

Is Social Anxiety Making Us Depressed? A Social Evolutionary Hypothesis for Why SSRIs Work

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Abstract

In the developed world, the use of selective serotonin reuptake inhibitors (SSRIs) has skyrocketed since 1988 when Prozac was first released in the United States. Biomedical psychiatry's explanation for their success is an unsubstantiated hypothesis that claims SSRIs treat a chemical imbalance in people who suffer from low levels of the neurotransmitter serotonin. Using social evolutionary theory, this article provides an alternative hypothesis for why SSRIs work for some people. SSRIs' success is attributed to their capacity to adapt people to the increased status anxiety occurring in developed nations grappling with the effects of unprecedented global competition. Biomedical psychiatry is depicted as adjusting patients to prevailing social norms rather than contributing to mental health.

Keywords: SSRIs; serotonin; depression; human evolution; status; globalization

Introduction

In Nikolai Gogol's short story "The Overcoat," first published in 1842, the protagonist Akakiy Akakievitch, an impoverished clerk, saves his meager government wages to buy an impressive overcoat, thus replacing the thread worn jacket that his coworkers once ridiculed for its shabbiness. The new coat garners Akakiy complements and attention. He begins to increase his expectations for success and his self-esteem rises—all due to his possession of the attractive garment. But Akakiy's hopes are quickly cut short when the coat is stolen and he finds himself without protection from the elements or the cruelty of a status-driven society that perceives him as inconsequential because of his low social rank. Eventually, Akaiy dies from exposure, but not before going insane.

Rarely today are associations made between low social status and insanity as Gogol did in his nineteenth century tale. Explanations for the cause of mental disorders more often look to genetic underpinnings and other endogenous origins with little regard for the inequalities that throughout the millennia have challenged humankind. In today's biomedical climate, even "insanity" has lost its usefulness. It is far too vague a term to facilitate assigning medications geared to treat the symptoms of disorders—rather than grapple with the nature of human suffering (Horwitz, Wakefield & Spitzer, 2007).

The loss of social status is one type of suffering that plagues all of humanity. Economic crises are particularly revealing of its profound affect. During the Great Depression in America, the suicide rate increased from 14 to 17 per 100,000 people (Black & Hopkins, 2003). In South Korea, the suicide rate increased by 50 percent in 1998 following the financial collapse that ensnared Asia during the 1990s (Klein, 2007). More recently, India's cotton belt has been renamed the "suicide belt" as crushing debt and falling cotton prices has led thousands of farmers to take their own lives (WNET/Thirteen, 2007).

Despite such emotional devastation that sharp financial declines can create—and with it, declines in social standing—the significance of status for emotional well being is all but silenced. Alain de Botton in his book *Status Anxiety* (2004) characterizes status as one of our greatest, albeit shameful loves:

Every adult life could be said to be defined by two great love stories. The first—the story of our quest for sexual love—is well known and well charted, its vagaries form the staple of music and literature, it is socially accepted and celebrated. The second—the story of our quest for love in the world—is a more secret and shameful tale. . . . And yet this second love story is no less intense than the first, it is no less complicated, important or universal, and its setbacks are no less painful. (p. 5)

The loss of status, or the threat of losing status, is just as likely a cause of mental disorders as difficulties with interpersonal relationships. For example, studies that examine the effect of poverty on poor health show that rather than the result of lack of health care access, failure to utilize health care, or increased exposure to risk—conditions which often characterizes life in poverty—it is the psychosocial consequences of poverty that cause poor health, including depression (Marmot, 2004). Research done by neuroscientist Robert Sapolsky and others shows that the chronic stress resulting from such worries as having enough money or how to please one's boss triggers stress hormones that over time have devastating consequences for health. In particular, atrophy in the hippocampus region of the brain—an area most vulnerable to stress hormones—is witnessed in people with major depression (Schwartz, 2007).

People are particularly vulnerable to stress-related diseases when they perceive themselves as having relatively low social status. Irrespective of how secure a person's circumstances, subjective interpretations of socioeconomic status have been shown to contribute more to stress-related diseases than actual socioeconomic conditions (Singh-Manoux, Adler & Marmot, 2003). This explains why a poor Appalachian miner in the affluent United States experiences more status-related stress than a relatively poorer member of an African community where the majority of people suffer the same level of financial hardship.

De Botton (2004) characterizes the effects of status as *status anxiety* and gives the following definition:

a worry so pernicious as to be capable of ruining extended stretches of our lives, that we are in danger of failing to conform to the ideals of success laid down by our society and that we may as a result be stripped of dignity and respect; a worry that we are currently occupying too modest a rung or about to fall to a lower one. (pp. vii-viii)

Although status anxiety has not yet made the *Diagnostic and Statistical Manual of Mental Disorders*, it is a viable explanation for not only the success of the selective serotonin reuptake inhibitors (SSRIs) that are increasingly used to treat depression, but also the increased number of people currently diagnosed with this disorder. Difficulties with interpersonal relationships are certainly still a primary cause of depression and other

mental disorders, but as de Botton observes, it is only one of our two great loves that can go wrong.

Depression and Globalization 3.0

Depression has reached epidemic proportions. The National Institute of Mental Health estimates nearly 15 million adults suffer from a major depressive disorder each year (National Institute of Mental Health, 2007). From 1991 to 2001 depression more than doubled in the United States (Moore, 2007). This period roughly coincides with the introduction and mass advertising of the SSRIs (Swiatek, 2001).

Other developed countries show similar increases in both depression and antidepressant usage. In Australia the number of people reporting depression on the National Health Surveys nearly doubled between 1990 and 1995 (McManus et al., 2000). Increased antidepressant usage also correlated with increased occurrences of depression in this country. A similar trend was witnessed in the United Kingdom where between 1991 and 2001, antidepressant prescriptions increased from 9 million to 24 million per year (Moore, 2007).

Many correctly argue that the significant increase in depression is inseparable from the mass marketing of SSRIs and the creation of an image of depression as a biological disorder easily treated with these medications (Hollon, 2005; Kravitz et al., 2005; Lacasse & Leo, 2005). Since the inception of Prozac, depression and the SSRIs have been marketed together. Eli Lilly, the makers of Prozac, initiated Prozac's market debut with eight million widely distributed brochures titled "Depression: What You Need to Know" and two hundred thousand posters outlining the symptoms of depression that encouraged sufferers to seek treatment since now it was (supposedly) safe and readily available. Prior to the SSRIs, depression was largely seen as a debilitating disorder often requiring hospitalization, in part because of the side effects associated with the medications then used to treat this disorder (Moore, 2007).

Despite evidence that SSRIs are often over-prescribed, a significant minority of people in the developed world continues to take them—and it appears there is no end in sight to the number of new prescriptions that can be written (Wakefield, Schmitz, First & Horwitz, 2007). Since Prozac initiated this class of drugs in 1988 as a treatment for depression, SSRIs have gone on to become a central treatment for numerous mental health problems, including social anxiety, posttraumatic stress disorder, obsessive compulsive disorder, eating disorders, and personality disorders (Davidson, 2003; Kaplan & Hollander, 2004; McElroy, 2000; Pettus, 2006; Rinne, Brink, Wouters & Dyck, 2002). It has also extended its reach beyond psychological problems to include adjunct treatment for menstrual-related symptoms, inflammatory disorders, and cardiovascular disease (Narita, 2006; Roca et al., 2002; Whooley, 2006). In response to a survey conducted between 1999 and 2000 in the United States by the National Center for Health Statistics, 10 percent of women reported taking an antidepressant in the previous month compared with 4 percent of the men questioned (National Center for Health Statistics, 2004). The sheer number of users suggests SSRIs provide many with a sense of well being, even if it merely masks painful feelings, creating what Peter Breggin (2004) has described as apathy rather than improved mental health.

The appeal of this class of drugs may also have to do with changing social conditions. The period from 1991 to 2001, when depression diagnoses and SSRI usage increased substantially, was also a time of intense social change. In *The World is Flat* (2005), Thomas L. Friedman describes these years as accelerating towards the present era of globalization—what he calls “globalization 3.0” (p. 10). This new era of globalization has led to profound changes in the economy and how business is practiced, but perhaps more importantly, social interaction and self-perceptions have changed during this period (Gergen, 2000; Giddens, 1999). The world has truly become a global village. While people often feel increased empathy and connection with others all over the world, competitiveness—and endless comparing with the accomplishments and belonging of others—has also increased (Gottschalk, 2000; Robins, 1994).

Friedman characterizes globalization 3.0 as the “flattening of the world” (p. 44). Outsourced labor, virtual communities, and encyclopedic knowledge available to every person with access to the Internet create newfound power for individuals to both compete and collaborate without regard for previous hierarchies or the boundaries of nation-states. Friedman observes: “everywhere you turn, hierarchies are being challenged from below or transforming themselves from top-down structures into more horizontal and collaborative ones” (p. 45). While this shift contains many elements that are personally gratifying for individuals—for example, increased autonomy and expertise—the changes that have occurred have been rapid, disorienting, and often threatening to job security, and hence, social standing, in the economies where SSRIs are predominantly prescribed (Fee, 2000).

Job competition is no longer limited to the person in the next cubicle. Anyone in the world with access to a modem and a laptop who can do the same work counts as competition. As workers are increasingly seen as interchangeable, appearing likeable and confident have become desirable traits in the service-oriented marketplace where SSRIs are prescribed. Displaying a bright mood and social confidence, however, often contradicts deeper feelings of anxiety about job insecurity and the loss of social status (Beck, 2003; Mythen, 2004). When SSRIs “work” it may be the result of how they alter users’ reactions to an unstable marketplace, which like Gogol’s character Akakiy, increasingly feel inconsequential. SSRIs may also brighten the mood of users while lessening their reliance on others’ reactions for their self-esteem (Hewitt, Fraser & Berger, 2000). These drugs may also lessen feelings of shame and guilt associated with lost status as companies downsize and treat employees as expendable despite their loyalty and hard work.

In America and other nations, the flattening of the world has occurred along with the emergence of a corporatist model of government that Naomi Klein, in her book *The Shock Doctrine* (2007), characterizes as: “huge transfers of public wealth to private hands, often accompanied by exploding debt, an ever-widening chasm between the dazzling rich and the disposable poor and an aggressive nationalism that justifies bottomless spending on security” (p. 15). Signs of an emerging corporatist government in America include soaring debt; the highest incarceration level in the world; the loss of civil rights to increased surveillance due to the “war on terror”; the deterioration or complete loss of previous social services; and a widening gap between the rich and poor (Chaddock, 2003).

Income disparity between the rich and poor is particularly consequential for health. Large variations in wealth—and status—reduce social trust while increasing status-related stress. From 1990 to 2005, while CEOs' compensation increased nearly 300 percent, production workers wages gained a mere 4.3 percent (Domhoff, 2005). Furthermore, America has the greatest income disparity of all Westernized nations. One percent of the population controls forty percent of the wealth (Sapolsky, 2005). According to Sapolsky, the most important factors in reducing stress are creating opportunities for happiness and self-esteem, which come most powerfully from social connectedness—just the conditions that are lost when government is privatized and spending on needed social services is sharply diminished or completely eliminated (Klein, 2007; Sapolsky, 2005; Shwartz, 2007).

The rest of this article is devoted to making a connection between the increased diagnoses of depression and SSRI usage and the psychological impact of what de Botton (2004) refers to as status anxiety. Using an evolutionary explanation for depression called the *social competition hypothesis*, the rest of the article demonstrates that depression, rather than a pathology, can be seen as a type of emotional communication useful during times of rapid social change that involve transformations in status. However, in present alienated societies where SSRIs are largely taken, conditions are lacking for the ameliorative effects of depression to occur. Serotonin likely plays a role in depression; however, creating happiness may be a byproduct of its evolved function.

Serotonin and the Evolution of Depression

The typical explanation for how SSRIs work focuses on the release of serotonin in the synaptic gaps between neurons (Schloss & Williams, 1998). People who benefit from SSRIs are hypothesized to have less serotonin at this junction in the neuronal communication process. SSRIs are described as interfering with the reuptake of serotonin that naturally occurs during inter-neuronal communication, hence the name “selective serotonin reuptake inhibitor.” The brain is highly efficient when it comes to recycling neurotransmitters, which it regularly does through enzymes responsible for guiding neurotransmitters back into the neuron (Linden, 2007). The enzyme that selectively reuptakes serotonin is what SSRIs purportedly inhibits. It is this inhibitory effect on the central nervous system that is attributed with alleviating depression and generating feelings of contentment and happiness.

At present, there is no solid evidence to back this hypothesis for how SSRIs work (Healy, 2004). The average adult possesses only five to ten milligrams of serotonin in the entire body, ninety percent of which is found in the intestine (Glenmullen, 2004). Furthermore, the small amount of serotonin released in the synaptic gaps between neurons is impossible to measure. Only indirect evidence for the relationship between low levels of serotonin in the brain and depression is available (ScienceDaily, 2004).

Serotonin likely plays a role in depression, although perhaps not according to how SSRIs are marketed—or according to how depression is portrayed. Depression is typically described as involving depressed mood, disturbed sleep or appetite, low energy, and poor concentration (World Health Organization, 2007). Many of these symptoms correlate with well-known functions of serotonin in the human body: sleep-wake cycles, appetite, memory, learning, cardiovascular function, and the regulation of hormones.

However, another role of serotonin not typically associated with depression is the relationship between this neurotransmitter and changes in social status. This role of serotonin may be particularly relevant to the feelings of guilt and low self-worth that also accompany depression (Price, Sloman, Gardner, Gilbert & Rohde, 1994).

A relationship between social rank and serotonin levels has been witnessed in many animals, including Vervet monkeys, crayfish, and lobsters (Panksepp, Yue, Drerup & Huber, 2003). In Vervet monkeys, relatively low levels of serotonin are observed in low-ranking monkeys and in those who have recently lost status within their community. In contrast, high-ranking Vervet monkeys show relatively increased serotonin levels. Furthermore, the levels of serotonin found in high-ranking Vervet monkeys correlate with the amount of submission they receive from their community (Murphy, 2005).

Altering serotonin levels has also been shown to affect dominance-related behavior. For example, injecting subordinate crayfish with serotonin will delay their decision to retreat when they are fighting more dominant crayfish (Edwards, Issa & Herberholz, 2003; Panksepp et al., 2003). A similar observation was made in lobsters. When chronic fluoxetine treatment (the active chemical in Prozac) was given to lobsters, they would fight for longer than control subjects injected with a saline solution (Kravitz, 2000). In effect, they were able to compete longer in conditions that would otherwise signal it was time to retreat.

Could a similar relationship be occurring in the millions of users of SSRIs? Rather than simply increasing feelings of well being, are SSRIs actually lessening the affects of lost status, making it possible for people to continually ‘compete’ in a highly competitive globalized world? While this less discussed role of serotonin does not support the conventional explanation for why SSRIs work, it does support the social competition hypothesis, an evolutionary account of depression that argues depression results with a loss of status, and the symptoms typically associated with depression—depressed mood, loss of interest in pleasure, feelings of guilt or low self-worth—are really attempts to adjust to lower social standing (Price et al, 1994).

According to the social competition hypothesis, depression is not a psychopathological state, but rather an adaptive response that originally arose when humans lived in small, status-obsessed social groups of about the size and dynamics found in present-day hunter gatherer groups, or about 150 people (Clippinger, 2007). The social competition hypothesis asserts that when an individual in such societies lost status, it made adaptive sense to change previous behaviors and look for better ways to compete within the existing social structure. The hypothesis depicts depression as a marker for introspection, and signals time is needed for self-evaluation in light of recent social failure. Depression thus begins a period of rumination over social interactions—a characteristic of depression that continues today (Hewitt et al., 2000). From an evolutionary perspective, because of depression’s associated low energy and feelings of low self-worth, depression lessens the likelihood of aggressive actions that might prove harmful if the individual continually challenged persons of greater status and higher social standing. “Depression,” the authors state, “may be identified as a losing or de-escalating strategy” (Price et al., p. 309).

The social competition hypothesis is not without its critics. One major objection is that the hypothesis is a “mismatch explanation” for depression, which means depression may have been adaptive in a particular environment or social milieu, but is no longer

adaptive because of changes in the environment (Ness & Williams, 1995). Thus, depression might have been a useful adaptation to living in small communities when changes in behavior could lead to alterations in social standing and new opportunities, but it no longer is advantageous in our present globalized world. Philosopher Dominic Murphy (2005) makes this point:

If the mechanism [for depression] is set off by the realization that one is not even close to being the best at anything in the global village of the information age then getting depressed is not likely to be an effective reaction. For it is typically the case that there is no other strategy to adopt—no other niche one could fill—in which one would do much better in that global competition. (p. 754)

Murphy (2005), however, argues against the mismatch explanation of depression on the grounds that depression was never adaptive. According to Murphy, the social competition hypothesis demands that rumination is a beneficial action, yet he argues there is no evidence that, following an episode of depression, people typically change their lives. Murphy contends, on the contrary, depressed people typically engage in wishful thinking, avoidance, and escapism rather than dealing with difficulties by addressing problems. Murphy argues that while rumination over past social events may be a characteristic of depression, it typically occurs without the motivational affects or cognitive properties that he believes the social competition hypothesis requires. Furthermore, Murphy argues rumination intensifies isolation rather than increasing social interaction. He claims it also fails to lead to contentment about changes in social standing (pp. 754-755).

Murphy's objections are persuasive and support the point that the social competition hypothesis is a mismatch explanation for the adaptive benefits of depression. However, looking at the current context in which depression ceases to be adaptive is not sufficient evidence to claim depression has not been adaptive in other social conditions. The mismatch, rather than being a failure of the social competition hypothesis, highlights the failure of the current environment to meet emotional needs. In particular, increased social alienation coupled with increased competition—which characterizes the Western nations where SSRIs are taken—may result in depression losing its adaptive benefits.

The social competition hypothesis still has its limitations. While it explains depression in terms of its social benefits, it characterizes depression as a mental and behavioral strategy that contributes to the survival of less competitive members of society. Little attention is directed towards how depression is alleviated or how the out-competed person returns to active membership in the community.

In the following sections, depression is depicted as adaptive when it both communicates an emotional state and elicits a response from others. As the social competition hypothesis points out, we are highly sensitive to social ranking and other's evaluations of our status—this is as true today as it was when our ancestors began living in close-knit social groups nearly five million years ago. Reasons for why depression and SSRI usage recently increased may be found in this early period of human evolution.

The Evolution of Human Emotions

According to sociologist Jonathan H. Turner (2000), two important evolutionary developments set the stage for the eventual emergence of modern humans. The first was the development of a wide range of emotions in conjunction with the increased capacity for memory, which together contributed to increased sociality. The second was a fundamental tension between having to be part of a social group in order to survive while also needing to retain a sense of autonomy. The result, Turner recognizes, is “double-edged”:

We recognize emotional cues that signal associative tendencies, but at the same time we generally seek to avoid interpersonal immersion and, thereby, attempt to sustain autonomy of self and a certain interpersonal distance. Emotional bonds among humans are thus always in tension; they can burst apart rather easily or be difficult to forge in the first place. The fact that humans must use rituals in all interactions . . . attests to how hard we must work to keep the tie-formation going, lest it fall apart under inputs from the neuroanatomy that we still share with the African apes and our last common ancestor. (p. 23)

In his book *On The Origins of Human Emotions* (2000), Turner takes his readers deep in time to understand how these distinguishing traits of human ancestors, or hominids, emerged over five million years ago in response to the intense period of global warming that characterized the Miocene. During this geologic epoch, the wet rain forests began to recede and a new ecosystem emerged, the grasslands (or savannahs). Many species had to adapt to dryer climatic conditions or face extinction. Our ape-like ancestors were among this group (Malone, 1987).

Before the rain forests began to recede, various hominid species lived in the treetops high above the jungle floor. Primarily fruit eaters, they shared this habitat with their closest kin, the monkeys, who were also frugivores. However, when the rain forests began to recede, the monkeys and hominids became direct competitors, and all evidence suggests the monkeys won this battle for the survival of the fittest in the jungle canopies.

Several hypotheses have been made for why monkeys thrived while hominid numbers declined during this period. Most emphasize the physiological changes that occurred in monkeys. During this period, monkeys’ stomachs evolved to digest unripe fruit, extending the time they could forage (Andrews, 1996; Carroll, 2006). They also developed distinctive cusps for chewing tough fibers. Monkeys also have pouches for storing excess food, protecting them even further during times of scarcity (Temerin & Cant, 1983).

Turner attributes these changes with having an impact on the monkeys’ dominance in the arboreal environments, and adds to them the different social organization of monkeys and our ape ancestors. While monkeys were highly social creatures, hominids were largely autonomous. Monkeys retained social cohesiveness through the intergenerational matrilineal lines they sustained. The males would transfer out of the social group once they reached puberty while females would remain in close contact with their mothers and other female relatives. In contrast, both males and females of our ape ancestors at puberty left their original tribe. Furthermore, the matrilineal lines of monkeys could include up to four generations of females, resulting in highly extended

and supportive social groups. Thus, when it came to defending food sources, monkeys had a distinct advantage (Turner, 2000, p. 8).

On the open savannahs, hominid social organization posed a serious hazard. The grasslands were teeming with predators, and our autonomous ape ancestors made for relatively easy prey (Hart & Sussman, 2005). Large numbers of hominid species went extinct during the transition to life on the savannah, and Turner argues those who survived did so by developing stable and cohesive social groups. Others support Turner's thesis. According to research done by anthropologist Robert Sussman, "being hunted brought evolutionary pressure on our ancestors to cooperate and live in cohesive groups. That, more than aggression and warfare, is our evolutionary legacy" (Begley, 2007, p. 56).

Turner (2000) contends the few hominid species that survived the transition from jungle to grasslands evolved emotions that supported increased social cohesiveness. He hypothesizes that the increasing size of the neocortex witnessed in the evolution of hominids was the result of the need to tag a wide range of memories according to an elaborate emotional repertoire. Turner argues against the dominant view that claims advances in cognition led to modern human, stating "preadaptation had little to do with decision making per se, and much more to do with creating as many affective hooks as possible for forming relations among low-sociality primates" (p. 59).

Turner (2000) observes that early changes in the hominid brain structure that led to visual dominance were advantageous to nonlinguistic primates who could use this trait to read facial cues and body language. He claims, "body language is . . . perhaps the dominant feature of human interaction—more important for solidarity-producing interaction than spoken words" (p. 21). The dominance of body language continues today. Current studies of human communication show body language is often more influential than the content of a speech or the tone of a speaker's voice (Mehrabian, 2007).

Like Turner, the evolutionary biologist Robin Dunbar (1998) hypothesizes that increased neocortex size has to do with managing social relationships. According to Dunbar, a large neocortex could contribute to several characteristics associated with increased sociality, including: memorizing faces; remembering who has a relationship with whom; manipulating information about relationships; and processing emotional information, particularly with regards to recognizing and acting on cues about others' emotional states (p. 184).

While hominids were increasing their tendency for sociality, they also retained their ancestors' original propensity for weak ties and autonomy. Turner (2000) describes humans as "of two minds... one pushing us to use rituals to mobilize emotional energy, the other asserting the tendencies of our ape ancestors" (p. 45). The changes in the neocortex, rather than erasing propensities for autonomy, enhanced them through the emergence of a more pronounced sense of self. Furthermore, this pronounced sense of self became a central component in the creation of strong emotional ties.

Having a pronounced sense of self gave low-sociality hominids the capacity to identify the self in relations to others. This skill provides a measure of control over emotions and an awareness of how others might interpret one's emotional expressions. A pronounced sense of self also supports the capacity to recognize others have minds, or the development of what is commonly referred to as a "theory of mind" (Allman, 1994; Klin,

Jones, Schultz, Volkmar & Cohen, 2002; Waal, 2005). Having a theory of mind enables the individual with a pronounced sense of self to imagine what others may be thinking and feeling, including what others may be thinking and feeling about him or her.

When the self is perceived as a significant object, the feelings and thoughts of others attributed to the self gain power and can be used to sanction behavior (Bruner, 2002; Erikson, 1974). Positive emotions such as pride contribute to social cohesion when individuals look to others for verification of self-worth, while feelings such as shame and guilt act as negative sanctions when one fails to meet others' expectations (Harris, 2006; Turner, 2000). Together, pride, shame, and guilt play a significant role in the quest for status (De Botton, 2004).

What does the evolution of human emotions have to do with depression and SSRIs? It may be the selection forces that led to a more social hominid are what SSRIs are mediating in rapidly changing societies where competition is rampant and social alienation has become the norm. Depression likely does not carry the same meaning today as it once did when humans were highly dependent on one another for their literal survival. Whereas depression may have once communicated the impact of lost status and elicited support—especially from others who shared lower social standing—today it more likely communicates failure to live up to social norms for being a successful person, thereby leading to further social isolation. Hewitt et al. (2000) observe in their article “Is it Me or Is It Prozac?”:

Depressed mood, lack of interest in or the motivation to undertake ordinary activities, and lowered self-esteem are not only among the significant symptoms of depression but also serious indicators of failure to meet the expectations of contemporary American culture. (p. 174)

Relaying high self-esteem may be a requirement for living successfully in the present globalized world. Turner's theory of emotions implies that one of the best ways of retaining high levels of self-esteem is to become less dependent on others' emotional cues for defining one's sense of self. Hewitt et al. (2000) argue that this is precisely what SSRIs like Prozac do: “it reduces sensitivity to evaluations of all kinds, in effect making the person less dependent on others for the maintenance of self-esteem” (p. 169).

People frequently comment on SSRIs' effect on self-esteem, particularly with regard to feeling at ease in social situations (Cronkite, 1994; Kramer, 1993). When taking SSRIs, people often find themselves less dependent on the approval or acceptance of others, and are less likely to define the actions of others as rejecting. Karen Propp, a writer from Cambridge, Massachusetts gave the following description of SSRIs' impact: “Before I was on medication, if I had to do something tough, like make a difficult call for work, I used to assume the person wouldn't want to talk to me. Now, my attitude is just, OK, I can do this” (Case, 2002).

Hewitt et al. (2000) argue the reason Prozac and the other SSRIs work is because they lessen the extreme social sensitivity that characterizes depression. Depressed individuals are keenly attuned to the social world and often interpret much this is random or unintentional in others' actions as having significance. Hewitt et al. refer to this attitude as “morbid sensitivity,” and associate it with the tendency in depressed people to perceive others' gestures as rejecting (p. 165). Morbid sensitivity contributes to feelings

of low self-esteem, increasing the likelihood that the depressed person will further isolate herself from social interactions.

Hewitt et al. (2000) support their explanation of why Prozac works with a social psychological perspective of self-esteem that portrays self-esteem as enhanced, sustained, or undermined when a person interprets others' words, actions, and emotional responses as estimations of his self-worth (p. 167). This perspective of self-esteem originates with George Herbert Mead's notion of *role-taking* in which the gestures emitted by others are used to assume their perspectives towards one's self. Using Mead's conception of role-taking, Hewitt et al. argue SSRIs like Prozac works by altering role-taking. However, rather than making role-taking more accurate, they believe Prozac works by making it more benign: "the role-taker on Prozac seems more willing or able to attribute positive motivations or attitudes to the other, and hence to imagine the self in a more positive light" (p. 168).

Turner (2000) also emphasizes the significance of role-taking in the evolution of human emotions. He posits it was this ability that led to emotions gaining significance as a method for creating solidarity around mutual interpretations, moods, and feelings. Turner states: "George Herbert Mead's (1934) concept of role-taking captures the essence of how selection was channeled: significant symbols or gestures emitted by others are used by individuals to assume their perspective in order to better coordinate their actions." Turner also added to Mead's conception of role-taking R. H. Turner's (1962) idea of *role-making* to give a comprehensive account of how solitary hominids learned how to be social beings. Role-making, J.H. Turner states, occurs when "gestures emitted by an individual consciously and unconsciously signal to others a line of conduct, as well as dispositions and moods associated with this conduct" (Turner, 2000, 46). Through role-making, gestures would become a visible sign to others that an individual is depressed.

By suspending the effects of role-taking on self-esteem, SSRIs may work by causing depression to lose its capacity to indicate to the individual the need to retreat in the face of disheartening levels of competition. By truncating role-making and the production of gestures that indicate depression, SSRI usage may also alter depression's ability to relay the need for social support to overcome feelings of shame and guilt for failing to meet perceived social norms for success. Thus, without any discernable changes in relationships or a significant re-evaluation of the self, SSRIs enable the depressed person to resume social activities. The adaptive function of depression put forth by the social competition hypothesis is thus lost when SSRIs are used to alleviate depression.

Conclusion

Depression likely emerged in tight-knit social groups dependent on role-taking and role-making for creating social cohesion. In these conditions, depression would relay to others that negative sanction emotions such as shame and guilt were too profound for the individual to maintain relationships. Depression could communicate the need for social support, thereby pointing to another adaptive human trait—our capacity for empathy and compassion—that has also significantly contributed to human survival (Rizzolatti & Craighero, 2004; Rizzolatti et al., 2006). When perceived in this context, depression can be seen as an adaptive behavior that contributes to an individual's survival by increasing

sociality in conditions where the propensity for autonomy and weak social ties holds sway. Through depression and the responses it elicited, individuals may have been more likely to rejoin communities despite the tendency to isolate that this mood engenders.

In contrast, two traits of Western societies where SSRIs are predominantly prescribed are lack of supportive communities and increased emotional detachment. Rather than supporting social cohesion in such communities, SSRI usage encourages humans' tendency towards autonomy and weak social ties. Opportunities to deepen relationships or develop new relationships in light of changes in status are lost.

Furthermore, with increased SSRI usage, the alienation that plagues the countries where they are largely prescribed is not challenged, but rather becomes the unstated condition for the success of this class of drugs. Sociologist David Karp observes: "in the present era, alienation refers to a psychological condition in which people are unable to locate a clear conception of self. . . . In the context of such alienation, the 'therapeutic state' has triumphed" (1996, p. 174). The SSRIs may lessen the impact of social alienation for many people, but the profound discrepancies in socioeconomic status that aggravate status anxiety continue—and hence the need for more prescriptions of SSRIs. Furthermore, opportunities for developing needed social support and services that might reduce the effects of status anxiety are not pursued. Thus, medications like SSRI do not make the world better, just more bearable. Sadly, the status anxiety that is aggravated by extreme differences in wealth continues to plague humankind, much as Gogol portrayed Akaiky's life over 150 years ago.

References

- Allman, W. F. (1994). *The stone age present: How evolution has shaped modern life—from sex, violence, and language to emotions, morals, and communities*. New York: Simon & Schuster.
- Andrews, P. (1996). Palaeoecology and hominoid palaeoenvironments. *Biological Review*, 71, 257-300.
- Beck, U., Bonss, W., & Lau, C. (2003). The theory of reflexive modernization: Problematic, hypotheses and research programme. *Theory, Culture & Society*, 20(2), 1-33.
- Begley, S. (2007, March 19). Beyond stones & bones. *Newsweek*, p. 53.
- Black, A., Hopkins, J. (2003). The great depression. *Teaching Eleanor Roosevelt*. Retrieved November 27, 2007, from <http://www.nps.gov/archive/elro/glossary/great-depression.htm>.
- Breggin, P. (2004). *Violence induced by psychiatric medications: Cases, questions, and contradictions*. Paper presented at the 8th Annual Conference of the International Center for the Study of Psychiatry and Psychology. New York City, New York.
- Bruner, J. (2002). *Making stories: Law, literature, life*. New York: Farrar, Straus and Giroux.
- Carroll, S. B. (2006). *The making of the fittest: DNA and the ultimate forensic record of evolution*. New York: W. W. Norton & Company.
- Case, N. (2002, January). Are we happy yet? *Self Magazine*, p. 98.
- Chaddock, G. R. (2003, August 18). US notches world's highest incarceration rate. *The Christian Science Monitor*.
- Clippinger, J. H. (2007). *A crowd of one: The future of individual identity*. New York: Public Affairs.
- Cronkite, K. (1994). *On the edge of darkness*. New York: Delta Publishing.
- De Botton, A. (2004). *Status anxiety*. New York City: Pantheon Books.
- Davidson, J. R. T. (2003). Effective management strategies for posttraumatic stress disorder. *Focus*, 1(3), 239-243.
- Domhoff, G. W. (2005, December 2006). Wealth, income, power. Retrieved November

- 27, 2007, from <http://sociology.ucsc.edu/whorulesamerica/power/wealth.html>.
- Dunbar, R. (1998). The social brain hypothesis. *Evolutionary Anthropology*, 6(5), 178-190.
- Edwards, D. H., Issa, F. A., & Herberhoz, J. (2003). The neural basis of dominance hierarchy formation in crayfish. *Microscopy Research and Technique*, 60, 369-376.
- Erikson, E. H. (1974). *Dimensions of a new identity: The 1973 Jefferson lectures in the humanities*. New York: W. W. Norton & Company, Inc.
- Fee, D. (2000). The broken dialogue: Mental illness as discourse and experience. In D. Fee (Ed.), *Pathology and the postmodern: Mental illness as discourse and experience* (pp. 1-17). London: Sage Publications.
- Friedman, T. L. (2005). *The world is flat: A brief history of the twenty-first century*. New York: Farrar, Straus and Giroux.
- Gergen, K. J. (2000). The self: transfiguration by technology. In D. Fee (Ed.), *Pathology and the postmodern: Mental illness as discourse and experience* (pp. 100-115). London: Sage Publications.
- Giddens, A. (1999). BBC Reith lectures 1999: Runaway world with Anthony Giddens as lecturer. Retrieved November 27, 2007, from http://news.bbc.co.uk/hi/english/static/events/reith_99/.
- Glenmullen, J. (2004). *A critique of the medical/biological of psychiatry*. Paper presented at the 8th Annual Conference of the International Center for the Study of Psychiatry and Psychology, New York City, New York.
- Gogol, N. (1998). *The collected tales of Nikolai Gogol*. New York: Pantheon Books.
- Gottschalk, S. (2000). Escape from insanity: 'Mental disorder' in the postmodern moment. In D. Fee (Ed.), *Pathology and the postmodern: Mental illness as discourse and experience* (pp. 18-48). London: Sage Publications.
- Harris, C. R. (2006, November-December). Embarrassment: A form of social pain. *American Scientist*, 94, 524-533.
- Hart, D., & Sussman, R. W. (2005). *Man the hunted: Primates, predators, and human evolution*. Boulder, CO: Westview Press.
- Healy, D. (2004). *Let them eat prozac: The unhealthy relationship between the pharmaceutical industry and depression*. New York: New York University Press.

- Hewitt, J. P., Fraser, M. R., & Berger, L. (2000). Is it me or is it prozac? Antidepressants and the construction of self. In D. Fee (Ed.), *Pathology and the postmodern: Mental illness as discourse and experience* (pp. 163-185). London: Sage Publications.
- Hollon, M. F. (2005). Direct-to-consumer advertising: A haphazard approach to health promotion. *JAMA*, 293(16), 2030-2033.
- Horwitz, A. V., Wakefield, J. C., & Spitzer, R. L. (2007). *The loss of sadness: How psychiatry transformed normal sorrow into depressive disorder*. New York: Oxford University Press.
- Kaplan, A., & Hollander, E. (2004). A review of pharmacologic treatments for obsessive-compulsive disorder. *Focus*, 2, 454-461.
- Karp, D. A. (1996). *Speaking of sadness*. New York: Oxford University Press.
- Klein, N. (2007). *The shock doctrine*. New York: Metropolitan Books.
- Klin, A., Jones, W., Schultz, R., Volkmar, F., & Cohen, D. (2002). Defining and quantifying the social phenotype in autism. *Am J Psychiatry*, 159, 895-908.
- Kramer, P. D. (1993). *Listening to prozac*. New York: Penguin Books.
- Kravitz, E. A. (2000). Serotonin and aggression: insights gained from a lobster model system and speculations on the role of amine neurons in a complex behavior. *J Comp Physiol A*, 186, 221-238.
- Kravitz, R. L., Epstein, R. M., Feldman, M. D., Franz, C. E., Azari, R., Hinton, L., et al. (2005). Influence of patients' requests for direct-to-consumer advertised antidepressants. *JAMA*, 293(16), 1995-2002.
- Lacasse, J. R., & Leo, J. (2005). Serotonin and depression: A disconnect between the advertisements and the Scientific Literature [Electronic Version]. *PLoS Medicine*, 2, 1211-1216. Retrieved November 27, 2007, from <http://medicine.plosjournals.org/perlserv/?request=getdocument&doi=10.1371/journal.pmed.0020392&ct=1&SESSID=116fa89920873a8b35e97ae1aff8687d>.
- Linden, D. J. (2007). *The accidental mind: How brain evolution has given us love, memory, dreams, and god*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Malone, D. (1987). Mechanisms of hominoid dispersal in miocene East Africa. *Journal of Human Evolution*, 16, 469-481.
- Marmot, M. (2004). *Status syndrome: How your social standing directly affects your*

- health and life expectancy*. New York: Bloomsbury & Henry Holt.
- McElroy, S. L., Casuto, L. S., Lake, K. A., Soutullo, C. A., Keck, P. E., & Hudson, J. I. (2000). Placebo-controlled trial of sertraline in the treatment of binge eating disorder. *Am J Psychiatry*, *157*, 1004-1006.
- McManus, P., Mant, A., Mitchell, P. B., Montgomery, W. S., Marley, J., & Auland, M. E. (2000). Recent trends in the use of antidepressant drugs in Australia. *The Medical Journal of Australia*, *173*, 458-461.
- Mehrabian, A. (2007). *Nonverbal communication*. Edison, NJ: Transaction Publishers.
- Moore, A. (2007). Eternal sunshine. *The Guardian*. Retrieved June 5, 2007, from <http://www.guardian.co.uk/print/0,,329819920-110418,00.html>.
- Murphy, D. (2005). Can evolution explain insanity? *Biology and Philosophy*, *20*, 745-766.
- Mythen, G. (2004). *Ulrich Beck: A critical introduction to risk society*. London: Pluto Press.
- Narita, K., Murata, T., Takahashi, T., Kosaka, H., Omata, N., & Wada, Y. (2006). Plasma levels of adiponectin and tumor necrosis factor-alpha in patients with remitted major depression receiving long-term maintenance antidepressant therapy. *Neuro-Psychopharmacology & Biological Psychiatry*, *30*, 1159-1162.
- National Center for Health Statistics (2004, October 6). Almost half of Americans use at least one prescription drug annual report on nation's health shows. Retrieved November 27, 2007, from <http://www.cdc.gov/nchs/pressroom/04news/hus04.htm>.
- National Institute of Mental Health (2007). The numbers count: Mental disorders in America. Retrieved November 27, 2007, from <http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america.shtml>.
- Nesse, R. M., & Williams, G. C. (1995). *Why we get sick*. New York City: New York Times Books.
- Panksepp, J. B., Yue, Z., Drerup, C., & Huber, R. (2003). Amine neurochemistry and aggression in crayfish. *Microscopy Research and Technique*, *60*, 360-368.
- Pettus, A. (2006, July - August). Psychiatry by prescription. *Harvard Magazine*, p. 37.
- Price, J., Sloman, L., Gardner, R., Gilbert, P., & Rohde, P. (1994). The social competition hypothesis of depression. *Br J Psychiatry*, *164*, 309-315.

- Rinne, T., Brink, W. V. D., Wouters, L., & Dyck, R. V. (2002). SSRI treatment of borderline personality disorder: A randomized, placebo-controlled clinical trial for female patients with borderline personality disorder. *Am J Psychiatry*, *159*, 2048-2054.
- Rizzolatti, G., & Craighero, L. (2004). The mirror-neuron system. *Annual Review of Neuroscience*, *27*, 169-192.
- Rizzolatti, G., Fogassi, L., & Gallese, V. (2006, November). Mirrors in the mind. *Scientific American*, 54-61.
- Robins, K. (1994). Forces of consumption from the symbolic to the psychotic. *Media, Culture & Society*, *16*, 449-468.
- Roca, C. A., Schmidt, P. J., Smith, M. J., Danaceau, M. A., Murphy, D. L., & Rubinow, D. R. (2002). Effects of metergoline on symptoms in women with premenstrual dysphoric disorder. *Am J Psychiatry*, *159*, 1876-1881.
- Sapolsky, R. (2005, December). Sick of poverty. *Scientific American* 93-99.
- Schloss, P., & Williams, D. (1998). The serotonin transporter: a primary target for antidepressant drugs. *J Psychopharmacol*, *12*(2), 115-121.
- Shwartz, M. (2007). Robert Sapolsky discusses physiological effects of stress. *Stanford Report*. Retrieved March 29, 2007, from <http://newsservice.stanford.edu/news/2007/march7/sapolskysr-030707.html>.
- Singh-Manoux, A., Adler, N. E., & Marmot, M. G. (2003). Subjective social status: its determinants and its association with measures of ill-health in the whitehall II study. *Social Science & Medicine*, *56*, 1321-1333.
- Swiatek, J. (2001). Prozac's profitable run coming to an end for Lilly. *The Indianapolis Star*. Retrieved June 6, 2007, from http://www2.indystar.com/library/factfiles/business/companies/lilly/stories/2001_0802.html.
- Temerin, L. A., & Cant, J. G. H. (1983). The evolutionary divergence of old world monkeys and apes. *The American Naturalist*, *122*(3), 335-351.
- Turner, J. H. (2000). *On the origins of human emotions*. Stanford: Stanford University Press.
- ScienceDaily (September 10, 2004). Serotonin metabolites in mollusks suggest pathways for human therapies. Retrieved December 1, 2007, from <http://www.sciencedaily.com/releases/2004/09/040910080324.htm>.
- Waal, F. d. (2005). *Our inner ape*. New York: Riverhead Books.

Wakefield, J. C., Schmitz, M. F., First, M. B., & Horwitz, A. V. (2007). Extending the bereavement exclusion for major depression to other losses: Evidence from the national comorbidity survey. *Arch Gen Psychiatry*, 64(April), 433-440.

Whooley, M. A. (2006). Depression and cardiovascular disease. *JAMA*, 295(24), 2874-2881.

World Health Organization (2007). Depression. Retrieved November 12, 2007, from http://www.who.int/mental_health/management/depression/definition/en/print.html.

WNET/Thirteen. (2007). The dying fields. *Wide Angle*: PBS. Retrieved November 12, 2007, from <http://www.pbs.org/wnet/wideangle/shows/vidarbha/index.html>.