as brain imaging, pharmacological, and genetic technologies have increased, conceptual findings are being validated by physiological measures.

Neuropsychological theory of positive affect. Although neuroscientists have historically given little attention to the idea of positive affect, there are numerous studies of topics closely associated with positive affect – most notably investigation of the neurobiology of reward (Ashby, Isen, & Turken, 1999). Psychologists seeking to understand the effects of positive emotions on human cognition and behavior frequently induce positive feelings by giving a small, unexpected reward to research participants prior to engaging some sort of task. Within neuroscience, rewards have been linked with the neurotransmitter dopamine. Researchers have shown that rewards, and even mere anticipation of rewards, spur the release of dopamine from the brain (Robbins & Everitt, 1996). It has also been shown that dopamine antagonists inhibit reward signals and reduce the effectiveness of reinforcement. Thus, this neuropsychological theory of the effects of positive affect on cognition revolves around the central role of dopamine levels in the brain. More specifically, the theory gives importance to two brain dopamine systems: the *nigrostriatal system* in the substantia nigra pars compacta and the *mesocorticolimbic system* in the ventral tegmental area (VTA; Ashby et al., 1999).

There is substantial evidence that dopamine pathways in the VTA are active during the experience of positive affect in humans and that dopamine in the nigrostriatal system is related to motor activity (Ashby et al., 1999). It has been established that dopamine is released from the VTA after presentation of rewarding stimuli, and rewards are closely associated with positive emotions in humans. Researchers have also shown that drugs which mimic the effects of dopamine (e.g., morphine) or enhance dopaminergic activity (e.g., amphetamines) are associated with elevated affective states in humans. Furthermore, dopamine antagonists may result in flattened affect (Wise, 1982). Regarding the nigrostriatal system, dopamine release is associated with motor activity and damage to the system, such as that which typically occurs in Parkinson's disease, tends to decrease motor activity (Ashby et al., 1999). Although empirical investigations linking positive affect to increased motor activity are few, colloquial expressions such as "jumping for joy" seem to hint at such a relationship. As explained by Ashby et al., (1999) "the dopaminergic theory of positive affect argues that increased motor activity occurs with positive affect because the events

precipitating the elevation in mood lead to stimulation of the VTA, which in turn stimulates the substantia nigra" (p. 534).

In support of their theory, Ashby et al. (1999) point to several physiological processes whereby VTA dopamine influences both affect and cognition. First, the VTA's direct relationship with the brain's primary olfactory areas is identified by citing studies showing odors eliciting affective responses and increasing helping behaviors. Next, the well documented relationship between the VTA and the amygdala and the recall advantage for emotionally-laden material compared to neutral material is highlighted. Finally, Ashby et al. (1999) note the dopamine projection from the VTA into the anterior cingulate and cite its involvement with cognitive flexibility. Specifically, individuals who had genetic abnormalities of the anterior cingulate performed better on measures of creative problem solving after receiving injections of dopamine agonists (Ashby et al., 1999). These and other physiological processes provide evidence for the influence of dopamine on human affect and cognition.

Positive affect and therapeutic change. Recently, psychotherapists have proposed a theory of positive affect as generator of therapeutic change (Fitzpatrick & Stalikas, 2008). The theorists acknowledge that although positive emotions have long been conceptualized as *indicators* of therapeutic change, the view needs to be expanded to consider their *generative* role. Fitzpatrick and Stalikas (2008b) use Fredrickson's (2001) broaden-and-build theory as the framework for their idea of positive affect as change agent. According to Fredrickson and Branigan (2005), positive emotions have been shown to broaden one's scope of attention and facilitate cognitive flexibility. Within psychotherapy, the idea of *broadening* can be understood as a client's ability to contemplate new ideas, reinterpret personal situations, initiate new behaviors, or develop alternate solutions to problems. As clients broaden their thinking patters and explore new solutions, they will build lasting intellectual, physical, social, and psychological resources – thus demonstrating the *build* component of the theory (Fitzpatrick & Stalikas, 2008).

The theory of positive affect as generator of therapeutic change identifies broadening as a common factor of all successful psychotherapies. "Broadening – whether it refers to broadened schemata, broadened meanings, broadened repertoire of behavioral responses, broadened insight in relationships, or broadened experiencing – is an integral part of all intrapersonal psychotherapies" (Fitzpatrick & Stalikas, 2008, p. 143). The *common factors* approach to understanding psychotherapy seeks to identity core components of successful treatments in order to develop more efficient training and practice repertoires. Broadening can alter thoughts, feelings, and behaviors and thus unifies all treatment modalities and potential foci of psychotherapy.

Fitzpatrick and Stalikas (2008) argue that the idea of positive affect as change agents is combatable with all theoretical orientations to psychotherapy. Within behavioral traditions, clients are encouraged to broaden their response patterns to distressing situations and then build new behavioral repertoires based on the feedback received from experimenting with new behaviors. Psychodynamic perspectives cultivate client insight of early-life dynamics and facilitate a broad transference relationship with the clinician. Change begins when insight is realized and the client is able to build new understandings and relational patterns. Humanist psychotherapeutic traditions emphasize the role of the client-therapist relationship and recognize that relationship as a vehicle for deepening the client's experience of life. After broadening the client's experience within therapy, the client is supported as he goes out into the world and builds upon the successes experienced in therapy. Thus, regardless of the modern psychological tradition one follows (e.g., behavioral, psychodynamic, humanistic) psychotherapy within that tradition seems to center around broadening client experience and building upon new understandings.

Empirical Investigations

Broaden-and-Build Theory of Positive Affect

Fredrickson and Branigan (2005) conducted two experiments to test the central hypothesis of the broaden-and-build theory: whether positive emotions broaden the scope of attention, cognition, and action and widen the range of percepts, thoughts, and actions in the mind. To complete their investigation, 104 university students who were taking an introductory psychology course at a large Midwestern US university were recruited and received course credit in exchange for participation. Of the participants, 66% were women, 22% were members of an ethnic minority group, and all grew up in the United States. Participants used Emotion Report Forms to indicate the amount they experienced the following emotions: amusement, anger, anxiety, contentment, disgust, fear, happiness, sadness, and serenity. Ratings were made on a 9-point Likert scale where 0 corresponded to *none* and 8 corresponded to *a great deal*. Participants also viewed a short video clip intended to elicit an emotional response. The video clip was the independent variable and varied between five conditions: *penguins*, primarily eliciting feelings of amusement; *nature*, primarily eliciting feelings of contentment or serenity; *witness*, primarily eliciting feelings of anger or disgust; *cliffhanger*, primarily eliciting feelings of anxiety or fear; and *sticks*, an abstract video intended to evoke virtually no emotion.

Each student participated in two experimental trials where they were randomly assigned to watch a video clip and then complete a measure of the dependent variable. For trial 1, breadth of attention was assessed using an 8-item global versus local visual processing task in which participants were presented with a stimulus triad containing a standard figure and two comparison figures. Choosing the comparison figure which corresponded to the standard figure's whole geometric shape is understood as evidence of global processing, while selecting the comparison figure, which is made up of shapes used in the standard but different from the standard's overall geometric configuration, is understood as evidence of local processing (Fredrickson & Branigan, 2005). The total number of each type of processing strategy was recorded for each participant. For trial 2, participants were randomly assigned to watch a video other than the one they watched for trial 1. Breadth of momentary thought-action repertoires was assessed using an open-ended Twenty Statements Test. For this task, participants were asked to describe in a few words the strongest emotion they experienced while watching the video and then asked to:

> …take a moment to imagine being in a situation yourself in which this particular emotion would arise (the one you wrote on the previous page). Concentrate on all the emotion you would feel and live it as vividly and as deeply as possible. *Given this feeling*, please *list* all the things you would like to do *right now*. (Fredrickson & Branigan, 2005, p. 320)

The instructions were followed by 20 blank lines that began with, "I would like to_____." The total number of statements completed was recorded with more statements indicating a larger thought-action repertoire.

Using qualitative and quantitative methods of data analysis, Fredrickson and Branigan, (2005) found their hypothesis supported. Exploratory content analysis and triangulation methods were used to explore participants' written responses while ANOVAs and two-tailed t-tests were used to analyze numerical data. Regarding trial 1, participants who viewed the video *penguins* or *nature* engaged in more global processing compared to participants who viewed *sticks*, *witness*, or *cliffhanger* ($p = 0.042$). Regarding trial 2, participants who viewed the videos intended to induce positive emotions produced larger thought-action repertoires compared to participants who viewed the videos intended to elicit neutral or negative

emotions ($p = 0.003$). With these results, Fredrickson and Branigan concluded that individuals experiencing positive emotions exhibit broader scopes of attention and have more numerous thought-action urges than people experiencing neutral or negative emotions. Implications of this study will be discussed in the conclusion of this paper.

Dopaminergic Theory of Positive Affect

Evidence for the role of dopamine in the control of task-switching. Colzato, Waszak, Nieuwenhuis, Posthuma, and Hommel (2010) recently tested the hypothesis that more efficient use of dopamine is related to greater levels of cognitive flexibility. In this study, 100 university students from the Leiden and Rotterdam metropolitan areas of Amsterdam were recruited and received partial course credit or a small financial reward in return for their participation. Various exclusionary criteria were employed to ensure all of the participants were healthy with the final sample consisting of 53 females and 47 males. Participants' IQs were determined by means of the Raven Standard Progressive Matrices test and their genomic DNA was extracted from saliva samples. The dependent variable for this experiment was participants' scores on a computer aided task-switching procedure and the independent variable was participants' genotype for the enzyme catechol-O-methyltransferase.

Colzato et al. (2010) were interested in the correlation between participants' genotype of the enzyme catechol-O-methyltransferase (COMT) and cognitive flexibility. COMT has previously been shown to be responsible for the degradation of dopamine and a single nucleotide polymorphism has been shown to influence the activity of the enzyme at body temperature (Colzato et al., 2010). Specifically, the substitution of methionine for valine results in less efficient use of dopamine. Participants' DNA samples were amplified using standard PCR techniques and yielded a distribution congruent with Hardy-Weinberg equilibrium (i.e., 45.6% Val/Val, 43.4% Met/Val, and 11.0% Met/Met). For statistical analysis, the homozygous Met individuals were combined with the heterozygous individuals.

Participants' cognitive flexibility was assessed via a computer aided task-switching procedure. Each subject participated in two sets of the task where they completed 15 blocks each with 16 trials. Individual trials consisted of pairs of characters which rotated through each of the four standard 2-dimensional quadrants. Pairs of characters were made up of random combinations of one letter, number, or neutral character (e.g., G3, U%, 8A, $K) with the position of each character randomly assigned for each trial. When the pairs were in the top quadrants, participants were to give attention to the letter; when the pairs were in the bottom quadrants, participants were to give attention to the digit. The character pairs were presented for either 150 milliseconds or 1200 milliseconds with the time remaining constant during each set of the task. Participants responded to the task by using their left index finger to indicate *even* or *consonant* and with their right index finger to indicate *odd* or *vowel* (Colzato et al., 2010).

Repeated-measures ANOVAs were used to analyze the data and yielded partial support for the researchers' hypothesis. Specifically, there was a statistically significant difference between Val/Val individuals and Met/- individuals for the short presentation time ($p = 0.012$) but not for the long presentation time ($p = 0.432$). The researchers concluded that Val/Val individuals, who have been shown to use dopamine more efficiently, also exhibit greater cognitive flexibility when under time pressure (Colzato et al., 2010). Implications of this study will be discussed in the conclusion of this paper.

Cognitive flexibility depends on dopamine receptor signaling. van Holstein et al. (2011) recently tested the hypothesis that the dopamine receptor agonist bromocriptine would improve performance on set switching in individuals with low levels of baseline dopamine. For their study, 48 subjects (24 females) were selected to participate after being recruited via

university advertisements. The participants were all European Caucasians, spoke Dutch fluently, and were financially compensated for their participation. Participants' verbal IQ was assessed with the Dutch Adult Reading Test, and each participant completed the Beck Depression Inventory, Barratt Impulsiveness Scale, and the State-Trait Anxiety Inventory. In addition to the aforementioned measures, participants' genomic DNA was extracted from saliva samples. The dependent variable for this experiment was participants' scores on a computer aided pre-cued task-set switching task.

van Holstein et al. (2011) were interested in how strongly participants' genotype of the dopamine transporter (DAT) gene predicted baseline dopamine levels. Researchers have previously documented differences in baseline dopamine associated with a common polymorphism in a certain region of the DAT gene (van Holstein et al., 2011). Specifically, researchers identified a 10-repeat (10R) allele and a 9-repeat (9R) allele, with the 10R being associated with more efficient use of dopamine and lower levels of residual dopamine (van Holstein et al., 2011). Participants' DNA samples were amplified using standard PCR techniques and revealed 27 homozygous 10R individuals, 7 homozygous 9R individuals, and 14 heterozygous individuals. For statistical analysis, the homozygous 9R individuals were combined with the heterozygous individuals.

Participants' cognitive flexibility was assessed via a computer aided pre-cued task-set switching procedure. Each participant engaged in at least two sets of 160 trials with a 30 second break after every 32 trials. Each set took approximately 30 minutes and were separated by one week. Individual trials required participants to respond to incongruent arrow-word combinations either by responding to the direction indicated by the word (i.e., left or right) or by the direction of the arrow. The task can be compared to the more familiar Stroop Test. Before presentation of each trial, a cue appeared indicating to which stimulus, arrow or word, the participant was to respond. In addition to cuing whether to respond to the arrow or the word, reward anticipation was manipulated by presenting high and low reward cues. For the high reward condition, participants were informed they would receive 10 cents for a correct response and for the low reward condition participants were informed they would receive 1 cent for a correct response (van Holstein et al., 2011).

Supplementing the aforementioned experimental design was pharmacological manipulation. All participants were tested after taking an oral dose of the dopamine receptor agonist bromocriptine and again after taking a placebo. In addition, 14 participants received placebo or bromocriptine after pretreatment with placebo or the dopamine D2 receptor antagonist sulpiride on two testing trials. The order of administration of pharmaceuticals was randomized according to a double-blind protocol and participants engaged in the computer task approximately 4 hours after dosage to ensure optimal drug activity (van Holstein et al., 2011).

Repeated measures ANOVAs yielded strong support for the researchers' hypothesis. Specifically, bromocriptine significantly improved the performance of individuals genetically determined to have low levels of dopamine ($p = 0.028$) but did not improve performance in individuals with high levels of dopamine ($p > 0.1$). Furthermore, analysis revealed that pretreatment with sulpiride abolished the beneficial effects of bromocriptine relative to placebo ($p = 0.034$). The authors concluded that fast, flexible switching between task-relevant representations is associated with optimal functioning of dopamine D2 receptors (van Holstein et al., 2011). Implications of this study will be discussed in the conclusion of this paper.

Empirical Summary

The three studies presented provide evidence supporting the broad-and-build theory of positive affect and the dopaminergic theory of positive affect. Fredrickson and Branigan (2005) demonstrated that positive affect is associated with broader scope of attention and more numerous thought-action repertoires compared to individuals experiencing flat or negative affect. Colzato et al., (2010) and van Holstein et al., (2011) demonstrated dopamine's role in cognitive flexibility and showed that individuals who use dopamine more efficiently exhibit greater cognitive flexibility compared to individuals who use dopamine less efficiently. Taken together, these three studies provide strong support for the general theory that dopamine mediates the influence of positive affect on human cognitive abilities and that positive affect expands and enhances human cognitive abilities

Practical Applications and Implications

There are many practical applications and implications of this research for psychology and beyond. It has previously been shown that people experiencing and expressing positive emotions cope more effectively with chronic stress (Fredrickson & Branigan, 2005). Taken with the current study, we may understand that positive emotions facilitate a broad-minded coping style which may function by increasing one's ability to consider multiple angles or approaches to solve a problem. Teaching people in high-stress environments the skill of positive reappraisal, that is infusing ordinary events with positive meaning, may help them better cope with daily demands. Positive emotions may beget other positive emotions such that over time "people become better able to cope and experience appreciable increases in their well-being" (Fredrickson & Branigan, 2005, p. 328). For educators, being mindful of creating and maintaining a warm, positive classroom environment may enhance students' ability to creatively problem solve. Business leaders desiring innovation may also benefit from their employees regularly experiencing positive emotions in the workplace. Considering neurological implications, it is possible that inducing positive affect could temporarily reduce symptoms of pathological conditions associated with reductions in dopamine levels. The medical community may also want to take into consideration the cognitive costs associated with dopamine antagonists and prescribe other courses of treatment. Finally, medical researchers and pharmaceutical chemists may wish to give greater consideration to genetic variation in dopamine levels when designing and prescribing drug therapies.

Future Directions

There are many possible directions for researchers interested in examining the mediating role of dopamine in the relationship between positive affect and cognitive flexibility. First, researchers might consider exploring the consequences of behavior associated with positive affect. Evidence showing people experiencing positive feelings more frequently engage in acts of altruism compared to individuals experiencing negative or neutral feeling has been based on quasi-experimental designs (Isen, 1999), thus, more rigorous designs using random assignment would help validate such a claim. It is also accepted that variable reinforcement schedules produce the strongest evidence of learning (Ashby et al., 1999). Expanding this line of inquiry into the domain of inducing positive affect could help understand whether there is a difference in positive emotions when one receives an expected gift compared with receiving an unexpected gift. Regarding neuroscience, a more precise understanding of the role and chemical pathways of dopamine could help produce more effective and efficient pharmaceutical treatments. The connection between olfaction and affect could also be further explored. Understanding how dopamine affects the neurobiology of the olfactory system and how scents could induce positive affect may spark innovation into creative methods of

delivering pharmaceutical interventions via the nose. Finally, better understanding the cognitive processes that underlie the broaden-and-build theory (Fredrickson & Branigan, 2005) would add substance to the theory and make it more robust. Investigating whether positive affect also enhances visual acuity, working memory, or tactile dexterity could lead to specifically designed sensory interventions. Understanding how positive emotions influence cognition, and the role that dopamine plays in the process, is an important and broad line of research which could influence several disciplines and enhance the lives of many.

Conclusion

This paper has been a review of the intersection of affect and human cognition with a focus on dopamine as a mediator of the effects of positive affect. Two theories were summarized and three empirical studies were discussed. In addition, practical applications of the research and directions for future inquiry have been suggested. The present topic holds great significance for the general population in that it casts doubt on ideas of genetic endowment and emphasis on childhood experiences as determinants of behavior and ability. Rather, it highlights the dynamic nature of human existence and the idea that people respond to their surroundings and that small positive events can facilitate changes in cognition and behavior. After reviewing the evidence, one may consider whether the key to creative problem solving, pro-social behavior, and ultimate human flourishing lies in the experience and expression of positive emotions.

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