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Cognitive Bias Modification as a Remedy for Weakness of Will

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Biography

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Abstract

There are two dominant perspectives from which to explain *akrasia* (weakness of will). *Akrasia* is intentional action against one's own better judgment, and paradigms that account for *akrasia* differ mainly in the role that normative judgments play in practical reason. The cognitive perspective regards *akrasia* as a cognitive defect, while the more common Humean perspective regards *akrasia* as an affective defect. In this paper, I argue that the cognitive account of *akrasia* is in better harmony with a variety of empirical findings in psychology and psychiatry. Further, I appeal to research on addiction, addiction recovery, and emotional disorders that indicates that *akrasia* is better remedied by treating it as a cognitive rather than as an affective phenomenon. Taken together, this provides a strong reason to prefer the cognitive account of *akrasia* to the more standard Humean model.

Keywords

Moral psychology, *akrasia*, weakness of will, cognitive bias, heuristic, addiction, cognitive bias modification treatment, normative judgment, irrationality, synchronic irrationality

There are two dominant perspectives from which to explain *akrasia* (weakness of will).¹ *Akrasia* is intentional action against one's own better judgment, and paradigms that account for *akrasia* differ mainly in the role that normative judgments play in practical reason. On one perspective, a normative judgment is a belief, and it is the sort of belief that normally influences action. Most of the time, when I believe that A is better than B, I choose A, and choose A *because* I judge that it is better than B. When I do not, it is because something has gone wrong with my beliefs or the way that I am processing information. This account of *akrasia* treats *akrasia* as a cognitive problem, so I will refer to this account as 'cognitive *akrasia*.'

The opposing (and more common) approach to explaining *akrasia* is to treat it as a desiderative problem. People often act as they judge best because most of the time peoples' desires are appropriately lined up with their normative judgments, either

1. The Greek term 'akrasia' has historically been translated into English as 'incontinence' or 'weakness of will.' The first carries with it unwanted associations, while the second seems passé, as few contemporary analytic philosophers talk of 'the will' in a traditional way. It has become standard to simply anglicize the Greek term, so that *akrasia* is the phenomenon in which an *akrates* behaves *akratically* or in an *akratic* way.

because their judgments are appropriately influenced by or else appropriately influence their desires. Because of the role that desires play as the sole bearers of motivation, this account is often called a Humean² account.

The chief difference between cognitive *akrasia* and Humean *akrasia* is that the cognitive view holds that normative judgments, regarded as cognitive states, cause motivation, while the Humean position regards motivation as essentially non-cognitive. In the case of *akrasia*, the truth of the cognitive account would imply that once the cognitive defect responsible for *akrasia* is modified or eliminated, *akratic* behavior is reformed, while truth of the Humean position would imply that only modification of desires would reform the *akrates*.

Suitably interpreted, this is an empirical question. In this paper, I have assembled evidence and explanation that shows that modification of cognitive states as opposed to conative or affective states is more reliably indicative of behavioral change in the *akrates*. Much of this evidence is taken from studies of addiction and clinical approaches to reforming addicts, so I shall begin this account by describing the relationship between addiction and *akrasia*.

Akrasia and Addiction

Akrasia brings about blameworthy actions distinct from some other related cases of blameworthy action. I wish to be specific about the blameworthiness of *akrasia* in order to discuss what it is that a person is expected to do in order to avoid the disapprobation justly due the *akrates*. To this end, I would like to bring in a distinction between intemperance, *akrasia*, and compulsion as they are differentiated by blameworthiness.

Intemperance: An agent pursues a course of action, *c*, that is objectively incorrect (i.e., that by some reasonable account he ought not to do), while making no normative judgment opposing his doing *c*. Intemperance is a failure to be motivated to behave as one ought. The agent makes an objectively poor choice, and is generally blamed for choosing so.

Akrasia: An agent pursues a course of action, *c*, that by her own judgment is not the best course of action open to her. The agent chooses irrationally and is generally blamed

2. David Hume, in his "A Treatise of Human Nature" and elsewhere developed the notion that conation (desire), as opposed to cognition (belief) had a primary role in explaining motivation. There are many current philosophical views inspired by Hume's basic stance. Here I use 'Humean' to group such views, though there are disagreements between proponents of these views. Further, there are contemporary Humean views that Hume himself may not have endorsed.

for choosing irrationally, but may be given some credit for knowing better and regretting *c*, unlike the unrepentant intemperate.

Compulsion: An agent cannot help but pursue *c*, whether judging that *c* is the superior or inferior option. The agent cannot alter his own compulsive behavior, and this is why it is called compulsion. The agent doesn't choose and is not generally blameworthy (except insofar as he allows the conditions for compulsion to obtain, and/or does/did not seek help in redressing his compulsive behavior).

This distinction is important chiefly because our approbative responses to each of these phenomena are different. In the case of the intemperate, we blame the lack of motivation to do what one ought. The way we go about reforming the intemperate is by convincing them of what they ought to do or not do, and if that fails, we generally try to motivate the intemperate through reward or punishment to assist them in ceasing to behave recklessly. The *akrates* is culpable for behaving as they themselves would condemn, but the fact that they themselves condemn it often gives partial credit. Instead of having to convince the *akrates* of the best way to act, we need only assist the *akrates* in attending to her better judgment. The compulsive is a case in which persuasion or another ordinary sort of motivational change is not effective. Generally, we regard compulsive behaviors as psychiatric pathologies of one kind or another, and attempt clinical interventions if the compulsion interferes with the subject's ability to live a reasonably satisfying life.

The cognitive account of *akrasia* distinguishes the three cases above on the status of their normative judgments vis a vis their actions. The intemperate simply has no normative judgment contrary to their action (but could have such a judgment and ought to). The *akrates* acts contrary to normative judgment (but could have and ought to have avoided such action). Compulsives cannot do other than they in fact do, whatever they judge, and so given the reasonable and common view that 'ought' implies 'can,' they are not blamed.

The Humean account explains *akrasia* in terms of the permanent irrelevance of normative judgments (understood as cognitive states) to motivation. Action against normative judgment occurs when someone judges that *x* is better than *y* but desires *y* more than *x*, and so does *y*. Under this view, the strongest desires supply motivational force, so people do whatever they most desire to do. Many have found this explanation of *akrasia* plausible (Mele; 1987; Stocker 1979). If this is the best explanation for *akrasia*, then reforming the *akrates* consists in some form of desire modification.

If the Humean explanation is really the best account of *akrasia*, then the approach that it suggests toward reforming the *akrates* should be the one that demonstrates the best success. If, on the other hand, a primarily cognitive approach is most effective,

it is reasonable to conclude that *akrasia* is a primarily cognitive problem. In other circumstances, this kind of reasoning bears fruit. If a mechanic replaces part A, and the problem is subtly affected, while replacing part B largely or completely fixes the problem, then the mechanic can reasonably conclude that part B is the largest part of the problem. What I intend to demonstrate in what follows is that success or failure in reforming frequent *akrasia* is actuated more by cognitive factors than desiderative factors.

There has been, to my knowledge (and I have searched extensively) no study of reforming anything called '*akrasia*,' so I am faced with the task of finding something that has been studied that matches the criteria for *akrasia*, even though the terminology under which it is studied in psychology, psychiatry, and physiology is not the same as philosophical terminology.

Akrasia per se has not been the subject of empirical study, but one sort of frequent *akratic* behavior that has received a great deal of empirical study is addiction. Instances of addiction as examples of *akrasia* are nothing new in philosophy, but even so, I shall go to some length drawing parallels between the cognitive account of *akrasia* and the cases of addicts continuing to engage in the addictive behaviors despite judging that they ought not.

The first step in this process is to recast the distinction between the intemperate, the *akratic*, and the compulsive (above) as a distinction between different sorts of addict. To this end, I appeal to a set of cases supplied by Gary Watson that instantiate the above definitions of intemperance, *akrasia*, and compulsion (1977, 324):³

1. The reckless or self-indulgent (intemperate) case: the woman who knows that having another drink will likely result in her becoming drunk and unable to fulfill other obligations, but who prefers the drink and accepts the consequences. She acts in accordance with her best judgment.
2. The weak (*akratic*) case: the woman who judges that it would be better not to drink, who could have refrained, but did not. She acts contrary to her judgment.
3. The compulsive case: the woman who judges that it would be better not to drink but who was unable to refrain. She also acts contrary to her judgment.

It squares with common experience that addicts are often, at various times, one of the three above. Of course, for my purposes, I shall focus attention on the addict who judges that they ought not behave as they do, and who is capable of avoiding that behavior.

3. I do not know if Watson, if pushed, would accept Humean normative judgment externalism, but his account in this piece does seem to take seriously the main theoretical commitments of the Humean perspective. See (Smith 2003) for commentary on Watson's distinction.

The example Watson brings in has to do with choosing to drink another drink of alcohol. This is appropriate, as many instances of failing to do as we judge that we ought are often bound up in (at the mild end of the spectrum) bad habits or (at the more severe end) very serious addictions. Failures to change our habits, like when starting a new diet, are frequently cited as candidates for *akrasia*. In the context of discussing addiction, I shall provide an account of cognitive bias modification along with evidence of its effectiveness in assisting persons in breaking addictions. Again, this is an important part of the account because it demonstrates that the sort of weakness involved in *akrasia* is a cognitive weakness because it is most effectively remediated by addressing its cognitive aspects. In identifying the correctable weakness implicated in at least these cases of *akrasia*, I shall be identifying the weakness that the *akrates* is culpable for failing to correct.

Before I begin with the main discussion, I would like to point out an issue that may arise that might make the following account more likely to be misunderstood. I have made extensive use of empirical data from psychology in developing a cognitive account of *akrasia*, and I shall make use of literature primarily from psychiatry in detailing cognitive bias modification as it pertains to reforming *akratic* behavior. I do not thereby mean to give the impression that I regard *akrasia* to be a pathology requiring clinical intervention. I hold what I believe is a common view of pathologies requiring clinical intervention. That is, I view such pathologies more like examples of compulsion rather than *akrasia* or (at least ordinary) intemperance.

In fact, in denying the existence of *akrasia*, some have characterized reported cases of *akrasia* as instead being cases in which the dictates of a person's best judgment are psychologically impossible for her to follow (Hare 1963).⁴ In any of these cases (some of which surely must exist) the action that takes place against better judgment is not intentional, and thus is not *akrasia*. It is instead a version of psychological compulsion. In adapting psychological literature to empirically inform the philosophical concept of *akrasia*, it would be tempting to identify *akrasia* with an existing mental disorder.⁵ I encourage the reader to resist such temptation, and regard clinical pathologies as more akin to instances of compulsion (in the sense that compulsion operates in Watson's example) than to *akrasia*. Even if psychologists and psychiatrists do not generally regard pathological behavior to be unfree, the more common view of praiseworthy or blameworthy action involves action that is suitably under the control of the individual

4. See especially Hare's Ch. 5. See also (Hardcastle 2003) for a critique of an attempt to reduce psychological explanation of *akrasia* to neuroscience.

5. This is largely what (Kalis, et al. 2008) attempt.

in question.⁶ I shall avoid entry into any debates concerning metaphysical free will. The common view may or not be ultimately mistaken about pathological behavior, but at the very least I shall be able to provide an account of cognitive bias modification that addresses *akrasia* but that is not a strategy that requires or is restricted to clinical intervention.

An addiction is a pattern that persists over time, while *akrasia* is episodic. Of course some are *akratic* more often than others, and addictive behaviors will be correlated with more frequent occurrences of *akrasia*. However, not all addictions are created equal. There appear to be many different sorts of addictions, some involving chemical dependence, and the strongest of these may appear better examples of compulsion than *akrasia*. Also, some addictions, like my own utter dependence on my morning coffee, are, if anything, examples of intemperance rather than of *akrasia* as most people do not care to break their mild to moderate caffeine addictions.

I shall like to leave aside both these most severe cases of addiction and the mild addictions that people generally don't regard as particularly bad or worthy of effort in breaking. I contend that there are sufficiently many examples of addicts who are capable of controlling and/or breaking their addictions, judge that it would be best to do so, and still sometimes fail to perform the individual actions that eventually lead to the breaking of a bad habit. These phenomena are rather well studied.⁷

Common experience tells us that at least some addictions that addicts wish to break involve instances of action against better judgment. It is part of our common knowledge of alcoholism, for instance, that most admitted alcoholics do not think it best that they continue to be alcoholics.⁸ As a necessary step in demonstrating that cognitive bias modification is an effective remedy for *akrasia*, I must demonstrate the role that cognitive bias plays in those addictions that include examples of *akrasia*.

Cognitive Bias in Addiction

Two kinds of cognitive defects are at play in both substance addictions and behavioral addictions that do not involve substances. One of these defects is a cognitive bias that

6. Aristotle, NE book III, agrees.

7. See (Campbell 2003), which is one of a very few articles that specifically identifies addiction with "akrasia or weakness of will."

8. For voluminous examples of this see: (Alcoholics Anonymous 2001), or any other collection of testimonies of alcoholics or recovering alcoholics.

minimizes recall of the negative effects of the addictive behavior. Let us refer to this as recall bias.

Typically, rewards for behaviors tend to reinforce those behaviors, while negative consequences for behaviors tend to discourage repetition of those behaviors. Long experience with conditioning, incentives, and disincentives tells us that such a connection is as regular and reliable as any psychological law. Objectively, addictive behaviors are often harmful. A failure of the addict to reform his or her own behavior, or even to recognize the problem, is a cognitive failure—a form of subjective irrationality as well as a failure of objective rationality.⁹

Akrasia is a failure of synchronic rationality, and not a failure of diachronic rationality.¹⁰ If addicts believed that their addictions were not harmful or if they misestimated the consequences of their addictive behaviors in a way that additional information or a different way of considering things would fix, then the addict would demonstrate a failure of diachronic rationality. Surely this is what happens some of the time, but it does not capture the full range of mental processes often associated with the persistence of addictive behaviors. Those who seek to give up their addictions often do so on the basis of the past negative consequences of addictive behaviors. It is the failure of their own past negative experiences to sufficiently motivate addicts that is, in a way, paradoxical. Being able but not disposed to remember negative consequences of addictive behaviors fits well with Aristotle's talk of having but not attending to knowledge,¹¹ as well as the more empirically respectable talk of information that is or is not present in the global workspace (Baars 2003).

The phenomenon of recall bias makes a charge of subjective synchronic irrationality (*akrasia*) intelligible and empirically verifiable. It is not that the addict believes things about their addiction that are false, or that they must revise. Instead, the past negative consequences of the addictive behavior are often not recalled at all.

9. For more on the distinction between subjective and objective rationality see (Wedgwood 2003).

10. Synchronic irrationality is marked by consistency of judgments and intentions as recognized by the subject. Diachronic irrationality is a failure in the rules and procedures for forming judgments. For more on this distinction, see (Wedgwood 2007).

11. Aristotle is the first thinker in Western Philosophy to take seriously the notion that people may sometimes in fact pursue what they themselves acknowledge as a lesser good. Aristotle's account of *akrasia* is notoriously difficult, but tends to focus on how someone might have knowledge of the good and yet fail to attend to it. See Book VII of his *Nicomachean Ethics*.

William Campbell, a fellow of the American Society of Addiction Medicine, is one of a few who explicitly link *akrasia* in the case of addiction to a specifically cognitive impairment (recall bias). Campbell describes the causal relevance of cognition in addictive behavior as follows (the italics are my own):

Addicts appear to be acting at various times on 2 different belief systems. The first belief is that the addictive behavior is harmful and produces negative consequences...The addict appears to act on the basis of faulty reasoning, and the actions are such that *cognition does not appear to consider* the previous negative consequences of the addiction. (671)

This is a clear description of *akrasia* and its classification as a failure of subjective synchronic rationality. At this point it is tempting to ask what feature of addiction causes this lack of recall. This is a subtle confusion. It is like asking what feature of forests is responsible for causing trees to clump closely together. Campbell is arguing for cognitive bias as a causally necessary aspect of the etiology of addiction. It is not just clinicians who appear to hold this view. Campbell cites some literature from Alcoholics Anonymous, an organization with a wealth of practical experience that should not be discounted. In particular, Campbell singles out the statement that "...we shall describe some of the mental states that precede a relapse into drinking, for obviously this is the crux of the problem" (671).

Recall bias is not the only kind of cognitive or attentional bias implicated in addictive behavior. Another sort of cognitive/attentional bias implicated in addiction occurs in the increased attention to addiction-related stimuli in the addict. We may refer to this as focus bias. Focus bias and recall bias serve together to make the addict more aware of the presence of temptation and less cognizant of its previous bad consequences. All human beings make implicit use of heuristics (short-cuts that make decisions on less than the total amount of available information) when making decisions (Cosmides and Tooby 1994; Gigerenzer and Goldstein 1996; Gigerenzer and Todd 1999). These heuristics are generally useful to us, but in some contexts can be misapplied and supply the wrong decision. The heuristic gets labeled a 'bias' when it gets misused. Consider the ordinarily useful traits of selective attention and memory. Having our attention drawn to the fastest moving object in our surroundings can have survival value. Often, fast-moving things are dangerous (charging predators) or else are opportunities for food (fleeing prey). Calorically dense food items present themselves readily to the attention because there has historically been value in knowing where the calories in our environment are. Generally, the ability to

see what we want more readily than what we don't want is very useful. In the context of addiction, such tendencies are positively and powerfully counterproductive. It makes sense on these lights to regard addiction as a misapplication of the ordinarily useful cognitive tools that are selective attention and memory.

Medical and psychological researchers, in studying addicts and their characteristic behaviors, have noticed a number of ways in which addicts of various kinds share cognitive traits. These traits have become an integral part of understanding the cognitive aspects of addiction. Focus bias, as it is studied, consists in the following: a tendency of addicts to respond to certain cognitive cues more quickly than non-addicts, a reduced tendency of addicts to disengage attention from addiction-related cues and onto non addiction-related cues, and a reduced tendency compared with non-addicts to distinguish target cues from distracters (Mazas, Finn and Steinmetz 2000).

It is significant to recognize that these same sorts of cognitive biases contribute to a startlingly wide range of addictive behaviors, which includes both addictive behaviors that do and addictive behaviors that do not involve any psychoactive or mood-altering substances.¹²

A wealth of evidence suggests that increased attentional bias toward addiction-related stimuli predicts relapse of addiction among a startling diversity of addictions. As one example of attentional bias in addicts, a study by Liu et al. made use of what is known as a Stroop task to demonstrate focus bias in cocaine addicts (Liu, et al. 2011). In a Stroop task, cocaine addicts and controls are contrasted in their abilities to identify the color of a word while ignoring the word's meaning. The word is presented, and subjects (both cocaine addicts and controls) are asked to press color-coded buttons corresponding to one of the potential colors of the presented words as quickly as they can accurately do so. Some of the words are cocaine-related (e.g., 'cocaine,' 'dealer,' or 'freebase') while an equal number of words are neutral with regard to cocaine and length-matched with the cocaine-related words (e.g., 'cabinet,' 'window,' and 'armchair'). A significant difference in cocaine addicts' reaction times to neutral versus cocaine-related words is evidence of attentional bias to cocaine-related stimuli. Controls show no significant difference in reaction time to cocaine-related versus neutral stimuli. The Liu et al. study confirmed the results of other studies (Hester, Dixon and Garavan 2006; Vadhan, et al. 2007) that find an increase in what is above termed 'focus bias' among cocaine addicts.

12. Though Seamus Decker and Jessica Gay claim that research into the role of cognitive bias in addiction is scarcer for "evidence about behaviors that do not involve drug use or other physiological factors." See their (Cognitive-bias toward gaming-related words and disinhibition in World of Warcraft gamers 2011).

Further, Liu et al. write “[I]mproving impulse control and remediating attentional bias may prove to be helpful tools in the treatment of cocaine dependence” (2011, 121). It stands to reason that if the remediation of cognitive bias would assist in the treatment of cocaine dependence, other sorts of chemical addictions should admit similar amenability to cognitive bias modification as effective treatment. Some evidence confirms this suggestion, indicating that higher attentional bias negatively correlates with the success of treatment outcomes for alcoholics (Cox, et al. 2002) and similar confirmation in the case of smokers (Janes, et al. 2010). The Janes et al. study is particularly interesting. The study measured brain reactivity to cues related to cigarettes and to smoking, and concluded that there was a strong negative relationship between brain reactivity to smoking-related cues and likelihood of continued tobacco abstinence among smokers who wish to quit smoking (our *akratic* addicts). They also found a correlation between brain reactivity (measured by fMRI data) and attentional bias (measured by a Stroop task). In concluding “...that prequit brain reactivity to smoking-related images is greater in smokers who eventually slip after attaining brief abstinence with NRT and that anterior insula and dACC fMRI cue reactivity correlate with an attentional bias to smoking-related words.” Janes et al. provide a neurological confirmation of the role played by attentional bias in addictions.

The empirical evidence for the important role that attentional bias plays in addictive behavior is not restricted to chemical addictions like alcoholism or addictions to cocaine or tobacco. Other studies have uncovered similar attentional bias (characterized by focus bias and recall bias) among overeaters (Nijs, et al. 2010), pathological gamblers (Boyer and Dickerson 2003), and computer gaming addicts (Decker and Gay 2011).

Decker and Gay, studying computer gaming addiction, used an Affective Shifting Go/No-go Task (ASGNG) to measure cognitive bias toward gaming-related cues among habitual players of a particular video game against a control group of non-players. The ASGNG (not an abbreviation that rolls off the tongue easily) task is similar to the Stroop task. A set of positively valenced common English terms as well as positively valenced jargon specific to the video game are targets, while negatively valenced English and jargon counterparts are distractors for some trials, vice-versa for other trials. Subjects are asked to identify the targets by pressing a button when they are displayed, and are instructed not to press the button for the distractors.

So each subject would be expected to press the button for a word like ‘friend,’ a positively valenced English word, as well as for ‘purple,’ a positively valenced word for

World of Warcraft players.¹³ Subjects would likewise be expected to leave off the button for negatively valenced English or World of Warcraft phrases, like ‘betray’ or ‘nerf’¹⁴ respectively.

The World of Warcraft players demonstrated cognitive bias toward game-related stimuli by more quickly and accurately distinguishing between game-related targets and distractors than English targets and distractors, and also distinguished game-related targets from game-related distractors more quickly and accurately than the control group of non-players distinguished English targets from English distractors. Decker and Gay conclude: “Similar to past research showing that recovering alcoholics had cognitive-bias to alcohol-related words, [game players] with high rates of time spent playing computer games showed cognitive-bias toward gaming-related words” (807–808).

It has long been clear that cognitive performance can be habituated—practice enough memorization and you will become better at memorizing things, even without intentionally trying to do so. The role of habit and cognitive bias in the case of the addict seems to be a kind of feedback loop. The addict trains herself to recognize and seek addiction-related stimuli, and this makes the attentional bias toward addiction related stimuli stronger. If attentional bias really is as central to addiction as the evidence suggests, this feedback loop would explain why those who have been addicted for a greater period of time find it harder to break an addiction. The attentional bias is more highly habituated in the long-term addict.

Because the same forms of cognitive bias are observed accompanying so many varieties of addiction, it is reasonable to postulate that these cognitive biases are central to what we mean by ‘addiction.’ Evidence that the degree of cognitive bias varies concomitantly with the strength of the addiction (measured in rates of abstinence from the addictive substance or behavior) is further reason to believe that cognitive bias is an essential element of addiction. Since addictive behavior is often contrary to the better judgment of the addict, addiction provides a rich field of examples for the cognitive bias account of *akrasia*.

13. The most powerful and desirable pieces of weaponry and armor in World of Warcraft are most easily distinguished by their names written in purple text (for rare or epic items) versus blue (for merely uncommon items) or green (for run-of-the-mill items). Players refer to receiving such an item as, e.g., ‘getting a purple.’

14. Blizzard, the company that maintains World of Warcraft, often makes changes in the abilities of certain classes of players’ characters. Such changes that serve to make a class of character relatively more powerful are known as ‘buffs’ while such changes that make a class less powerful are known as ‘nerfs.’

It is worth noting that in the philosophical tradition, examples of people wanting to change their behavior but failing to do so often involve bad habits or addictions. Unifying an empirically informed account of *akrasia* with empirical evidence concerning the role of cognition in sustaining addictions is a philosophically and scientifically significant development. It is philosophically significant because it is the first appearance of a thoroughly empirical account of a *long-discussed* phenomenon. It is scientifically important because it serves to unify separate avenues of research under a broader aegis. Given a clear empirically informed account of *akrasia*, the interested empirical researcher has a starting point in further studying *akrasia* as such, rather than inadvertently revealing elements of *akrasia* while studying addictions, cognitive biases, or decisional heuristics.

As I am primarily interested in the philosophical importance of an empirically informed account of *akrasia*, I shall briefly point out how the empirically informed account contributes to, and in some sense completes prior philosophical perspectives on *akrasia*.

In Aristotle's diagnosis of *akrasia*, undertaken to refute the position that *akrasia* is psychologically impossible, he proposes that *akrasia* is the result of having but not attending to knowledge of the good. Lacking the vocabulary of modern behavioral psychology, Aristotle appears to have anticipated, albeit in a very general way, the empirically informed explanation of *akrasia*. Replacing vague notions of having but not attending to knowledge with detailed empirical accounts of cognitive/attentional bias preserves the spirit of Aristotle's feeling concerning an appropriate explanation for *akrasia* and adds an empirically verifiable phenomenon on which to ground an explanation of *akrasia*.

Similarly, Donald Davidson, in developing an account of the logical possibility of *akrasia*, relies on a distinction between all-out judgments (judgments that consider everything relevant to the evaluation) and judgments with a *prima facie* operator that take the form $pf(x \text{ is better than } y, r)$ where r is the evidence considered.¹⁵ Davidson does not consider (as it is outside the scope of his paper's limited purpose) whether the difference between all-out judgments and *prima facie* judgments is empirically verifiable. The empirically informed account of *akrasia* that I have been advocating fills this gap in this overall story of *akrasia* as well as Aristotle's. Because human beings are incapable of simultaneously considering all relevant evidence at the same time, and frequently act upon judgments of the form outlined above, it is clear that we ought to see cases of action based on evidence that is more apparent or that is attended to *first* (*prima facie*

15. While *akrasia* has never been a dead issue in philosophy, much contemporary discussion of *akrasia* has been inspired and influenced by Donald Davidson's landmark paper "How is Weakness of the Will Possible?"

judgments) than judgments based on evidence that a more patient thought process would reveal as superior.¹⁶

The idea that a specific cognitive *weakness* explains the difference between the addict who sincerely judges that they ought to break their addiction and still relapses has both commonsense currency and also empirical verification. If a computer gaming addict (for example) is more apt than the non-addict to take notice of gaming-related stimuli, and also apt to respond more quickly to gaming related stimuli than the non-addict, then it should not be surprising that their decisions concerning computer gaming are more frequently made on the basis of *prima facie* judgments with gaming-related stimuli crowding out non-gaming-related stimuli, accompanied by a failure to recall past negative consequences of excessive gaming.

Treating Akratic Addiction

William Campbell, mentioned above, approaches the problem of addiction and *akrasia* from a treatment perspective. Campbell is motivated by what he sees as a problematic lack of a unifying definition of addiction that explains why chemical addictions (like alcohol and cocaine) should have so much in common with behavioral addictions (like gambling).¹⁷ Campbell argues that the field of addiction treatment has been held back both by lack of a comprehensive etiology of addiction, and by an “accepted view” that treats addiction as primarily conative. He puts it briefly: “The accepted view is that craving causes the addict to act” (671). Campbell follows this claim with a brief refutation of the conative accepted view. First, if the craving were causative, then every time the cravings became sufficiently strong, an abstinent addict would relapse. In reality, sometimes they do, sometimes they don’t. Further, sometimes addicts who experience severe craving stop their addictions. These events tell against cravings as a sufficient condition for relapse or as a necessary obstacle to recovery.

This is not an extended argument, and it is a bit simplistic, but I think Campbell’s point has merit, particularly since the previously discussed evidence indicates a much more central role for cognitive states in addiction than conative states. But because the conative view is so prevalent, it is worth more detailed examination.

16. See (Davidson 2001, 40) for a formal description of better reasons supplanting inferior ones in judgment.

17. “The present conceptualization of addiction inadequately explains addiction as an entity unto itself and does not provide any understanding of the relation between the substance and behavioral addictions” (Campbell 2003, 671).

One might preserve the conative view against Campbell's argument and posit that whenever the desire to quit is strong enough, it can overpower even the strongest of cravings, and when it is weak enough, it can be overcome even by mild cravings. However, this idea (though common) has its own conceptual problems. The will (in this case, whatever accounts for the desire not to be an addict) is often taken to be the feature of psychology that resists or fails to resist desire, and the 'will versus desire' description of *akrasia* has been historically prominent enough to translate *akrasia* as "weakness of will."¹⁸ Watson, who is skeptical of the view, puts the problem this way:

This talk of strength of desires is obscure enough, but insofar as it has meaning, there does not appear to be any way of judging the strength of desires except as they result in action...Isn't the only relatively clear measure of strength of desires [versus strength of the will] the tendency of those desires to express themselves independently of the agent's will?...If a sufficient condition of compulsive motivation is that the motivation be contrary to the agent's practical judgment, then weakness of will is a species of compulsion. (1977, 327–328)

In other words, the "will versus desire" picture of *akrasia* has difficulty distinguishing *akrasia* from compulsion. If some desire is so strong that nobody could overcome it, then it is a clear case of compulsion, but the evidence for this circumstance is identical to the evidence for someone with an extraordinarily weak will succumbing to a stronger, but still very weak (that is, resistable) desire.

Aside from this issue, the "will versus desire" theorist is constrained by their view to offer one of two remedies for the *akratic* addict. That is, the "will versus desire" theorist must provide some account of what it means to intentionally strengthen one's own will or else to intentionally weaken one's desires (both of which are themselves "acts of will"). I need not belabor the inherent circularity of using one's will to strengthen one's will. Put into layman's terms, the addict who judges that they ought to quit and is unsuccessful in quitting needs to find a way to either want the addiction stimulus less or else to want to quit more. Such a view is dependent upon some successful method of desire modification.

18. See also Davidson, "How is Weakness of the Will Possible?" p.27. Here, Davidson also characterizes a separation of "thinking we ought" and "wanting to" as the most common way of handling *akrasia*. This can legitimately be called the "received view" of *akrasia*. In (Paradoxes of Irrationality 2004, 175) Davidson expresses a similar worry to mine that the "will versus desire" picture (he calls it the Medea Principle) does not adequately distinguish *akrasia* from compulsion.

Despite the status of the “will versus desire” view as the received view of *akrasia*, it appears that few actually endorse the view in its entirety, while many argue against it. I have no intention of building up the naïve “will versus desire” view¹⁹ because my primary opponent is the Humean. I bring up the “will versus desire” view because it shares one particular problem with the Humean, and that is how to best account for reform of the *akrates*.

If the *akrates* is to act in accord with their judgment that x is better than y, then the Humean must come up with an account for desiring x more strongly or desiring y less strongly. This is what Campbell has in mind in referring to a conative approach. It is my intent to show through additional evidence and analysis that it is much more productive to approach addiction from a cognitive angle than from a conative angle, and that the cognitive approach to reforming *akrasia* has been attended with greater success than the conative approach. My interpretation of the evidence is that normative judgments, understood as cognitive states, have a much greater role in normative motivation than the Humean can accept, and so my version of cognitive *akrasia* is the correct view.

Changing behavior without changing desires

Odysseus wished to hear the sirens sing, because their singing was said to be so beautiful that men would dash their ships upon the rocks pursuing the sirens who sang so. Knowing that his desire to pursue the sirens would be irresistible, Odysseus ordered his sailors to tie him to the mast and then to seal their own ears with wax, and not to let him loose until they were well clear of the sirens. As the story goes, Odysseus begged and pleaded and shouted for his men to untie him or to remove the wax from their ears, but they did not hear him, and followed his original orders. So Odysseus changed what would have been his behavior without changing the desire to pursue the sirens. He did this by recognizing his interests, anticipating his future desiderative states, and then manipulating his environment to make the pursuit of an irresistible desire impossible so as to act in accord with his better judgment.

Examples of this combination of foresight, careful judgment, and manipulation of our future selves can be termed ‘Odyssean self-control’ in his honor.²⁰ People take similar, though less heroic measures every day. Not keeping candy bars in the house so as to

19. See the latter half of (Watson 1977) for an attempt at this.

20. I first encountered this phrase in (Pinker 2011, Chapter 9).

avoid overindulging, not shopping for food while hungry, or seeking out a less distracting environment in which to work are all examples of Odyssean self-control.

Consider a more contemporary example germane to the current discussion. Ingrid is a recovering alcoholic. Let us stipulate that she is an addict who judges that it would be best not to be an addict, and so is an *akratic* rather than intemperate addict if she resumes drinking. She very much desires to drink, but of course has no trouble refraining from drinking while at work, as there is no alcohol available. Similarly, her husband helps her to ensure that she resists the temptation to keep any alcohol at home. The most direct route home from her workplace takes Ingrid by a pub where she has spent many an after-work hour drinking and socializing with her friends, some of whom she has had to break contact with because they have been insensitive to her efforts to stop drinking. She has even had her husband replace the phone numbers for these friends with the number of the local AA support line in her phone. Because she finds the temptation to stop at the pub nearly irresistible, she has stopped driving herself home from work, going as far as to sell her car and allow her driver's license to expire, replacing it with a mere government ID card. She takes the bus home, and there is no bus stop near her old pub.

The reason she goes to such heroic measures is to ensure that she would have to go to equally heroic measures to have a drink. She would have to solicit someone's cooperation, which might not be forthcoming if they know she is a recovering alcoholic, and she tells everyone she knows that this is the case. She would have to call and schedule a cab or walk a long distance to get to her old pub, and both of those are actions that give her much time to reconsider or not follow through with these plans in the course of her ordinary workday. In other words, these obstacles to drinking and going to the pub allow Ingrid sufficient opportunity to attend to her meta-judgment as opposed to being in a situation in which recall bias and focus bias would have a significant causal role in her behavior. This is a good example of Odyssean self-control, and what is most notable is that it is an attempt to modify behavior not by diminishing the desire to drink, but by Ingrid's reasoning out her likely response to environmental cues and then placing barriers in the way of encountering the cues likely to contribute to a relapse, while replacing some cues with cues likely to contribute to abstinence.

It would beg the question to say that either *of course* there is some desire not to drink in operation the whole time or that *of course* her judgment that it is best not to drink is sufficient motivation for her to work out the strategy that she has worked out. I do not deny that the Humean may be correct and that desires may hold a monopoly on motivation, but I think that Ingrid's case is one which, if taken at face value, demonstrates a form of cognitive self-manipulation. Whether there is some desire at play that counters

the desire to drink or not, Ingrid's strategy is essentially one that is actuated on her ability to anticipate consequences and manipulate her surroundings to achieve results that she judges best. These are cognitive abilities. Further, her efforts are all steps that are intuitively consistent with her judgment that it is better to quit drinking, while a failure to do something to keep herself away from bars and alcohol would be intuitively inconsistent with her better judgment, opening Ingrid to the charge of subjective synchronic irrationality.

Consider only one more fabricated example. Alex judges that it would be best to quit wasting so much time playing video games. He decides to make use of the best behavior modification research available and visits the website www.stikk.com.²¹ The Stikk system was born out of credible research on incentives and behavior modification, and chiefly makes use of the insight that it is more effective to give someone a reward (say, money) and then threaten to take it away if the subject doesn't complete a goal than to offer the same reward only once the goal is completed. Alex, in order to make the Stikk contract, must set his goal: no more than ten hours of video gaming per week (hey, it's a start). Alex must then supply stakes. Most people choose to put money on the line, but the site allows a commitment contract without monetary stakes. Alex designates \$10 for every hour exceeding 10 per week of video games that he plays. Of course, those at Stikk do not wish to profit off of others' *akrasia*, so the disincentive for failure has an interesting twist. If Alex's credit card must be charged, the money goes to the Westboro Baptist Church, whose views and practices Alex absolutely detests (the subject chooses their own anti-cause). Alex then selects a referee, who keeps track of his progress. Alex's roommate, Beavo, who has been most vocal about the amount of time Alex has been wasting at video games, is the logical choice. Finally, Alex enlists several friends and family members to act in the role of supporters, whom he keeps informed of his progress and from whom he receives encouraging feedback.

If this method of behavior modification works, as the laboratory work on which the method is based would suggest,²² then it is also an example of a form of self-manipulation that relies on the ability of the individual to predict their responses (including what their desires *will be*) in counterfactual scenarios. Would it be most accurate to say that Alex stopped playing so many video games because he hated the Westboro Baptist

21. This is an actual website, founded by Ian Ayres, Dean Karlan, and Jordan Goldberg, two Yale economics professors and a former Yale student, respectively.

22. The site, as of June 3, 2014, lists just over 300,000 workouts completed and over 2.5 million cigarettes not smoked.

Church more than he loved video games? That makes some degree of sense, except that presumably Alex always hated the Westboro Baptist Church more than he loved video games, and that his hatred only mattered after he intentionally set up a system in which one was set directly opposed to the other. The cognitive anticipation of his future states is doing a great deal of motivational work. Even if the Humean is correct and desires hold a monopoly on motivation, there is at least room to pay much greater attention to cognitive states in a credible story of motivation, especially a person's normative judgments.

As far back as Aristotle, the difference between the *akratic* and the intemperate is couched in their actions relative to their best judgment. The intemperate chooses in accord with their own best judgment (and thus are subjectively rational), but are disapproved of because their judgment runs afoul of some objective standard (and thus are called objectively irrational). This distinction has some consequences that are relevant here. The intemperate person might be persuaded to *change* their judgment, or might not, but the *akratic* is susceptible to correction of their behavior by simply having their best judgment more readily brought to their attention.²³

Even in cases in which we do little or nothing to change desires that we have, we may change behavior. In the psychological literature, cases like the above are termed 'cognitive bias modification'. The term sounds more clinical and impressive than it really is. Actually, the kinds of strategies employed in the various forms of cognitive bias modification in the literature strongly resemble the above two examples of Alex and Ingrid.

Cognitive bias modification treatments have their genesis in research aimed at treating various sorts of anxiety and depressive disorders. A significant part of the etiology of anxiety and depressive disorders involve certain cognitive biases, and indeed these biases are common across many emotional disorders. As Matthews and MacLeod put it in their literature review:

Evidence has continued to show that, relative to emotionally stable individuals, those prone to emotional disorders preferentially attend to emotionally congruent cues, recall more unpleasant memories, and interpret ambiguous events in a more negative manner. The findings we have reviewed suggest that these emotional processing biases occur across emotional disorders, as perhaps might be expected in view of

23. Aristotle puts it "Moreover, the incontinent person is the sort to pursue excessive bodily pleasures against correct reason, but not because he is persuaded [it is best]. The intemperate person, however, is persuaded, because he is the sort of person to pursue them. Hence the incontinent person is easily persuaded out of it while the intemperate person is not" (1999, 111; NE Book 7, Chapter 8, section 4).

their frequent comorbidity. The evidence also suggests that apparently different types of repeated negative ideation, including worry in GAD [generalized anxiety disorder] and rumination in depression, have more in common and are more similar across disorders than is sometimes supposed. (Mathews and MacLeod 2005)

It is important to note that the cognitive biases specifically identified are focus biases²⁴ and recall biases,²⁵ which are both identified above as important causal factors in addictive behavior. Importantly, these biases disappear when emotional disorders are in remission (MacLeod and Mathews 1991). This data has given researchers reason to wonder whether attempts to address these cognitive biases would improve clinical outcomes.

In the case of *akrasia*, the kind of cognitive bias modification that should be effective given the cognitive account of *akrasia* that I have supplied, is as follows. The key to avoiding *akrasia* is attending to one's own better judgment. The *akrates* needs some form of cognitive bias modification that has the effect of combating the focus and recall biases that crowd attention to better judgment out of the global workspace. Such approaches have commonsense support. I am not the first to propose that such cognitive approaches are effective remedies for *akrasia*. Alfred Mele, in discussing what *enkrateia* (the opposite of *akrasia*) consists of, writes:

An agent can, for example, keep clearly in mind, at the time of action, the reasons for doing the action which he judged best; he can refuse seriously to entertain "second thoughts" concerning matters about which he has just very carefully made up his mind; he can seek to add to his motivation for performing the action judged best by promising himself a reward (e.g., an expensive dinner) for successfully resisting temptation. (Mele, *Self-Control, Action, and Belief* 1985)²⁶

24. For more evidence concerning the causal role of focus bias in emotional disorders like anxiety and depression, see (Mineka and Sutton 1992; Mathews and MacLeod 1985).

25. For more evidence concerning the causal role of recall bias in many emotional and other disorders, see (Blaney 1986).

26. Mele's view is not a fully worked out view of the motivational role of normative judgments, but his focus on specifically cognitive "therapies" is apropos. He cites Alston, "Self-Intervention and the Structure of Motivation" *The Self: Psychological and Philosophical Issues* ed. Mischel, Oxford: Blackwell, 1977, p.77 and Brandt, *A Theory of the Good and the Right* Oxford: Clarendon, 1979, pp. 111, 126-27, 333ff.

The first part of the sentence refers to keeping better judgment in the global workspace, or as in Ingrid's case, keeping unwanted stimuli out of it. The second part of the sentence refers to strategies like Alex's, though his reward is supporter approbation while failure carries a penalty. Commonsense approaches to behavior analysis and modification are not always accurate, but where careful study confirms them, we have that much more reason to rely on such approaches.

Earlier, I mentioned the relationship between decisional heuristics and cognitive bias. What is worth noting is that a heuristic is a passive thing, while metajudgment is active, and requires attentional resources (i.e., space in the global workspace of consciousness). It is also slower and more deliberate. Common remedies for attending to better judgment often feature a strategy of being more cognitively active than passive. Counting to ten before acting or speaking gives the agent opportunity to attend to metajudgment rather than acting out of anger or other impulse. Posting reminders to oneself where they will be seen during critical moments helps people to attend to factors that they at once consider most important and at the same time know they may neglect.

The success of some of these long-used attempts at cognitive bias modification is also observed in a more controlled setting. A recent study by Hoppitt, Matthews, Yiend, and Mackintosh (2010) examines the role of active training in cognitive bias modification. The study is designed to reveal the effect of active (as opposed to passive) training on modifying cognitive bias.

The study takes two groups of volunteers who are not disposed to anxiety, as measured by a standardized assessment. One group is given active cognitive bias modification, while the other group is given passive cognitive bias modification. In the active training, the subjects are given a scenario that is emotionally ambiguous until the last word of the scenario. For example:

You have decided to go caving even though you feel nervous about being in such an enclosed space. You get to the caves before anyone else arrives. Going deep inside the first cave you realize you have completely lost your w—. (Hoppitt, et al. 2010, 75)

The framers of the study point out that such a scenario is emotionally ambiguous in the sense that the last word could sensibly be 'fear,' but supplying the first letter of the word 'way' resolves the ambiguity. The subject is then asked if they envision themselves feeling afraid in the cave.

The passive training group is supplied with the entire passage above, complete with the final word, and the sentence 'You are feeling afraid of being in the cave' appended to

the end of the original passage. Both groups are then given a filler task and then are both presented with an emotionally ambiguous passage such as:

You are finding that your sight is worse than it was and despite the risks you decide to try an experimental laser surgery you've read about. Afterwards as the bandages are taken off your eyes, you realize that your life will be affected radically by the results (Hoppitt, et al. 2010, 75).

The point is to see if there is a difference between how the actively trained group and the passively trained group interprets the ambiguous passage. The study found a statistically significant difference in the tendency of the actively trained group versus the passively trained group to interpret the ambiguous passage negatively. Presumably if the active training were positively valenced instead of negatively as the study write-up indicates then the active training would have increased the tendency of the active training sample to interpret the ambiguous passage positively.

Interpreting ambiguous evidence as valenced in a particular way is evidence of cognitive bias. If there were no cognitive bias present, the subject would interpret the ambiguous evidence as ambiguous. What the results of this study seem to indicate is that actively engaging the cognitive faculties to interpret data and envision one's own emotional response has an observable causal effect on future responses. Active cognitive engagement is at the heart of cognitive bias modification.

The study is carefully crafted to isolate the effect of active cognitive training, but the study interestingly confirms a great many common platitudes about behavior modification. For example, some form of "visualizing success" is a staple in self-help guides and guides to personal and professional success. The idea is that when you actively visualize yourself acting, thinking, or deciding a certain way, you become more likely to act, think, and decide in that way.

The treatment of a focus bias, especially in cases of addiction, would then have a strong effect on determining whether the addict would refrain or relapse. Most of the work in modifying focus bias is in the context of treatments for anxiety disorders. Part and parcel of the anxiety disorder is focusing unduly on negative or threatening stimuli to the exclusion of positive or non-threatening stimuli. There are two ways of measuring anxiety: trait anxiety and state anxiety. Measures of state anxiety are measures of the degree to which a person is in an anxious state. Trait anxiety is a measure of the effect of anxiety-producing stimuli. A recent review of the literature concerning attentional bias modification indicates that "Attention Bias Modification Treatment produced a greater

effect on trait than state anxiety measures. This suggests that ABMT might target the more enduring aspects of anxiety” (Hakamata, et al. 2010).

The message is encouraging for the treatment of *akrasia* by means of treating the cognitive biases that are implicated in the *akrates*. If the anxiety sufferer can come to diminish attentional biases that select threatening stimuli to the exclusion of positive and neutral stimuli, then it stands to reason that the addicted *akrates* like Ingrid or Alex may train him or herself to focus on more stimuli in their environments other than alcohol-related or gaming-related stimuli.

A study by Lester and others, similar to the Hoppit et al. study described above, but with a broader scope, details some strategies for cognitive bias modification designed to broadly treat anxiety and depression. What should strike the reader about their descriptions is that they are much more pedestrian in nature than the clinically impressive sounding phrase ‘cognitive bias modification therapy’ would suggest. It is a case in which at least some aspects of our common folk psychology have some empirical verification in a carefully controlled setting.

A sampling of the cognitive biases and their modification strategies are as follows (Lester, et al. 2011, 300):

Cognitive Error	Definition	Clinical Example	Example Modification Item
Selective Abstraction	Focusing on a detail taken out of context, while ignoring other more salient features of the situation and conceptualizing the whole experience on the basis of this fragment	A recent graduate begins a new position and is eager to make friends with their colleagues. They ask their new colleagues whether they would like to join them for a drink after work and 2 people accept their offer. They focus on the fact that some people declined and think this means they aren't liked rather than being pleased that some of their colleagues are keen to socialize.	You have started a new job and hope to be friends with your colleagues. At the end of your first day you ask whether people would like to go for a drink and 2 people offer to come out with you. You think this means you have probably been rejected/ accepted Have you failed to make friends?
Dichotomous Thinking	Tendency to place all experiences in one of two opposite categories, e.g. flawless or defective rather than viewing them as existing on a continuum. In describing oneself, the extreme negative categorization is selected	You've been trying to diet but you've eaten a few sweets over the weekend. You tell yourself that you can never control yourself and that all your dieting and jogging over the whole week have gone down the drain.	You have been on a really strict diet for a few weeks and have totally cut out sweet things. However you couldn't resist a piece of cake on your friend's birthday. You think your attempts at dieting have been... futile/disciplined Have you completely failed in your attempts to diet?

Notice the overlap between the cognitive errors described in this table and cognitive errors involved in classic examples of *akrasia* discussed throughout this work and other philosophical discourse on *akrasia*. The examples in the Lester et al. study are tailored to anxiety and depression, but consider different ways of fitting the definitions supplied.

Ingrid is at a party, and there is alcohol present, and several people near her are having an alcoholic drink. Ingrid focuses unduly on these examples and becomes anxious

that everybody else is drinking, and she feels a great deal of social pressure that crowds out her resolve to stay on the wagon. Now imagine that a close friend is next to her to apply cognitive bias modification treatment. This interlocutor points out all of the people who are not drinking alcohol, and asks probing questions of Ingrid, asking whether she really believes that anyone notices or cares whether or not she has a drink. This line of questioning and pointing out of external stimuli actively engage Ingrid's cognitive faculties and gives her a greater chance to attend to her better judgment of abstinence.²⁷

Consider now any dieter at some stage of the process, who can be accused of dichotomous thinking with rather little modification of the above example. The dieter, though judging that it would be better to avoid the sweets than to indulge in them, recalls *akrasia* in his recent past, and considers his diet irrevocably lost. He indulges in the sweets, contravening his better judgment while making it even easier to continue indulging in the sweets. Again, an interlocutor could actively engage his cognitive faculties with probing questions about the real effectiveness of dieting and the comparative effectiveness of indulging less as opposed to more. Again, this would have the effect of not only allowing better judgment to prevail in this case, but (in accord with the evidence from the Hoppitt study) makes it more likely to prevail in similar circumstances in the near future.

The success of these strategies for cognitive bias (and therefore behavior) modification is also confirmed by Lester et al. In their words, "Cognitive Error Modification was capable of inducing systematic group differences in how hypothetical events were perceived in both a healthy and vulnerable sample" (305).

Of course, strategies for anti-*akratic* cognitive bias modification need not necessarily involve an interlocutor. Controlling one's environment (as in Odyssean self-control), setting reminders for oneself in places that they will likely be seen (being one's own interlocutor), habituating active engagement of cognition and metacognition (repetition of slogans, mottos, or using the 'count to ten' strategy) are all examples of cognitive bias modification therapy that do not require a therapist.

I hope I have not belabored the point, but what I have been arguing is that the right way to reform the *akrates* is to focus on the cognitive aspects of the *akrates* rather than on their desires. If *akrasia* involves cognitive bias, and if the difference between being *akratic* and not being *akratic* is actuated on the modification of cognitive states, then

27. Consider this from Aristotle: "For some people are like those who do not get tickled themselves if they tickle someone else first; if they see and notice something in advance, and rouse themselves and their rational calculation, they are not overcome by feelings, no matter whether something is pleasant or painful" (Nicomachean Ethics 1999, 110; Book 7, Chapter 7, Section 8).

this is good reason to believe that the cognitive account of *akrasia* is the right account. If the cognitive account is the right account, that indicates that normative judgments, understood as cognitive states, play a significant role in motivation and action. The evidence I have gone to such lengths describing is at odds with the picture of *akrasia* painted by the Humean. For the Humean, you can judge and cogitate all you like, but unless you have the appropriate desires, your behavior doesn't change. The evidence indicates that cognitive states (which include normative judgments) have a much more significant role than the Humean perspective allows in motivation and action.

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