



Delft University of Technology

What are 'positive affect' and emotion?

Shiota, M.N.; Sauter, D.S.; Desmet, P.M.A.

DOI

[10.1016/j.cobeha.2021.03.007](https://doi.org/10.1016/j.cobeha.2021.03.007)

Publication date

2021

Document Version

Accepted author manuscript

Published in

Current Opinion in Behavioral Sciences

Citation (APA)

Shiota, M. N., Sauter, D. S., & Desmet, P. M. A. (2021). What are 'positive affect' and emotion? *Current Opinion in Behavioral Sciences*, 39, 142-146. <https://doi.org/10.1016/j.cobeha.2021.03.007>

Important note

To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Copyright

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy

Please contact us and provide details if you believe this document breaches copyrights.
We will remove access to the work immediately and investigate your claim.

What are “Positive” Affect and Emotion?

Michelle N. Shiota^a, Disa A. Sauter^b, Pieter M. A. Desmet^c

^a Department of Psychology, Arizona State University, P.O. Box 871104,
Tempe, AZ 85287-1104, USA Email: lani.shiota@asu.edu [corresponding author]

^b Department of Social Psychology, University of Amsterdam
Nieuwe Achtergracht 129B, 1001 NK Amsterdam, The Netherlands Email: d.a.sauter@uva.nl

^c Faculty of Industrial Design Engineering, Delft University of Technology
Landbergstraat 15, 2628 CE Delft, The Netherlands Email: P.M.A.Desmet@tudelft.nl

Abstract

Positive affect and emotion have become major topics in behavioral science, of growing importance in basic and applied research. A broad review of the literature reveals multiple, theoretically distinct constructs associated with the terms “positive affect” and “positive emotion,” sometimes conflated across this body of work. This article differentiates three primary constructs – subjectively pleasant affect; approach or appetitive motivation; and emotion states evoked by opportunities and rewards in the environment – and summarizes the major theoretical perspective with which each is intertwined. While these versions of positivity often coincide in lived emotional experience, we highlight examples of divergence, and discuss dynamic ways in which they influence each other. Distinct cognitive, physiological, and behavioral mechanisms by which each version of positivity may produce downstream effects are discussed, as is the importance of selecting and operationalizing the target construct with care in both basic affective science and translational research.

Highlights:

- Subjectively pleasant affect, approach motivation, and emotional response to opportunities and rewards are distinct constructs in the affective domain.
- Positivity is not an inherent quality of affective states, but a category imposed by theorists and researchers. Research indicates multiple valid and meaningful versions of “positivity” linked to distinct profiles of related psychological processes.
- In both basic and applied research, the intended construct must be chosen and operationalized with care.

Keywords: Positive Affect, Positive Emotion, Approach Motivation, Reward

What are “Positive” Affect and Emotion?

After many decades of relative neglect, positive affect and the positive emotions have evolved into topics of major theoretical and empirical interest in behavioral science [1-4]. A Google Scholar search using the key term “positive affect” yields 745,000 publications as of November 2020, and two handbooks devoted specifically to positive emotion have been published in the last decade [5, 6]. Beyond basic science, translational fields such as health psychology, educational psychology, clinical psychology, and design psychology have increasingly called for the use of positive affect and emotion in applied research and behavioral intervention [7-11]. The profound importance of positive affect in human experience is being recognized at last.

What are “positive” affect and emotion? This seems like a simple question, but a review of the literature reveals multiple distinct psychological constructs associated with these terms, reflecting different theoretical perspectives on affect and emotion more broadly. We do not advocate here for one version of positivity over the others. Rather, we review three main ways in which positivity has been conceptualized in the affective science literature: (1) the valence of subjective feelings; (2) the direction of motivation; and (3) the desirability or goal-conduciveness of an emotion-eliciting situation. To clearly denote these different constructs, we recommend a taxonomy that differentiates *positive affect*, *approach motivation*, and *positive emotion*. We discuss the risks of conflating the constructs to which these terms refer; we highlight the importance of carefully selecting a construct and theoretical framework before embarking on a new program of research; and we offer observations on the complex and dynamic nature of affective experience, with implications for future research on positive affect and emotion.

Alternative Positive Affect/Emotion Constructs

Three main constructs associated with “positive” affect or emotion can be identified across the affective science literature. While these versions of positivity often co-occur during affective experience, many specific states can be described as “positive” in one sense but not the others. Moreover, each construct is associated with a distinct theoretical perspective regarding the functions of positive affect/emotion, as well as a distinct body of empirical research.

Positive affect. This construct is defined as any subjective feeling experienced as pleasant. Positive affect is most closely associated with Russell’s Core Affect Theory [12], which emphasizes subjective feeling as the crucial feature of emotional experience, and describes feeling or “affect” space in terms of two orthogonal axes: valence (pleasant vs. unpleasant), and arousal (high vs. low). An alternative model of feeling space is rotated by 45 degrees, with positive and negative activation as the defining axes [13, 14]. In the latter model positive and negative affect can be experienced simultaneously [15], whereas in Core Affect Theory this is not possible. In both models, however, the emphasis on subjective feeling and the layout of more specific feelings (e.g., fear, contentment, excitement, sadness) in relation to each other are the same.

Defined in this way, felt positive affect is theorized to provide the individual with a heuristic cue that one’s current status is favorable, and all is well. Barrett has described subjective pleasantness as a signal that one’s internal “body budget” is in a good state – that physical and mental resources are sufficient to the tasks at hand [16]. Being in a good body-budget state affects how we function, and how we interact with the world. As an example, in one study participants in an experimentally induced pleasant-affect mood were found to perceive a subsequent memorization task as less difficult, and to show a milder cardiovascular response

during task performance, than those in a negative-affect mood [17]. Both the Affect as Information model and the Affect Infusion Model highlight ways in which the valence of current affect shapes how we process information and approach the current situation [18, 19]. The most recent formulation of Affect-as-Information theory proposes that positive affect serves as a meta-cognitive cue promoting continued use of one's currently dominant/accessible cognitive processing style, with negative affect instead prompting interruption and possible switch to an alternative processing style [20, 21]. This family of theories shares a proposal that the function of positive affect lies primarily in its signal value to the individual themselves, informing them that their physiological condition is good, their current information processing style is working well, and the environment contains objects and people worth pursuing.

Approach Motivation. The second construct – heightened approach motivation – emphasizes motivational and behavioral aspects of experience rather than subjective feeling. This construct, and the associated theoretical framework, build on neuroscience evidence differentiating brain activity associated with approach tendency and appetitive orientation versus avoidance and inhibition [22-25]. Approach motivation has been linked consistently to heightened activation in the left relative to right frontal cortex [23]. This profile of activity is observed at the trait level among individuals reporting high approach motivation, promotion (rather than prevention) orientation, and dispositional anger; and can be produced experimentally by exposing people to images of highly rewarding stimuli, and even by placing participants in a forward-leaning posture (see Gable & Dreisbach, this issue). Approach motivation characterizes some emotional states that feel subjectively unpleasant (e.g., anger), as well as many that feel pleasant [26]. Intensity of approach motivation varies across emotion states experienced as pleasant, and experimentally evoked high-approach pleasant states (e.g., excitement) show

cognitive effects such as narrowed attentional focus and category boundaries, relative to effects produced by low-approach positive emotions (e.g., amusement) [27]. These effects are consistent with the proposal that approach motivation serves to facilitate appetitive, goal-oriented engagement with the environment.

Positive Emotions. Positive emotions typically refers to complex, multi-component emotional responses evoked by perception of opportunities and rewards in the environment. This version of “positivity” emphasizes the emotion-eliciting situation, and our appraisal of the extent to which it presents opportunities to fulfill our goals, rather than subjective feeling or motivational direction. Cacioppo and colleagues’ Evaluative Space Model posits that we scan the environment continuously for positive/desirable and negative/undesirable elements, with detection of “positivity” and “negativity” each leading to a coherent set of physical and psychological effects [28]. Shiota and colleagues define positive emotions as complex, at least partly innate responses to certain kinds of prototypical resources and opportunities to enhance one’s adaptive fitness, such as high-quality food, desirable mates, young kin requiring one’s care, chances to increase one’s social status, and novel information [4]. This approach situates “positivity” at the convergence of features of the current environment and the individual’s needs and concerns, with positive emotion guiding an adaptive response to the opportunity at stake.

This version of positivity is most closely aligned with the basic or discrete emotion theoretical perspective, which defines emotions as brief, coherent suites of changes in physiology, cognition, motivation, and expressive and instrumental behavior, evoked by fitness-relevant challenges or opportunities, and serving distinct adaptive functions [4, 28-31]. According to these theories, “coherence” or co-occurrence among different aspects of emotional responding is generated by some neural system that, when activated by perception/appraisal of

an appropriate eliciting stimulus, potentiates the full suite of responses at once [32]. In these theories, therefore, the function of positive emotion is to facilitate complex, adaptive responses to opportunities to enhance evolutionary fitness. This is distinct from the perspectives above, each of which emphasizes a single aspect of emotional responding as primary, and locates positivity therein.

Will the Real Positivity Please Stand Up?

While it might be tempting to advocate for one of these constructs' primacy over the others, arguing the merits of this one and deficits of the others, we urge readers to resist this temptation. Each version of "positivity" above points to a psychological process that is experientially valid, theoretically distinct, and linked empirically to a different network of features across neural activation, cognition, and behavior. We propose that the term *positive affect* be used when referring to subjectively pleasant feelings; that *approach motivation* be used to denote motivational states including approach, appetitive, or incentive motivation; and that the term *positive emotion* be reserved for use in describing theorized coherent, multi-component responses to emotion-eliciting situations. This is largely consistent with current usage in the affective science community, but formalizing the terminology will help researchers clarify the concepts and assumptions underlying work beyond as well as within this core field.

These versions of positivity must not be conflated, because states can be positive in one sense and not in others. For example, robust evidence reveals that pleasant affect may be low in approach motivation (e.g., contentment [33]), whereas anger – a subjectively *unpleasant* state – is consistently linked to neural activity and cognitive biases indicating high approach motivation [23, 24]. While many fitness-relevant opportunities presented by the environment elicit heightened approach motivation, both the emotional phenomenology and peripheral physiology

evoked by novel, extraordinary panoramic views suggest *lowered* approach motivation, prioritizing stillness that allows rich intake of information [34, 35]. Consider the experience of genuine sadness at a loss experienced through a movie or television show – a negative emotion (i.e., evoked by loss rather than reward) that is often accompanied by pleasant feelings. One study in which participants viewed dozens of such scenes found that reports of sadness and enjoyment were strongly positively correlated [36]. Studying instances in which different aspects of positivity diverge may prove even more helpful in uncovering mechanisms of positive affect and emotion than studying where they converge.

Moreover, positive emotion-eliciting opportunities, positive affect, and approach motivation influence each other dynamically, in ways of which we may not be aware. One example is the “rose-colored glasses” effect: much research shows that experimentally-evoked pleasant affect leads to both heightened attention to objective rewards within the environment, and subjective appraisal of targets in the environment as more positive or valuable, thereby increasing the likelihood of positive emotion [18, 37]. Recognizing this complexity, some theories of emotion implicitly or explicitly address multiple aspects of positivity and their relation to each other. For example, the Evaluative Space Model holds that we look for positivity as a feature of the environment, and that positivity detection leads to approach motivation [38]. Fredrickson’s Broaden and Build model posits that subjectively pleasant emotions promote attentional and cognitive processes aimed at building “enduring personal resources” (p. 220), shaping our perception of and engagement with rewards in the environment [2]. Theoretical models that differentiate emotional responses to qualitatively different kinds of opportunities in the environment predict varying effects on approach motivation, depending on what should “do the job” in taking advantage of the situation [4]. For example, amusement does not involve high

approach motivation, but evidence suggests that it does promote broadened attention and facilitates a flexible, playful, creative approach to novel tasks and problem-solving [27, 39, 40].

Why the Construct Matters for Basic and Applied Research

Given these complexities, one might simply throw one's hands in the air and gloss over the distinctions among these constructs. At least for researchers, this is not a good plan. Each version of “positive” affect or emotion above suggests different experimental manipulations, and presumes different mechanisms by which affective/emotional state influences downstream cognition and behavior. It is therefore crucial, before beginning a new program of research, to consider these alternatives and decide which version of positivity is the best fit for the current project (or adopt a theory that clearly articulates links between versions of positivity), and ensure operational measures and predicted effects are consistent with that approach.

For example, animal neuroscience research has differentiated activity within the nucleus accumbens associated with subjective pleasantness (“liking”) versus approach motivation and incentive salience (“wanting”), finding that each is associated with a distinct set of eliciting stimuli and consequent behaviors [41]. Visceral physiological responses such as changes in heart rate, sweat gland activity, and vasoconstriction tend to track approach motivation rather than pleasantness, and may differ depending on the specific eliciting stimulus [42]. In contrast, electroencephalography markers of optimistic bias or reward expectancy in a gambling task appear to track pleasant affect rather than approach motivation [43]. Theoretical perspectives emphasizing positive affect, heightened approach motivation, and positive emotion-eliciting opportunities lead to different, sometimes competing predictions regarding the cognitive sequelae of a given “positive” affect/emotion state. For example, one might predict different cognitive implications of the emotion awe/wonder based on its pleasant valence, its low

approach motivation, or the opportunity to acquire novel information offered by the eliciting stimulus [2, 44-46]. In experimental research, selecting a “positive” affect or emotion construct goes hand-in-hand with specifying the mechanism by which one expects effects on outcome variables to occur.

This level of precision is important in basic science, as well as in applied work using positive affect/emotion for prediction or intervention purposes. For example, research linking dispositional positive emotionality to bipolar disorder suggests that high approach motivation, rather than pleasant feeling, is the best prospective predictor of mania symptoms [47]. In one study, the pleasant-affect manipulation employed to reduce alcohol craving backfired when experimenters unwittingly used high approach motivation-inducing photograph stimuli [48]. Although evidence shows that pride – a discrete positive emotion linked to opportunities to increase one’s social status and display one’s dominance or prestige [49] – typically increases motivation to acquire luxury consumer products, the specific status-seeking mechanisms of pride can also be leveraged to encourage “downgrading” to less-luxurious but environment-friendly products [50, 51]. In the workplace, researchers have found that ratings of pride, interest, and gratitude – all subjectively pleasant emotions linked to distinct environmental opportunities – differentially predicted outcomes such as sense of empowerment at work, creative performance, and helping behavior [52]. Careful selection of a “positive” affect or emotion construct allows tailoring of the intervention to the outcomes desired.

Concluding Thoughts

We hope to have convinced readers that positivity is not inherent in this or that affective state, but reflects a chosen way of categorizing and parsing affective/emotional space; that multiple ways of “slicing the pie” have validity and value; and that the choice of a construct

should be made mindfully and with care. Each of the three constructs and associated theoretical perspectives discussed above has generated a substantial and valuable body of research on ways in which affective processes shape the human experience. Integrating the knowledge produced across these bodies of work, and applying that knowledge to theoretical development and translational efforts, should be a central goal for future research.

Author Notes

This work was supported in part by a grant from the European Research Council [Starting Grant 714977] to the second author. Declarations of interest: none.

References

- [1] Dockray S, Steptoe A: **Positive affect and psychobiological processes.** *Neurosci Biobehav Rev* 2010, **35**:69-75.
- [2] Fredrickson BL: **The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions.** *American psychologist* 2001, **56**:218-226.
- [3] Fredrickson BL, Cohn MA: **Positive emotions.** In *Handbook of emotions*. Edited by Lewis M, Haviland-Jones J, Barrett L. Guilford; 2008:777-796.
- [4] Shiota MN, Campos B, Oveis C, Hertenstein MJ, Simon-Thomas E, Keltner D: **Beyond happiness: Building a science of discrete positive emotions.** *American Psychologist* 2017, **72**:617-643. Illustrating the response-to-opportunities version of affective positivity, this article analyzes several distinct positive emotions in terms of their eliciting situations and adaptive functions. Evidence regarding differentiation among these states is reviewed in the domains of cognitive processing, peripheral physiology, and nonverbal expression.
- [5] Gruber J: *The oxford handbook of positive emotion and psychopathology*. Oxford University Press; 2019
- [6] Tugade MM, Shiota MN, Kirby LD: *Handbook of positive emotions*. Guilford; 2014
- [7] Cameron LD, Chan CK: **Designing health communications: Harnessing the power of affect, imagery, and self-regulation.** *Soc Personal Psychol Compass* 2008, **2**:262-282.
- [8] Hayes SC, Villatte M, Levin M, Hildebrandt M: **Open, aware, and active: Contextual approaches as an emerging trend in the behavioral and cognitive therapies.** *Annu Rev Clin Psychol* 2011, **7**:141-168.
- [9] Peters G-JY, Ruiter RA, Kok G: **Threatening communication: A critical re-analysis and a revised meta-analytic test of fear appeal theory.** *Health Psychol Rev* 2013, **7**:S8-S31.
- [10] Pekrun R, Goetz T, Titz W, Perry RP: **Positive emotions in education.** In *Beyond coping: Meeting goals, visions, and challenges*. Edited by Frydenberg E. Oxford University Press; 2002:149-173.
- [11] Yoon J, Pohlmeier AE, Desmet PM, Kim C: **Designing for positive emotions: Issues and emerging research directions.** *The Design Journal* 2020, 1-21.
- [12] Russell JA: **Core affect and the psychological construction of emotion.** *Psychol Rev* 2003, **110**:145-172.
- [13] Kron A, Schul Y, Cohen A, Hassin RR: **Feelings don't come easy: Studies on the effortful nature of feelings.** *J Exp Psychol Gen* 2010, **139**:520-534.
- [14] Watson D, Tellegen A: **Toward a consensual structure of mood.** *Psychol Bull* 1985, **98**:219-235.

- [15] Larsen JT, Coles NA, Jordan DK: **Varieties of mixed emotional experience.** *Current opinion in behavioral sciences* 2017, **15**:72-76.
- [16] Barrett LF: *How emotions are made: The secret life of the brain.* Houghton Mifflin Harcourt; 2017. This book articulates core affect and psychological construction theories and related evidence for a popular audience, including a description of the “body budget” and its role in modulating cognition and behavior.
- [17] Gendolla GH, Krüsken J: **Mood state, task demand, and effort-related cardiovascular response.** *Cogn Emot* 2002, **16**:577-603.
- [18] Schwarz N, Clore GL: **Feelings and phenomenal experiences.** In *Social psychology: Handbook of basic principles.* Edited by Kruglanski AW, Higgins E. Guilford; 2007:385-407.
- [19]Forgas JP: **Mood and judgment: The affect infusion model (aim).** *Psychol Bull* 1995, **117**:39-66.
- [20] Clore GL, Schiller AJ, Shaked A: **Affect and cognition: Three principles.** *Current opinion in behavioral sciences* 2018, **19**:78-82. This article offers an up-to-date review of the ways in which affect – including positive affect – can shape attention and information processing for targets beyond the effect-eliciting stimulus
- [21] Huntsinger JR, Isbell LM, Clore GL: **The affective control of thought: Malleable, not fixed.** *Psychol Rev* 2014, **121**:600-618.
- [22] Gray JA: *The neuropsychology of anxiety: An enquiry into the functions of the septo-hippocampal system.* Oxford University Press; 1982
- [23] Harmon-Jones E, Gable PA: **On the role of asymmetric frontal cortical activity in approach and withdrawal motivation: An updated review of the evidence.** *Psychophysiology* 2018, **55**:1-23. This article provides a thorough overview of the research linking left- versus right-weighted frontal cortex activity, as measured via electroencephalography, with motivational direction and intensity. The extent of variability across subjectively pleasant emotional states in terms of approach motivation is addressed, as well as evidence that anger – a subjectively unpleasant emotion – is also characterized by high approach motivation.
- [24] Smith KS, Berridge KC, Aldridge JW: **Disentangling pleasure from incentive salience and learning signals in brain reward circuitry.** *Proceedings of the National Academy of Sciences* 2011, **108**:E255-E264.
- [25] Sutton SK, Davidson RJ: **Prefrontal brain asymmetry: A biological substrate of the behavioral approach and inhibition systems.** *Psychol Sci* 1997, **8**:204-210.
- [26] Harmon-Jones E, Peterson C, Gable PA, Harmon-Jones C: **Anger and approach-avoidance motivation.** In *Handbook of approach and avoidance motivation.* Edited by Elliot A. Psychology Press; 2008:399-413.

- [27] Gable PA, Harmon-Jones E: **Approach-motivated positive affect reduces breadth of attention.** *Psychol Sci* 2008, **19**:476-482.
- [28] Cacioppo JT, Gardner WL, Berntson GG: **Beyond bipolar conceptualizations and measures: The case of attitudes and evaluative space.** *Pers Soc Psychol Rev* 1997, **1**:3-25.
- [29] Cosmides L, Tooby J: **Evolutionary psychology and the emotions.** In *Handbook of emotions*. Edited by Lewis M, Haviland-Jones J. Guilford; 2000:91-115.
- [30] Keltner D, Gross JJ: **Functional accounts of emotions.** *Cogn Emot* 1999, **13**:467-480.
- [31] Levenson RW: **The intrapersonal functions of emotion.** *Cogn Emot* 1999, **13**:481-504.
- [32] Shiota MN: **Theories of basic and discrete emotions.** In *Routledge handbook of emotion theory*. Edited by Scarantino A. Routledge; 2021:
- [33] Cordaro DT, Brackett M, Glass L, Anderson CL: **Contentment: Perceived completeness across cultures and traditions.** *Rev Gen Psychol* 2016, **20**:221-235.
- [34] Shiota MN, Keltner D, Mossman A: **The nature of awe: Elicitors, appraisals, and effects on self-concept.** *Cognition and emotion* 2007, **21**:944-963.
- [35] Shiota MN, Neufeld SL, Yeung WH, Moser SE, Perea EF: **Feeling good: Autonomic nervous system responding in five positive emotions.** *Emotion* 2011, **11**:1368-1378.
- [36] Hanich J, Wagner V, Shah M, Jacobsen T, Menninghaus W: **Why we like to watch sad films. The pleasure of being moved in aesthetic experiences.** *Psychology of Aesthetics, Creativity, and the Arts* 2014, **8**:130.
- [37] Tamir M, Robinson MD: **The happy spotlight: Positive mood and selective attention to rewarding information.** *Personality and Social Psychology Bulletin* 2007, **33**:1124-1136.
- [38] Norris CJ, Gollan J, Berntson GG, Cacioppo JT: **The current status of research on the structure of evaluative space.** *Biol Psychol* 2010, **84**:422-436.
- [39] Isen AM, Daubman KA, Nowicki GP: **Positive affect facilitates creative problem solving.** *J Pers Soc Psychol* 1987, **52**:1122-1131.
- [40] Mainemelis C, Ronson S: **Ideas are born in fields of play: Towards a theory of play and creativity in organizational settings.** *Research in Organizational Behavior* 2006, **27**:81-131.
- [41] Berridge KC, Robinson TE: **Liking, wanting, and the incentive-sensitization theory of addiction.** *American Psychologist* 2016, **71**:670.
- [42] Kreibig SD: **Autonomic nervous system activity in emotion: A review.** *Biol Psychol* 2010, **84**:394-421.
- [43] Paul K, Pourtois G, Harmon-Jones E: **Modulatory effects of positive mood and approach motivation on reward processing: Two sides of the same coin?** *Cognitive, Affective, &*

Behavioral Neuroscience 2020, 1-14. This article presents a well-powered experiment in which pleasant affect and approach motivation were manipulated independently, and neural activity markers of reward expectancy and response to reward outcomes during a gambling task were the dependent variables. Results indicate that optimistic reward expectations track pleasant affect rather than approach motivation.

[44] Danvers AF, Shiota MN: **Going off script: Effects of awe on memory for script-typical and-irrelevant narrative detail.** *Emotion* 2017, **17**:938-952.

[45] Griskevicius V, Shiota MN, Neufeld SL: **Influence of different positive emotions on persuasion processing: A functional evolutionary approach.** *Emotion* 2010, **10**:190-206.

[46] Harmon-Jones E, Price TF, Gable PA, Peterson CK: **Approach motivation and its relationship to positive and negative emotions.** In *Handbook of positive emotions*. Edited by Tugade MM, Shiota MN, Kirby LD. Guilford; 2014:103-118.

[47] Gruber J, Johnson SL: **Positive emotional traits and ambitious goals among people at risk for mania: The need for specificity.** *Int J Cogn Ther* 2009, **2**:176-187.

[48] Mason BJ, Light JM, Escher T, Drobis DJ: **Effect of positive and negative affective stimuli and beverage cues on measures of craving in non treatment-seeking alcoholics.** *Psychopharmacology (Berl)* 2008, **200**:141-150.

[49] Tracy J: *Pride: The secret of success*. Houghton Mifflin Harcourt; 2016

[50] Griskevicius V, Shiota MN, Nowlis SM: **The many shades of rose-colored glasses: An evolutionary approach to the influence of different positive emotions.** *Journal of consumer research* 2010, **37**:238-250.

[51] Griskevicius V, Tybur JM, Van den Bergh B: **Going green to be seen: Status, reputation, and conspicuous conservation.** *J Pers Soc Psychol* 2010, **98**:392-404.

[52] Winslow CJ, Hu X, Kaplan SA, Li Y: **Accentuate the positive: Which discrete positive emotions predict which work outcomes?** *The Psychologist-Manager Journal* 2017, **20**:74-89. This cross-sectional study relating workplace performance outcomes to the experience of several distinct positive emotions found that interest uniquely predicted creative performance and satisfaction with one's work; pride uniquely predicted sense of psychological empowerment; and gratitude uniquely predicted satisfaction with coworkers and supervisors, as well as overall satisfaction with work.