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The Gravity of Weight

The Body as Metaphor: Social Class and Obesity

Genes influence our weight, but status may also have a major impact.

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Vincent van Gogh, "Peasant Woman Digging," (Also called "A Woman with a Spade, Seen from Behind") 1885. Art Gallery of Ontario
Source: Wikimedia Commons/Public Domain



"A Beggar on the Path," 1856, oil on canvas by Edward Thompson Davis, Hamburger Kunsthalle, Hamburg, Germany
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"The evil of poverty is not so much that it makes a man suffer as it rots him physically and spiritually," wrote George Orwell in *Down and Out in Paris and London* (1933) considered by some to be Orwell's own account of the excruciating circumstances and utter destitution he had experienced as a *plongeur*—the lowest of menial restaurant workers. Mostly, Orwell focuses on the abject poverty that resulted in days without food: "...a man who has gone even a week on bread and margarine is not a man any longer, only a belly with a few accessory organs." His description, though, of the filth of many restaurants, with cats, rats, and cockroaches roaming the floors where raw meat lies among the garbage, sinks become clogged with grease, and the workers have no time to clean pots, plates or utensils, may make even the hardest want to forego eating altogether.

Ironically, though, through the years, lower socioeconomic status is more often associated with obesity. One of the first to make the connection between socioeconomic status (SES) and weight was Albert Stunkard back in the 1960s. (Moore, Stunkard, and Srole, *JAMA*, 1962) Using a representative cross-section of 1,900 people from the Midtown Manhattan Study, a survey originally focused on the epidemiology of mental illness, they found a surprising relationship between social class (based on the father's occupation and education when the subject was entering adulthood) and obesity. The prevalence of obesity was found to be seven times higher among women from the lowest social class than those reared in the highest class. Later, Stunkard speculated that there were three possible relationships: obesity influences SES; SES influences obesity; or some other factor influences both. (Stunkard and Sørensen, *NEJM*, 1993) For Stunkard and his colleagues, this effect had "profound implications for theory and therapy": Essentially, it meant that obesity, despite "its genetic and biochemical determinants," is also potentially "susceptible to an extraordinary degree of control by social factors." (Moore, Stunkard and Srole, 1962) Significantly, as well, and much later in twin studies, Stunkard et al (*NEJM*, 1990) explored the genetics of obesity and were among the first to find that body mass index (BMI) has as much as a 70 percent chance of being genetically determined in some populations.

Stunkard and his colleagues continued to study the relationship between SES and obesity (Goldblatt, Moore, and Stunkard, *JAMA*, 1965). They found, among 144 published



Luigi Nono, "Abandoned," 1903. Galleria Internazionale d'Arte Moderna, Venice, Italy
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studies, that “no matter what measures of SES or obesity were used or what population group (in developed countries), the results were monotonously similar”: SES was inversely (and strongly) related to obesity in women. In developing countries, they found the opposite to be true, so that possibly due to a lack of food, obesity was seen as a sign of health and wealth. Studies with men and children of either gender were more inconsistent. Their theory was that obesity is more “severely stigmatized” among women, and these attitudes develop at a very young age (Sobal and Stunkard, *Psychological Bulletin*, 1989). Obesity is a “visual defect,” and unlike most other chronic diseases, represents a “greater social disability” because of its “public nature.” (Stunkard and Sørensen, 1993)

They also speculated that women of higher SES would have more leisure time for exercise, greater access to resources that would “facilitate” dieting (e.g. more nutritious choices and ability to afford expensive foods; interest in dieting programs); and even have greater knowledge about nutrition and diet. The work of Stunkard was groundbreaking at the time, even though Allison and his colleagues (Pavela et al, *Current Obesity Reports*, 2016) note there were “limitations in the original focus,” such as reliance on a cross-sectional design, self-reports of height and weight, and little discussion of racial and ethnic differences that can have significant effects on weight and its relationship to SES.



"A Slum," (engraving) by C.A. Ferrier, 19th century, Private Collection
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McLaren (*Epidemiologic Reviews*, 2007) extended Stunkard et al’s research to 333 published studies through to 2004. As per the hypothesis, McLaren found these new studies resembled the original group but with a qualification: Because of large-scale societal changes and nutritional changes as a result of globalization of food markets, modernization, and economic growth, the differences between developed and developing countries were not as prominent. Furthermore, in more recent years, “virtually all social groups are increasingly affected by obesity” such that even though women of a higher SES in developed countries may still value being thin, “our obesogenic environment may make it increasingly difficult for women of any class group” to maintain that ideal. McLaren also noted that the body, incorporating appearance, type, and behavior, can be seen as a *social metaphor* for a person’s

status, an idea borrowed from the French sociologist Pierre Bourdieu. Social class, therefore, is not just about wealth, but “a constellation of attributes” (e.g. accent, body shape) that become highly valued.

How do we measure socioeconomic status? Most commonly, education and income are the key parameters. Galea and colleagues (Bor et al, *The Lancet*, 2017), though, explain that all measures of SES have limitations. For example, a person’s earnings may be assessed cross-sectionally and may fluctuate and not necessarily reflect earnings over a lifetime. Further, educational data are “coarse,” and there is not a “clear ordinal ranking” for education beyond college nor an appraisal of the quality of an education. And of course, use of self-reported data for education and income may suffer from reporting bias.

In more recent years Dhurandhar (*Physiology & Behavior*, 2016) has hypothesized that obesity is more common in women because women must maintain an adequate weight for successful reproduction and nursing; those with lower SES, though, may actually have an increased desire for food and even anticipate that a food supply may be or will become inadequate, whereas those with a higher SES may be “resistant” to that perception. She further speculates that obesity is more likely present in lower-class women because increased weight may be a “strategic response” to even a *perceived* insecurity about food (Dhurandhar, 2016).

Laraia et al (*American Journal of Preventive Medicine*, 2017) note that living in poverty, with its effects on stress levels, sleep schedules (due to irregular shifts, for example), and general uncertainties regarding employment, housing, and food can contribute to a *mentality of scarcity*. These researchers, though, emphasize that it is not



"The Pinch of Poverty," by Thomas B. Kennington, 1889, Art Gallery of South Australia.

Source: Wikimedia Commons/Public Domain



"A Beggar in Paris," by Isidre Nonell, 1897. In his book, "Down and Out in Paris and London," George Orwell depicts the life of excruciating poverty for those who are forced to beg. Says Orwell (p. 174): "A beggar...has merely made the mistake of choosing a trade at which it is impossible to grow rich."

Source: Wikimedia Commons/Public Domain

ability to compensate for those additional calories. Over time, this failure to compensate may potentially lead to weight gain (Wijayatunga et al, 2018).



"Are You First Class?" Color lithograph by the English School, 20th century. This conductor has some obvious question about this woman's subjective social status.

Source: Bridgeman images, used with permission

poverty alone that contributes to poor diets: "the majority of Americans, regardless of income, eat poorly," as judged by statistics on healthy dietary intake (e.g., sufficient daily quantities of fruits and vegetables), "even though the reasons for eating a poor diet" may be different for one social class from another.

Further, giving lower-class people surplus money to purchase healthier food does not necessarily lead to decreased caloric intake: Instead of substituting the unhealthier food for healthier, less caloric choices, many supplement, rather than displace, their meals with additional calories (Caldwell and Sayer, *Appetite*, 2018).

Sometimes it is not just our actual social class and environment that can affect weight and even health in general, but even the *perception* of that environment (Pavela et al, 2016; Dhurandhar et al, *Obesity*, 2018)—the so-called *subjective social status*, a term described in 1950s: "a person's belief about his location in a status order ... that may or may not be congruent with his objective status." (Davis, *Sociometry*, 1956) This notion of a subjective social status echoes Ralph Waldo Emerson: "...the poor are only they who feel poor..." (*Domestic Life*, Chapter V, in *The Complete Works*, 1904).

Subjective social status is measured by a pictorial image of a 10-rung ladder, the MacArthur Scale. (Dhurandhar et al, 2018; Wijayatunga et al, *Appetite*, 2018) In recent years, Allison and his colleagues have designed studies in which they have manipulated the environments of their subjects to create the impression that they have a lowered social status. (Wijayatunga et al, 2018; Cardel et al, *Physiology & Behavior*, 2016; Kaiser et al, *Annals of the NY Academy of Sciences*, 2012) In other words, it may be the "socio" as much or more than the "economic" that may lead to increased obesity. (Kaiser et al, 2012) In one small study, rigged Monopoly games appeared to result in increased caloric consumption and decreased feelings of powerfulness and pride in those with subjectively lowered status (Cardel et al, 2016). Another, using remote food photography, found that individuals with perceived lower subjective status had increased caloric intake and a reduced

Bottom line: Most researchers acknowledge that obesity rates have been increasing in every population worldwide, sometimes regardless of socioeconomic status. Many factors, including both genetic and environmental ones, may contribute to increased weight. Since the original work by Stunkard and his colleagues in the 1960s, researchers have appreciated that our socioeconomic status, usually assessed by income and education levels, can affect body weight. Even the *perception* of our status, such as when it is artificially manipulated and subjects, may have an effect on caloric consumption and a subsequent failure to compensate for additional caloric intake, though experimental manipulation is not the same as real-

world conditions. Lower socioeconomic status has been associated with increased weight, particularly in females, but the relationship is complex, not entirely understood, and differs among subgroups of populations by sex, race, and ethnic origin.



"Carefree" in Poverty," 1510-20, glass-stained, The Cloisters Collection, 1999, from the Metropolitan Museum of Art, NY. There is nothing particularly "carefree" about poverty.
Source: Metropolitan Museum of Art, NYC, Public Domain.

Note: For more detailed information on actual prevalence rates of obesity in different populations, see the papers by Ogden et al, in Morbidity and Mortality Report (MMWR), December 22, 2017 (adults) and February 16, 2018 (youth), from the Dept. of Health and Human Services/Centers for Disease Control and Prevention. Special thanks to Drs. Ogden and Flegal for providing me with these references for the most recent statistics (2011-2014.)

About the Author



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