A Case for Virtue:

Aristotle’s Psychology and Contemporary Accounts of Emotion Regulation

Abstract

This essay argues that recent evidence in neurobiology and psychology supports Aristotle’s foundational psychology and account of self-control and demonstrates that his account of virtue is still relevant for understanding human agency. There is deep correlation between the psychological foundation of virtue that Aristotle describes in *The Nicomachean Ethics* (NE)—namely his distinction between the rational and nonrational parts of the soul, the way that they interact, and their respective roles in self-controlled action—and dual-process models of moral judgment. Furthermore, Aristotle’s conception of character traits requires emotion regulation, and there is growing evidence in neurobiology and psychology of this ability. Most importantly, individuals can intentionally influence and control their “emotion-generating” system, and furthermore can generate *lasting* neurological and behavioral changes through deliberate practice. This essay briefly reviews Aristotle’s account of the ψυχή (psyche/soul) and moral virtue in the *Nicomachean Ethics*, and then reviews contemporary evidence of emotional self-regulation or self-control that correlates with Aristotle’s account of virtue, demonstrating the ongoing relevance of Aristotle for understanding human agency.

Key Words

Aristotle

Virtue Theory

Moral Psychology

Emotion Regulation

Introduction

This essay argues that recent evidence in neurobiology and psychology supports Aristotle’s foundational psychology and account of self-control and demonstrates that his account of virtue is still relevant for understanding human agency. There is deep correlation between the psychological foundation of virtue that Aristotle describes in *The Nicomachean Ethics* (NE)—namely his distinction between the rational and nonrational parts of the soul, the way that they interact, and their respective roles in self-controlled action—and dual-process models of moral judgment. Furthermore, Aristotle’s conception of character traits requires emotion regulation, and there is growing evidence in neurobiology and psychology of this ability. Most importantly, individuals can intentionally influence and control their “emotion-generating” system, and furthermore can generate *lasting* neurological and behavioral changes through deliberate practice. In other words, intentional practices can cause the dual neurological systems to become more and more intertwined and complementary during moral decision-making. I briefly review Aristotle’s account of the ψυχή (psyche/soul) and moral virtue in the *Nicomachean Ethics*, and then review contemporary evidence of emotional self-regulation or self-control that correlates with Aristotle’s account of virtue, demonstrating the ongoing relevance of Aristotle for understanding human agency.

The Soul and Virtue Cultivation

Aristotle divides the ψυχή into two parts: “One part of the soul is nonrational, while one has reason” (I.13.9).[[1]](#endnote-1) The word translated as “nonrational” is ἄλογος, which literally means “without reason.” Many translators use “irrational,” which is inappropriate given the context. Aristotle ascribes to the nonrational part of the soul “appetites and general desires” and states that it “shares in reason in a way” (I.13.18), while the rational part has “reason fully…within itself” (I.13.19).[[2]](#endnote-2) Thus the nonrational part generates mental states generally understood as automatic or passive. Moral virtue arises out of the proper interaction between these two parts. Moral virtue is “a state (ἕξις– Latin *habitus*, related to “hold” or “have”) [that] results from [the repetition of] similar activities” (II.1.7), and it produces actions that are in “accord with the correct reason” (II.1.1). Furthermore “virtues are concerned with actions and feelings” (πρᾶξις and πάθος) (II.3.3). Thus moral virtue is a rationally informed enduring trait that produces actions and regulates emotions.

A character trait (ἕξις) permeates the agent’s attitude and conduct and therefore regulates emotions and feelings. The English word “emotion” causes confusion since it has no direct cognate in Greek. The Greek πάθος—which is opposed to πρᾶξις or action—literally means suffering. Ostwald notes that πάθος refers to anything that befalls a person or that the person passively experiences.[[3]](#endnote-3) However, Aristotelian emotions are not always passive. Aristotle’s account of particular virtues makes this clear. Consider mildness, the virtue associated with the πάθος of anger. Aristotle, states that the person who possesses this trait will sometimes get angry or “irritated whenever reason prescribes…” (IV.5.3). Therefore anger is an emotion—and can be an emotion-virtue—shaped by the agent’s rational faculty, i.e. the agent’s perceptive and deliberative abilities. Emotions are not non-cognitive or purely automatic on Aristotle’s view: emotions are like perceptions and arise out of the interaction between rational and nonrational psychological elements. Emotions involve discrimination or discernment. Nancy Sherman stresses that emotions are “…a sensitivity, a mode of discriminating and registering particulars.”[[4]](#endnote-4) Because emotions are ways of construing situations that include beliefs about the situation, moral education can have a role in developing virtue because education can teach us how to discern the particulars of the situation and come to have the right perception of that situation. But as Sherman stresses, discerning the particulars and perceiving the situation rightly cannot happen apart from a critical judgment that informed the affective perception, i.e. the emotion (166-67).

Aristotelian emotions are *affective perceptions*. Consider the virtue of bravery. Aristotle states that “whoever stands firm against the right things and fears the right things, for the right end, in the right way, at the right time, and is correspondently confident, is the brave person; *for the brave person’s actions and feelings accord with what something is worth*, and follow what reason prescribes” (III.7.5, emp. mine). Aristotle contrasts bravery with spiritedness, as “those who act on spirit also seem to be brave—as beasts seem to be when they attack those who have wounded them—because brave people are also full of spirit…” But there is an essential difference: brave people “act because of the fine, and *their spirit cooperates with them*,” beasts impulsively respond to pain (III.8.10-11). If a person is attacked and injured by another person, and impulsively responds by attacking that person, she is not brave unless she discerns the particulars and perceives the situation rightly. Perhaps the attacker is a teenager, or clearly inebriated. If the victim is overwhelmed by fear at the attack and boldly defends herself, or if she responds to an unarmed attacker with shots from a handgun, she is clearly not rightly discerning the particulars of the situation and what the situation requires. Her emotion – fear – is unvirtuous, and we can rightly describe it as unvirtuous because that emotion colors and give rise to the mode of discernment, and virtuous action can only take place with proper discernment.[[5]](#endnote-5)

The Aristotelian claim that emotions are affective perceptions also means that like other perceptions, emotions have representational content. Emotions represent the world as being a certain way and that representation depends in part on the agent’s beliefs.[[6]](#endnote-6) Nussbaum states "in order to have emotions such as fear and grief (or anger), one must first have beliefs of a certain kind, beliefs that terrible things may befall beyond one's control" (85). The agent perceives the world in the way that she does in part because she holds certain beliefs. The affective perception of anger arises from the interaction of the agent’s beliefs and concerns and events taking place in the world. Put simply, Aristotle believes that moral virtue is a characteristic that produces both emotion and action, and in order for an agent to demonstrate that characteristic, she must *perceive* the situation as impinging upon something she cares about, and *believe* that her action is the morally right or καλὸς thing to do.

Contemporary Evidence

Aristotle believes that there are two major psychological powers: the nonrational one generates mostly automatic responses and the rational part generates rationality and deliberation. Furthermore, a person is virtuous only if her deliberate power shapes or directs her automatic responses. Some will argue that this is merely of historical interest unless there are good reasons to believe that this psychology is actually true. Happily, contemporary evidence in neurobiology and psychology demonstrates that Aristotle was largely right. According to a dual process model of the interactions between cognitions and emotions, moral judgments and behavior are the result of two, largely independent but interactive, information processing systems: a rational system and an experiential or affective system.[[7]](#endnote-7) But it is virtually impossible from a neurobiological standpoint to fully disentangle the role of cognition and affect in moral decision-making.[[8]](#endnote-8) When the systems cooperate, it is often because the agent is engaging in the practice of emotional self-regulation that is very similar to Aristotle’s notion of ἐγκρατής or moral strength, the crucial developmental stage that immediately precedes virtue.

It is commonly held in psychology that different—and sometimes competing—systems in the brain *can* and often do generate moral judgment; however, studies focusing on the relationship between the amygdala and the prefrontal cortex (PFC) reveal the role that reasons-responsiveness plays in a normally functioning brain and that an agent can intentionally override their immediate affective reactions when making judgments. One study presented subjects with pleasant and unpleasant odors varying in strength while an fMRI monitored their brain activity. The amygdala responded to any intense odor regardless of its pleasantness, while the different parts of the PFC responded to strong pleasant and unpleasant odors respectively.[[9]](#endnote-9) “The significance of this experiment is that it shows that the amygdala responds only to the strength of a signal, while the prefrontal cortex determines its nature.”[[10]](#endnote-10) Finer discrimination requires that the two systems work together.

Other studies reveal the role that cognitive linguistic skills play in perceptions of affect in others. Researchers presented subjects with two tasks, a match task and a label task.[[11]](#endnote-11) In the match task, they were instructed to match pictures of negative facial expressions with shapes. In the label task, they were instructed to name the emotion represented by the negative expression. The match task activated the amygdala and thalamus. The label task activated neither; rather “affect labeling is associated with dampened amygdala activity during an emotional evocative image” correlating with “unique prefrontal cortex activity.”[[12]](#endnote-12) The study demonstrates “that affect labeling disrupts the affective responses in the limbic system that would otherwise occur in the presence of negative emotional images” (426). When the subjects were asked to utilize linguistic reasoning skills to name the negative expression, the PFC was activated and the amygdala dampened. However, when linguistic rationality was not utilized, the amygdala and thalamus were active and the PFC was not. These and numerous other studies indicate that humans can engage in various cognitive and linguistic strategies to shift their perceptions of and reactions to external stimuli from automatic to deliberate.

A number of researchers argue that the cognitive or reasoning system (mainly PFC generated) can override the affective or intuition system (largely amygdala/limbic system driven) allowing for emotional self-regulation. James J. Gross has documented a variety of ways that humans regulate emotion, from suppressing an emerging emotional reaction, to cognitively reappraising a situation in advance to stop the emotional reaction from emerging.[[13]](#endnote-13) Emotion regulation is a basic form of self-control, and is a necessary pre-condition of both self-controlled and virtuous action. To demonstrate the suppression strategy, researchers performed fMRIs on men while watching erotic film clips. In the sexual arousal condition, subjects were told to react normally to these stimuli, not to suppress arousal. In the suppression condition, they were told to "suppress any feelings elicited by the erotic film excerpts" by becoming "a detached observer.”[[14]](#endnote-14) Once the emotion starts, the agent uses a cognitive strategy to view the situation from a different perspective and keep the emotion from generating “emotion-expressive behavior.”[[15]](#endnote-15) Clear differences emerged between the two conditions. The sexual arousal condition produced activity in the limbic system and amygdala, areas associated with automatic responses. The suppression condition activated cortical areas associated with decision-making and conscious goal-directed activity. The researchers concluded that this difference provides strong evidence for the view that "emotional self-regulation depends on a neural circuit in which the prefrontal cortical areas mediate the cognitive modulation of emotional responses generated at the subcortical level."[[16]](#endnote-16) In other words, self-control is possible and is correlated with brain activity.

Feinberg and colleagues combined a dual-process approach with the regulatory strategy of cognitive appraisal to see if agent’s use of cognitive reappraisal in one situation would lead them to make more deliberative judgments in subsequent situations. In the final of three experiments, they had subjects watch a sad film clip while cognitively reappraising to lessen its emotional impact (controls did not reappraise). Those same subjects then moved to a different room where they read and responded to moral dilemmas. The subjects who reappraised were more measured in their responses to the dilemma with less intense emotional reactions. The researchers concluded that agents who engage is reappraisal strategies tend to make more deliberative judgments in unrelated scenarios, which suggests that cognitive strategies such as reappraisal can have lasting efforts on the agent’s deliberative process and their emotional reactions.[[17]](#endnote-17)

**Section IV**

The preceding evidence has important parallels with Aristotle’s foundational psychology and his theory of self-control. Aristotle’s understanding of the relationship between the rational and non-rational parts of the soul has close affinities with dual-process theories. On Aristotle’s account, the agent will exhibit virtuous emotions when the two “systems” interact properly. Furthermore, the likeness of Aristotelian emotions with perceptions indicates that Aristotle would likely agree that cognitive methods such as reappraisal could result in different emotions. The interaction between the two neurological systems when discerning various smells helps illuminate Aristotle’s understanding of the role the interaction of the two parts of the soul plays in regulating emotions. The automatic identification of the strength of the smell originates in a part of the brain that generates automatic responses, but the discrimination between various kinds of smells and whether or not they signal danger stems from the part of the brain that deliberates, plans, and in general reasons. Finer discrimination requires the rational system take the lead, but both systems are necessary. More importantly, fine discrimination can be intentionally cultivated and refined over time. Consider the skill of wine tasting, which is really the skill of wine *smelling*. A person who has never tasted red wine before will probably not be able to smell much other than sour grape juice. The wine will have a bitter taste and not much else. Moreover, if the person simply continues to drink the wine by herself without any help from a more experienced and knowledgeable wine connoisseur, it will be more difficult to make fine or sophisticated distinctions. However, if a friend comes alongside our young wine taster and begins to teach her how to make and articulate finer distinctions, her newly acquired hobby may well blossom into a well-developed skill. Like emotion regulation, there is intertwined work of the amygdala and PFC in making the distinctions necessary for wine tasting. But more importantly, the rational part (PFC) is essential for making the finer distinctions necessary for both wine tasting and emotion regulation, and practice can refine both abilities.

Consider the following example from Sherman. She describes the role of the parent or moral teacher as someone who is an expert at discerning and affectively responding to moral situations, and helping the child develop that discernment: “The discrimination of ethical relevance will ground affective responses. By tutoring the child’s vision of the world, by instructing him to attend to these features rather than those, desires become focused and controlled in specific ways.”[[18]](#endnote-18) Just as a wine connoisseur tutors the novice in discerning various smells of the wine, the moral teacher aids the student in learning to discern the different aspects of a situation and form the right judgments. Essential to this education is providing the student with the moral language to make sense of various situations. Much like the subject who had to match shapes with facial expressions, the young child lacks a moral language to adequately describe and thus discern the morally laden situations she encounters. This lack of language partially accounts for the overly emotional responses of the child to morally rich situations. As the teacher provides the student with the language to describe and understand moral situations, her rational capacities will become more engaged in the process of moral discernment. This moral language acquisition is crucial for the development of self-control: emotions are educated in part by altering the beliefs and deliberative processes that partially constitute them. Just as finer distinctions of smell and more sophisticated linguistic descriptions of facial expressions exhibit stronger activity in the PFC that has a feedback-loop effect on the activity in the amygdala, the practice of deliberating about morally laden situations with rich descriptive terms will enable the student to begin to cultivate and shape emotions and develop control over those emotions.

As the student develops her deliberative mechanism, acquires a rich moral language, and practices moral actions, she will be engaging in an *extended regulatory strategy*. The PFC or rational part of the soul alters automatic responses of non-rational part/amygdala. As the student matures she will not be so easily angered at minor injuries; she will be more prone to feel compassion at another’s unjust injury; she will have courage in the face of danger. And as this happens, her brain activity will change. The activity in her prefrontal cortex will increase as the activity in the amygdala decreases. But this does not mean that she will not have emotions or feelings, or even that she will not have automatic responses. The automatic responses will *change*. These rational shaped responses become virtually automatic, and when they are both automatic and consistent, the agent possesses the virtue. Self-control is possible both neurologically and subjectively, giving us good reason to believe that virtue is far from dead and that there’s space for Aristotle at the contemporary philosophical and neuroscientific table.

1. All Aristotle quotes from: Aristotle, *Nicomachean Ethics*, trans. Terence Irwin (Indianapolis, Ind: Hackett Publishing Company, 1985). [↑](#endnote-ref-1)
2. For the sake of brevity I do not deal with the vegetative part, and equate nonrational with appetitive (*orekticon*). [↑](#endnote-ref-2)
3. Martin Ostwald, “Glossary” in *Nicomachean Ethics,* tran. with an int. by Martin Ostwald (Upper Saddle River, N.J.: Prentice Hall, 1999), 311. [↑](#endnote-ref-3)
4. Nancy Sherman, *The Fabric of Character: Aristotle's Theory of Virtue* (Oxford; Oxford University Press, 1989), 170. [↑](#endnote-ref-4)
5. *Ibid*. [↑](#endnote-ref-5)
6. Michael Brady, *Emotional Insight: The Epistemic Role of Emotional Experience* (Oxford: Oxford University Press, 2013), 48. [↑](#endnote-ref-6)
7. Veronika Denes-Raj and Seymour Epstein, “Conflict between Intuitive and Rational Processing: When People Behave against their Better Judgment.” *Journal of Personality and Social Psychology* 66, no. 5 (1994): 819. [↑](#endnote-ref-7)
8. Fiery Cushman, Liane Young, and Joshua D Greene, “Multi-system Moral Psychology,” in *The Moral Psychology Handbook*, ed. Fiery Cushman and John M. Doris (Oxford; New York: Oxford University Press, 2010), 68. [↑](#endnote-ref-8)
9. Adam Anderson et. al, “Dissociated Neural Representations of Intensity and Valence in Human Olfaction,” *Nature Neuroscience*6, no. 2, (2003): 196. [↑](#endnote-ref-9)
10. Rachel Lisa Berkowitz et. al., “The Human Dimension: How the Prefrontal Cortex Modulates the Subcortical Fear Response,” *Reviews in the Neurosciences* 3-4 (2007): 198. [↑](#endnote-ref-10)
11. Ahmad R. Hariri , Susan Y. Bookheimer, and John C. Mazziotta, "Modulating emotional responses: effects of a neocortical network on the limbic system". *Neuroreport*11, no. 1 (2000): 43-8 [↑](#endnote-ref-11)
12. Matthew D. Lieberman et. al., “Putting Feelings into Words: Affect Labeling Disrupts Amygdala Activity in Response to Affective Stimuli,” *Psychological Science* 18, no. 5 (2007): 425. [↑](#endnote-ref-12)
13. See for instance James J. Gross, "Emotion Regulation: Affective, Cognitive, and Social Consequences.” *Psychophysiology*39, no. 3 (2002), and John P. Oliver and James J. Gross, "Healthy and Unhealthy Emotion Regulation: Personality Processes, Individual Differences, and Life Span Development," *Journal of Personality*72, no. 6 (2004). [↑](#endnote-ref-13)
14. Mario Beauregard,. "Mind Does Really Matter: Evidence from Neuroimaging Studies of Emotional Self-Regulation, Psychotherapy, and Placebo Effect," *Progress in Neurobiology*81, no. 4 (2007): 220. [↑](#endnote-ref-14)
15. Oliver and Gross, "Healthy and Unhealthy Emotion Regulation," 1304. [↑](#endnote-ref-15)
16. Beauregard, “Mind Does Really Matter,” 220*.*  [↑](#endnote-ref-16)
17. Matthew Feinberg, "Liberating Reason from the Passions: Overriding Intuitionist Moral Judgments through Emotion Reappraisal," *Psychological Science*23, no. 7 (2012): 792. [↑](#endnote-ref-17)
18. Sherman, *The Fabric of Character*, 168.

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