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Confucius meets cognition: new answers to old questions

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Confucius meets cognition: new answers to old questions

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Early Chinese Confucian virtue ethics saw effortless harmony with the "Way" as essential for ethical life, but raised the problem of how one can, through effort, reach a state of effortless perfection. We decompose this paradox into three sub-paradoxes and review evidence from cognitive psychology relevant to each of them. First, how can one attain spontaneity by expending effort? Second, how can one come to love what one does not already love? Third, why is a deed considered not virtuous if consciously done for the sake of attaining virtue? We discuss how the cognitive sciences can contribute to potential solutions to an ancient ethical tension, and what the humanities can contribute to problems psychologists have only recently begun to explore.

Keywords: affect; early Chinese thought; effortless action; spontaneity; Confucius; cognition; processing fluency; ritual; virtue ethics

Introduction

The *Analects of Confucius* (551–479 BCE), consisting of 20 "books" that purport to record his teachings,[1] is the founding text of Confucianism and arguably the most influential book in Chinese religious thought. Confucius focused on how to become a good person, which for him also meant becoming a good servant of the state. Confucius believed that, in order to attain moral perfection, it was necessary for the aspiring "gentleman" to reach a state of wuwei or "effortless action," where proper actions would be performed unselfconsciously and without a sense of effort. In early Confucian thought, this sort of effortless virtuous action is portrayed as the result of extended training in traditional cultural forms, including rituals and music, and repeated oral and mental rehearsals of moral exemplary narratives and maxims. The *Analects* (Slingerland, 2003b), along with other major works of Chinese thought, became the basis of China's civil service examination, and they were therefore memorized by every educated Chinese person from 1313 until the last nationwide exam in 1910.

In this paper we intend to focus on a particular paradox that plagued early Confucian thought, and that also seems endemic to any system of moral education that values spontaneity: fundamentally, the problem of how one can try not to try. We will explain how this paradox can be decomposed into three separate sub-paradoxes, and we will then discuss evidence from contemporary cognitive psychology that is relevant to each of them.

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The paradox

One of the central problems of early Chinese virtue ethics is the paradox that the state of effortless action can only be attained through investing effort and undergoing difficulties during training (see Slingerland, 2000, 2003a, 2008a). In Confucian thought, for example, effortless virtuous action is the result of extended training in traditional cultural forms, including rituals, music, and repeated readings of moral maxims. The question then arises: how can one try not to try, or force oneself to love something one does not already love (Slingerland, 2003a, p. 13)?

What has been described as "the paradox of wuwei" in the *Analects* (Slingerland, 2003a, pp. 70ff.)[2] can – from a cognitive point of view – be decomposed into three different paradoxes: first, effortless action can only be attained through investing effort; second, learning the Confucian Way is only enjoyable if someone already loves it; third, the conscious intention to attain virtue actually undermines true virtue, which means that only good deeds done for their own sake count as virtuous.

From these three paradoxes, three questions arise that can be examined empirically. How does effort result in effortless action? How can one force oneself to love something that one does not already love? What are the cognitive differences between performing a good deed for the reward of virtue and performing a good deed for its own sake? We shall review evidence from studies in cognitive psychology that suggests at least partial solutions to the first two paradoxes, and that documents the apparent cognitive reality of the third.[3]

With effort to effortlessness

A large literature has shown that repeated training of a skill leads to automatization of routines (e.g., Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977). However, Baddeley and Longman (1978) observed a tension inherent to skill learning in examining the question of what kind of schedule is optimal to train postal workers on a newly introduced special typewriter. The two extreme schedules were one hour per day (a distributed training schedule), and two times two hours – that is, four hours – per day (a blocked training schedule). Two other groups received schedules in between. The result was clear-cut: those who were on the distributed schedule needed fewer training hours than those on the blocked schedule to reach proficiency. Despite this positive result, postal workers trained on the distributed schedule were least satisfied with their training and wished to be transferred to a blocked training schedule in the future. In contrast, the postal workers in the blocked condition were the most satisfied even though they performed worst. Simon and Bjork (2001, 2002) examined this tension further. They found that participants in their perceptual-motor learning studies made fewer errors during acquisition if they were trained on a blocked rather than a random schedule. This supports the subjective experience by the postal workers during training: those in the distributed training condition had the impression of making less progress than those in the blocked condition. However, when it came to retention the next day, participants in the random condition in Simon and Bjork's studies fared significantly better than those in the blocked condition, in line with Baddeley and Longman's finding that postal workers on the distributed schedule had the better learning outcomes in the long term. There is thus a discrepancy between subjects' phenomenological perceptions and objective

outcomes: ease of processing during the acquisition phase is related to poor outcomes in the retention phase, and vice versa.

In the acquisition phase, Simon and Bjork (2001, 2002) required from their participants a judgment of how well they learned certain patterns in the perceptual-motor task. They found that participants in the blocked schedule rated their future retention more favorably than participants in the random schedule, mirroring the advantage in the acquisition phase, but contradicting the actual outcome in the retention test. Apparently, people prefer the less effortful style of learning and do not realize that difficult-to-learn items often are better remembered than easy-to-learn items; rather, they have the incorrect intuition that they remember well what they learn with ease. For example, many education researchers and practitioners believe that reducing extraneous cognitive load and thus making learning easy is always beneficial for the learner (Sweller & Chandler, 1994). In fact, making learning more difficult by presenting contents in a difficult-to-read font results in superior learning (Diemand-Yauman, Oppenheimer, & Vaughan, 2011). In addition, it has been observed that ease of learning gives people the impression that they are competent (see Marteau, Wynne, Kaye, & Evans, 1990; R. Reber, Meier, Ruch-Monachon, & Tiberini, 2006).

We now can relate this tension in cognitive functioning to the Confucian paradox that effort is needed to attain effortlessness. First, Confucius felt that our natural, untutored spontaneous responses to the world, as determined by our innate "nature," are not optimal: if indulged, they lead to immorality and social chaos. A transformation of one's inborn nature is therefore required, whereby the individual will learn new or at least modified responses that deviate from the original dominant response. As learning non-dominant responses presumably is more difficult than just giving the dominant response, Confucius is right to assume that learning the Way is difficult.

Second, repeated practice has been shown to result in automatization of a skill. From a neuroscience perspective, automatization in learning goes along with a decrease in activation of brain areas that are implicated in effortful processing, such as the prefrontal cortex (e.g., Jansma, Ramsey, Slagter, & Kahn, 2001). The early Confucians often speak of the "internalization" of external cultural behavioral and cognitive forms, as embodied in traditional ritual, classics, and music. This metaphor of "internalization" captures in a loose form the outline of this process. Confucius realized that intensive, lifelong practice is needed in order to accomplish this internalization process – that is, to instill a dominant response that is not the natural one. Interestingly, learning outcomes are better with distributed practice, despite the fact that people prefer a blocked schedule. Confucius apparently had no knowledge or intuition about the distribution of practice.

Third, Confucius expressed frustration that people did not like to learn the Way.[4] The study by Baddeley and Longman (1978) showed that people indeed do not like the more difficult way, which in itself is not surprising. However, people not only dislike difficulties; they also feel that they do not learn much when the learning process is difficult. As discussed above, this naive intuition is wrong, but it may contribute to frustration early in learning so that people do not get a feeling for how easily they could retrieve what they have learned. There is reasonable doubt whether people understand the relationship between difficulty of learning and ease of retrieval: people have a great deal of experience with learning new skills, but they

apparently do not naturally develop the intuition that what is difficult to learn may be easy to remember.

In sum, research on skill learning reveals that people can attain some degree of effortlessness through practice, which roughly corresponds to the Confucian notion of cultivating spontaneity. In addition, cognitive psychology has discovered a contradiction between the learning experience and later memory performance: what is difficult to learn is easy to remember. However, learners apparently do not like to invest cognitive resources into learning, and they have the incorrect intuition that what is easy to learn can be remembered better. That learners do not like to learn what is difficult leads to the second component of the Confucian paradox.

Loving what one does not already love

Confucius believed that in order to be able to truly learn the Way, the learner must already possess at least an incipient love for it; when one possesses a genuine love for the Way, learning becomes effortless (Slingerland 2003b, pp. 60–63). How, though, to instill such a love in people who do not already possess it, which Confucius clearly felt included most of his contemporaries? This tension – structurally similar to the so-called "Meno problem" in Platonic thought of how one can learn a truth that one does not already know – drove a great deal of metaphysical theorizing in East Asian religion, and arguably was never satisfactorily solved (Slingerland, 2003a, p. 19). Responses historically have alternated between (1) internalist views that the good is already within the person, and that it merely needs to be elicited and brought to the outside by gentle instruction; (2) externalist views that love can be inculcated from the outside by intensive training; and (3) rationalist views that love, and emotion in general, are irrelevant to morality. The fact that none of these views ever became dominant, and regularly reappear throughout the various developments in East Asian religious thought, suggest that none is entirely adequate. Recent research in cognitive science on fluency and affect, however, may help to shed new light on the problem.

This research was conducted to find possible mechanisms underlying the mere exposure effect on affect (Zajonc, 1968), which refers to the fact that people like an object more after they have been exposed to it. Seamon, Brody, and Kauff (1983) proposed a two-step explanation of this effect: first, repeated exposure to an object increases perceptual fluency, which is the ease with which the object is processed. This increased fluency, in turn, increases positive affect.

However, all of these studies – even those that addressed the fluency–affect link – included manipulations of repetition (e.g., Whittlesea, 1993), so that it remained unclear whether fluency increases positive affect directly or only indirectly, mediated by familiarity. R. Reber, Winkielman, and Schwarz (1998) have shown that manipulations of fluency other than repetition – such as figure–ground contrast or presentation time – increase positive affect in a single-exposure paradigm, supporting the notion that fluent processing is affectively positive. Winkielman and Cacioppo (2001) replicated this study but also assessed the activity of the Zygomaticus major, the muscle that is activated when people smile and therefore is taken as an indicator of positive affect. Indeed, high perceptual fluency resulted in higher activation of the Zygomaticus major, supporting the notion that fluent processing is inherently positive. The repeated stimuli do not need to be identical: prototype formation results in faster processing of prototypical stimuli (Posner & Keele, 1968), and

artificial grammar learning (A.S. Reber, 1967) results in faster processing of grammatical stimuli (Buchner, 1994). Moreover, exposure to several exemplars of dot patterns from the same category resulted in more fluent visual processing of the prototype, as reflected by decreased activity in the posterior occipital cortex (P.J. Reber, Stark, & Squire, 1998). As predicted by the fluency account (R. Reber, Schwarz, & Winkielman, 2004), prototypical stimuli are experienced as more attractive than non-prototypical stimuli (Winkielman, Halberstadt, Fazendeiro, & Catty, 2006), and grammatical stimuli are liked more than non-grammatical stimuli (Gordon & Holyoak, 1983).

Another line of research found that repeated statements are more likely to be judged as true (Hasher, Goldstein, & Toppino, 1977). As with the mere exposure effect on affective judgments, some researchers have proposed that part of the repetition–truth link is mediated by processing fluency (e.g., Begg, Anas, & Farinacci, 1992). Analogous to the fluency–affect link, R. Reber and Schwarz (1999) examined the fluency–truth link by manipulating figure–ground contrast of statements. Indeed, statements that were more readable were more likely to be judged as true than statements that were moderately readable, bolstering the notion that fluent processing enhances judged truth.

Applying these findings provides a plausible solution to the paradox that one can love what one has not learned to love already: reading exemplary literature, repeating rituals, and practicing music results in fluent processing of contents or actions related to these activities. It follows from theory and from our findings that the liking of cultural forms increases with repeated practice. This kind of internalization that obviates rational elaboration is supposed to transform moralistic attitudes derived from mere duty to religious attitudes that emphasize the joy of doing what needs to be done, or, as William James put it, "*Religion thus makes easy and felicitous what in any case is necessary*" (James, 1985/1902, p. 51, italics in the original).

The first two paradoxes together show that people dislike contents that are difficult to learn, but that such contents can later be processed more easily and are therefore liked better than contents that were easy to learn but later more difficult to retrieve. In addition, as fluency not only enhances positive affect, but also judged truth, people feel that repeated contents related to readings or rituals are more likely to be true. This suggests that embedding doctrinal content into rituals, songs, and repeated stories may be a very effective cultural technology for entrenching those doctrines in the minds of adherents, which may in turn help to explain why such techniques are so commonly found in religions across the world and throughout the historical record.

Moreover, Confucius expressed the view that the common people can follow the Way, but not understand it (*Analects* 8.9). Aside from expressing an elitist view, this statement is interesting because it assumes the counterintuitive notion that people can learn a virtue without understanding it. One way to explain this phenomenon would have been instrumental conditioning by rewarding adequate ritual behavior and punishing inadequate behavior. Note, however, that this is not what Confucius had in mind: he was aware of the fact that reward and punishment would not instill trust (see Slingerland, 2003b; Cook, 2004). Consider, for instance, *Analects* 2.3, where Confucius reminds a member of the ruling class, "If you try to guide the common people with coercive regulations and keep them in line with punishments, the common people will become evasive and will have no sense of shame" – a notion very much opposed to Skinnerian behaviorism (Skinner, 1938). His method of

inculcating the Confucian Way in the minds of the common people accorded more with the observation that learning can remain implicit (see A.S. Reber, 1993), or that the elicitation of positive affect due to repetition does not require conscious recognition (Kunst-Wilson & Zajonc, 1980).

Inculcation of values and virtues does not happen in a social vacuum. An important source of inspiration is friends; in contrast to family, people can choose their friends. Confucius has a view of friendship very similar to that of Aristotle:[5] friends are drawn to each other by their common love of the Way and their common interest in virtue, and they support each other in becoming good (*Analects* 12.24). Mutual support includes not only sharing of knowledge, but also shared exposure to cultural forms. This shared exposure to the same cultural forms results in shared preference for these forms – or shared tastes (R. Reber, in press). Friends who share the cultural forms they are exposed to not only share affective preferences but also a sense of what is true, because processing fluency increases judged truth of beliefs (see R. Reber & Schwarz, 1999; R. Reber & Unkelbach, 2010).

Virtuous without wanting to be virtuous

The third of our paradoxes is related to what has been called the "paradox of virtue" (Nivison, 1996, pp. 31–43): a deed is only virtuous if done without the intention of obtaining virtuousness, or even any conscious awareness of being virtuous. This points to a crucial difference between virtue and non-moral skill acquisition, one long recognized in moral philosophy but only recently being explored in cognitive psychology. Aristotle (Irwin, 1999, p. 22), for instance, noted that "what is true of crafts is not true of virtues," because the value of virtuous actions is to be found in the actor's inner state, not in the external outcome. This suggests, Aristotle was forced to conclude, that "if we do what is just or temperate, we must already be just or temperate" – leading us back again to paradox #2 discussed above. The early Confucians had the same view as Aristotle, arguing that inward sincerity and unselfconsciousness were crucial for an action to count as genuinely virtuous, but they were similarly stymied by the lack of understanding of how to inculcate these qualities in one initially lacking them.

That this may constitute something of a genuine psychological paradox is reinforced by recent research suggesting that there may be differences in cognitive processing between intentional and non-intentional states of mind. Although we are not aware of research that addresses the question of intention and virtue directly, research on a related topic would appear to be relevant: it has been observed that the conscious pursuit of happiness – intentional activity aimed at achieving a state of happiness – may in fact be counterproductive (Schooler, Ariely, & Loewenstein, 2003). The authors discuss three reasons why this may be the case. To begin with, people may lack explicit access to their experiences, making a precise assessment of their happiness impossible. Second, gauging one's feelings may come at a hedonic cost: thinking about happiness potentially undermines the very feeling state one thinks about. Third, the pursuit of happiness may be self-defeating, in a manner analogous to striving to achieve the goal of not thinking about a problem (Wenzlaff & Wegner, 2000) or attempting to re-experience a mood (Wegner, Erber, & Zanakos, 1993).

That people do not have insights into their moral judgments has been shown by the work of Haidt (2001, 2007). Essentially, when people have to reason about moral dilemmas, such as breaking the incest taboo, they exhibit great difficulties

in giving coherent reasons in favor of their activated moral intuition. As in the affective domain, people are not very good at verbalizing their moral intuitions. Moreover, they may forego some of the positive affective consequences of virtuous deeds if they monitor this feeling state too closely. If actors want to achieve virtue and therefore monitor their actions as to their virtuousness, this may undermine real virtue because the outcome of reasoning processes in order to attain virtue may differ from the outcome of the intuitive processes that accompany acting virtuously for its own sake.

Jon Elster (1983) has described states such as happiness or virtue as by-products of behavior that cannot be consciously brought about. People can try to fake virtue by simulating virtuous behavior, but, according to Elster, even the act of faking can become self-defeating when an actor does not intend to be virtuous, instead becoming so as a result of his or her behavior. Elster does not, however, explore the psychological mechanism behind this phenomenon. In line with an analysis by Sosis (2003), it could be that the perception of one's own behavior influences one's attitudes (e.g., Bem, 1972). In line with our analysis of the paradox in Confucian thought, repeated simulation of a behavior presumably increases its fluent execution, and this increases both positive affect and experienced truth of the beliefs behind the simulated actions.

Of course, part of the concern with real virtue lies in the fact that people may fake ritual performance and virtuous behavior to attain the benefits of group membership – a central concern in early Confucianism. It has been postulated that, because of this worry, religious groups might employ hard-to-fake signals in order to deter free-riders (see Irons, 2001; Iannaccone, 1994; Sosis, 2003). Signals may be hard to fake because they impose high costs: Sosis (2003) has shown that costly commitments – such as lengthy rituals – impose more costs on skeptics who want to fake the commitment in order to reap later benefits than on believers for whom the commitment is genuine. Alternately, costly commitments may be hard to fake because they involve emotional reactions or autonomous nervous system reactions that are not under conscious control (Alcorta & Sosis, 2005; Frank, 1988; Schloss, 2008). Early Confucianism appeared to employ both strategies: the requirement of life-long commitment to an expansive set of cultural practices meant that a variety of techniques for detecting involuntary signs of deception – including close observation of the pupils of the eyes or facial expression, attention to subtle behavioral clues, and even analysis of an individual's musical performance – were thought to provide a direct window onto underlying emotional states (Slingerland, 2008a).

In sum, there are at least two ways in which a modern cognitive scientific understanding of the mind can enrich and perhaps sharpen our view of this particular ancient paradox. To begin with, the lack of conscious insight into the basis of one's moral judgments – analogous to the lack of insight into the basis of one's affective processes, as reviewed by Schooler et al. (2003) – may result in suboptimal moral decisions, in a manner analogous to the self-defeating nature of the pursuit of happiness. Moreover, the failure to embrace group norms spontaneously – that is, the failure to internalize them to the point that they become embedded in automatic processes – may impair one's ability to be accepted as a reliable cooperator by other group members. A potentially interesting next step in exploring this problem would be to move from the

consideration of problematics presented in classical Confucian texts to empirical studies of contemporary Confucian or Confucian-inspired ritual practice.

Conclusion

One important message from this brief consideration of early Chinese thought and cognitive science is that findings from contemporary cognitive science can shed light on an ancient religious problem, and that ideas that have emerged in world religious traditions may help contemporary researchers in formulating hypotheses that can guide future psychological research. In his introduction to a recent interdisciplinary volume dedicated to "effortless attention," Brian Bruya notes that the phenomenon of spontaneous or effortless action goes against the standard theoretical assumption in cognitive psychology that increasingly greater subjective effort must be expended as the demands of a given course of action increase. This, Bruya argues, may account for "its long neglect as a subject of serious investigation" (Bruya, 2010 p. 1). There have been some exceptions, of course (see, e.g., Csikszentmihalyi, 1975; Csikszent-mihalyi and Csikszentmihalyi 1988), and the last decades have seen a gradually increasing interest in tacit knowledge and implicit processes (see A.S. Reber, 1993) and consequently in dual systems approaches (see Evans & Frankish, 2009). For instance, recent research has revealed that automatic processes play a crucial role in moral judgment (Haidt, 2001), which has led empirically minded philosophers to the conclusion that moral justification cannot be based on reason only (Saunders, 2009; Slingerland, 2010). Traditions such as early Confucianism offer over 2500 years of sophisticated phenomenological data, as well as increasingly refined techniques for bringing about states of unselfconscious spontaneity and the internalization of social norms, which can and should serve as an important resource for contemporary psychological researchers and theorists of ethics. This is one respect in which genuinely trans-disciplinary collaboration can help to advance both the sciences and the humanities (see Slingerland, 2008b), with cognitive science offering insights to moral theory and traditional moral theory guiding cognitive science in helpful new directions.

Notes

1. Traditionally, the *Analects* has been viewed as a coherent and accurate record of the teachings of the Master, recorded during his lifetime or perhaps shortly after his death in approximately 480 BCE, but the current consensus among contemporary scholars is that our received version is a somewhat heterogeneous collection of material from different time periods, assembled by an editor or series of editors, probably considerably after the death of Confucius, but likely completed by the late fifth century or early fourth century BCE.
2. Slingerland's work was inspired by David Nivison's essays on the "paradox of virtue" in early Chinese thought (Nivison, 1996); since his 2000 article and 2003 monograph, several other scholars have independently noted the presence of this paradox in early Chinese religious thought (for two recent examples, see Graziani, 2009 and Yan, 2009).
3. There is a potential gap between laboratory research in cognitive psychology and real life. Does experimental research capture the mechanisms underlying the ritual practice recommended by Confucius? An analysis of experiments and field studies in domains such as aggression, helping, leadership style, social loafing, self-efficacy, depression, and memory revealed that laboratory experiments and field studies yielded corresponding results (Anderson, Lindsay, & Bushman, 1999). This observation means that experimental studies generally have good external validity. In addition, there is no *a priori* reason to

assume that the same correspondence between experiments and field studies would not exist when it comes to fluency and memory effects in ritual practice.
4.   See especially *Analects* 5.10, 7.8, 9.18, 9.24, and 15.16.
5.   For Confucius and Aristotle on friendship, see Sim (2007, ch. 7).

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