



**Sylvia R. Karasu M.D.**  
The Gravity of Weight

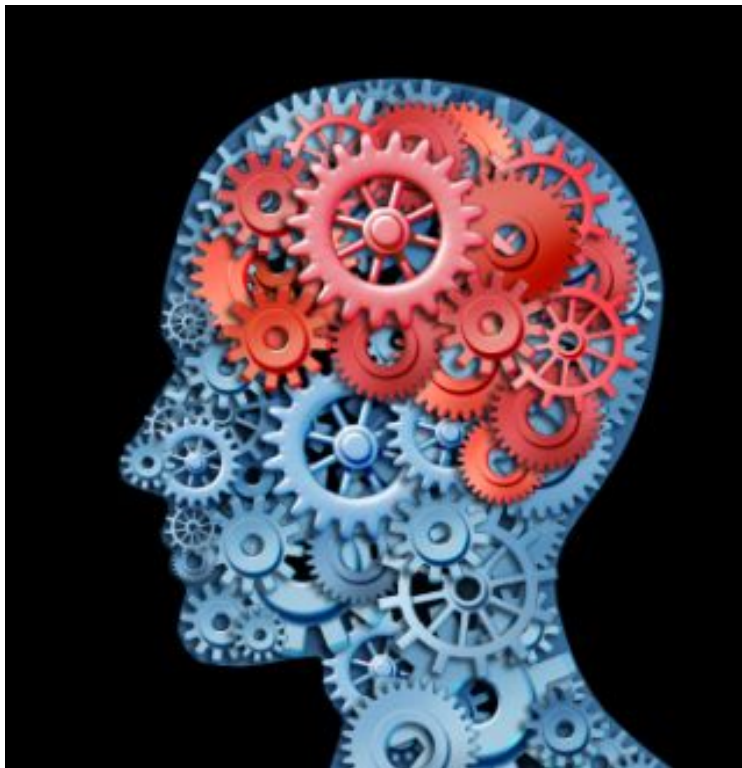
# Weight Control: The Biological Brain, The Psychological Mind

How mind matters in weight control: piecing together puzzling questions



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Weight control is the result of a complex integration of many factors, including environmental, genetic, neuro-endocrinological, and psychosocial. There is no question that much of weight control is biological, but how does the psychological mind work with the biological brain and body?



The brain is a "minded brain."

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Neuroscientist Antonio Damasio has written of our "minded brain." In other words, our human brain and the body "constitute an integrated organism." For Damasio, all the images and thoughts that constitute our minds--our "mental phenomena"--are "biological states that occur when many brain circuits operate together."

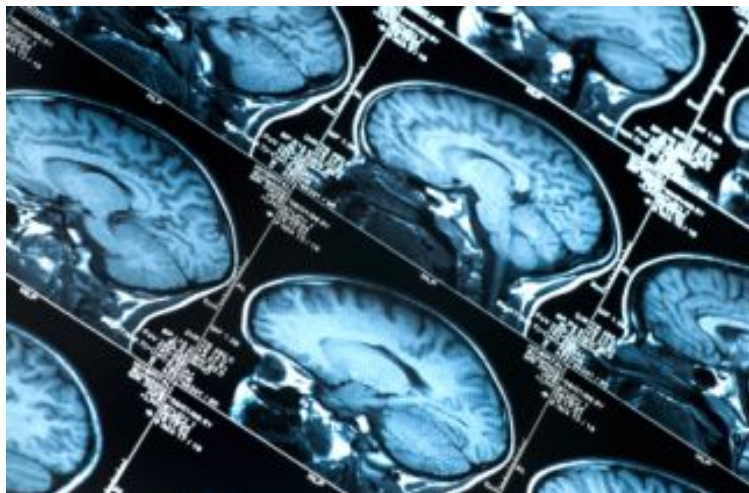
Drs. John Monterosso, associate professor of psychology and neuroscience at the University of Southern California and Barry Schwartz, a professor of psychology at Swarthmore College, explain "All psychological states are biological ones." In a *New York Times* article this past year, Monterosso and Schwartz wrote of the "misguided" belief people have in what these researchers call "naive dualism," namely that psychological causes are distinct from biological

ones. In an earlier (2005) article in the journal *Ethics and Behavior*, Monterosso and his colleagues designed a series of experiments on the nature of responsibility. They found when their subjects have this

belief, they see behavior as voluntary only when it seems to come from the mind (or soul), but when there is a physiological explanation (and “when participants tended to view the body as the cause of the behavior,”) these subjects perceived this behavior as less voluntary and hence they were apt to attribute less responsibility to those actions.

#### MRI brain scans

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#### Will brain scans hold the key to obesity control?

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How does all this relate to weight control? Our minds can be very powerful and persuasive when it comes to weight. For example, our highly developed prefrontal cortex, i.e., our cognitive brains, enable us to plan our meals, think about food rationally, remember what we have eaten, and even remember what foods made us sick many years earlier. We are able to appreciate the consequences of our behavior such as the importance of watching what we eat and exercising regularly. Researchers Lowe and Butryn write of how we can be “restrained eaters”--that is, we are capable of eating “less than we want, rather than less than we need.” We are also capable of choosing a less appealing food because it is healthier or making food choices

based on extrinsic factors such as cost, brand, convenience, or even what other people are eating or the television commercial we just saw.

It is our “minded brain,” though, that can also seem to sabotage our efforts to maintain our weight, despite our best intentions to do so. We can be overwhelmed by the sugary, fat concoctions in our environment or our own cravings for a particular food and give in to our temptations and dismiss any long term goal of maintaining our weight. The technical term for this is *delay discounting*: we devalue or even discount something that may happen in the future (e.g. gaining weight or developing medical consequences from obesity) for the sake of some immediate reward or gratification (e.g. eating those chocolate chip cookies). We can also develop what researchers Herman and Polivy call “the perverse logic of the dieter” or the “what-the-hell” effect when we eat one food we shouldn’t and then give up our diet entirely--in an all-or-none fashion. We make value judgments about foods and ourselves--they are good or bad--and we are good or bad for eating them.

Whether we have a biological set point for weight regulation is controversial but some believe in a *cognitive set point*, first described in the 1970s. It is a point in the perception of our own weight, shape, or size that involves a more deliberate control over our eating. Though this point can change over time, as for example, when our “acceptable” weight on the scale creeps up slowly or we choose to buy the next size in clothing,

most who care about weight have a limit. In other words, there is a personal “diet boundary” we dare not cross.

For maintaining our weight, we also need a cognitive sense of self-efficacy, i.e., the sense or confidence that we can bring it about. Psychologist Roy F. Baumeister has written extensively on self-control (and the broader term, self-regulation). He notes that few impulses are truly irresistible (e.g. such as breathing, sleeping, urinating). Most of the so-called “irresistible” impulses are, in reality, rationalizations for our failures to maintain self-control. Baumeister notes that self-control enables humans to have flexibility in our responses and the ability to stop what we are doing in the middle.



A puzzling integration of mind and brain?

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We may have more voluntary control than we sometimes think. Some researchers believe that our complex biological systems that have evolved for weight control have been hijacked and overwhelmed by our current obesogenic environment. So even though there is a biological substrate, we need our cognitive controls--the “minded brain”--more than ever if we want to control the burgeoning development of worldwide obesity.

## About the Author



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**In Print:** *The Gravity of Weight: A Clinical Guide to Weight Loss and Maintenance*

**Online:** my own website

