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Steve Sussman on Matilda Hellman’s “Mind the Gap! Failure in Understanding Key Dimensions of an Addicted Drug User’s Life”:

Addictive Effects

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Abstract

“Addictive effects” are experiential states sought by individuals that underlie addictive behaviors. Consistent with ideas that addictive effects mimic satiation of appetitive motives, a literature search-derived heuristic catalogue of addictive behaviors is offered and contrasted across four general appetitive-like motives that have been posited as underlying addictive behaviors (dominance, submissiveness, self-pleasure, and nurturance). I suggest, in part, that addictive behaviors are misdirected attempts to satisfy appetitive motives.

Keywords

addictive effects; appetitive motives; appetitive function; addictive behavior catalogue

It remains unclear in the research literature what entity might underlie “addictive effects.” There is some consensus that addictive effects share in common a function to shift subjective experience of self (Larkin, Wood, & Griffiths, 2006). This shift appears to consist of specific types. Subjective reports of such experiential shifts include affect enhancement, arousal enhancement, sedation, cognitive fantasy, or sense of oblivion, as main examples (Schneider & Irons, 2001; Sussman & Sussman, 2011). There may be differential functions associated with those subjective reports. Possibly manipulation of a subjective sense of satiating various bodily needs (“appetitive” effects) may underlie which behaviors may become addictive (Foddy & Savulescu, 2010a, 2010b; Goodman, 1990; Hatterer, 1982; Jacobs, 1986; Newlin, 2002). More precisely, the immediate effect of the behavior may lead one to feel *as if* some bodily need has been satisfied. Also, as part of an addictive effect, some period of time may occur in which cravings/urges are not operative (Foddy & Savulescu, 2010a, 2010b; Marks, 1990; Orford, 2001); one may experience a temporary

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Declaration of Interest

The author reports no conflicts of interest. The author alone is responsible for the content and writing of the article.

sense of physiological fulfillment of the appetitive “need.” During this generally brief period, one may feel self-sufficient or nurtured (Hirschman, 1992; Pearson & Little, 1969). Importantly, an addictive effect appears to involve repeated experiences that elicit eventually a pathological relationship with an appetitive behavior (Schneider & Irons, 2001; Sussman & Sussman, 2011).

Many behaviors may come to serve an appetitive function (e.g., eating behavior), but not all such behaviors qualify as an addictive behavior (e.g., eating an occasional large meal versus binge eating). What differentiates an addictive behavior from a nonaddictive behavior may, at least in part, be a function of the way in which the behavior is expressed. That is, with an addictive behavior, over time, persons may become preoccupied with the behavior, exhibit a loss of control over the behavior, and suffer negative life consequences as a result (Sussman, Lisha, & Griffiths, 2011; Sussman & Sussman, 2011). One may ponder what leads to dysregulation of an appetitive behavior. From an evolutionary perspective, instead of engaging in extensive “work” to satisfy an appetitive motive (e.g., hunting for food, growing one’s own food), the motive may be satisfied too easily and quickly, possibly leading, for some people, to repeated cycles of attempting to satiate the motive with diminishing success, resulting in dysregulation (Koob & LeMoal, 2001; Robinson & Berridge, 2000; Sussman, Reynaud, Aubin & Leventhal, 2011).

Early psychological theorizing suggested that humans experienced innate or acquired instincts in need of satiation, including fear, anger, shyness and sociability, curiosity and secretiveness, acquisitiveness (desire to possess) and rivalry, jealousy and envy, affection, sexual love, parental love (nurturance), play, imitation, and constructiveness (Alcoholics Anonymous, 1976; Angell, 1908). More recent evolutionary theories of human behavior have asserted that adaptation attributes such as self-perceived survival ability and reproductive fitness are reflected biologically in the operations of the mesolimbic dopaminergic system and, hence, are subject to “hijacking” by addictive behaviors, which will induce subjective increases in experience of these attributes (Blum et al., 2012; Newlin, 2002). Addictive behaviors may provide a misleading sense of neurobiological fitness through induction of positive emotional feelings and modulation of arousal (new opportunities associated with increases in arousal, or security or serenity associated with decreases in arousal), which (may falsely) signal biological fitness (Panksepp, Knutson, & Burgdorf, 2002).

Neurobiological-sociocultural theories of ill-health note that, as persons are able to situate in one location and fulfill easily needs for food, shelter, and protection, sedentary habits may accumulate (Fave, Massimini, & Bassi, 2011, p. 25), indicating a competition between cultural and biological fitness. It is possible that persons may exhibit behaviors so as to help them feel *as if* they are grappling to satiate appetitive needs (Newlin, 2002), in a context that does not provide the arena for application of physiological work to satiate those needs (Blum et al., 2012). It is in this way that numerous addictions may operate and reflect a problem of lifestyle (Sussman, Lisha, & Griffiths, 2011). Certain individuals adapt well to technologically enhanced, sedentary-promoting lifestyles; others do not (Blum et al., 2012). Possibly, up to 50% of a society does not adapt that well—and the resulting patterns of dysregulated behavior that occur may become labeled as addictions (Bechara, 2005;

Griffiths & Larkin, 2004; Hatterer, 1982; Holden, 2001; Kourosh, Harrington, & Adinoff, 2010; Marks, 1990; Orford, 2001; Sussman, Lisha, & Griffiths, 2011).

There are many behaviors that could be experienced as appetitive and become manifested as addictive in expression. Popularly discussed behaviors include tobacco, alcohol, and other drug misuse; binge overeating; shopping; Internet use (e.g., online gaming); love and sex; workaholism; exercise; and gambling (Sussman, Lisha, & Griffiths, 2011). However, there are many additional behaviors that might become addictive. An example of a seldom-studied addictive behavior is tanning (Kourosh et al., 2010). Tanning-related behaviors include mirror checking, grooming, picking skin, and UV exposure periods that may be experienced as a rush. Tanning often involves use of salons and timers, and the experience may involve primarily sensory processing. Tanning may be a means to attempt to make oneself more socially dominant, one type of appetitive motive, through attempting to increase one's physical attractiveness. Further, UV exposure may lead to release of beta-endorphin and serotonin, as well as being a source of Vitamin D, which could be interpreted as fulfilling pleasure and self-nurturance motives. In the next section of this paper, I use a literature search to generate a catalogue of addictions and attempt to place them in a typology of appetitive experience.

Speculation: A Catalogue of Addictions

To generate a (reasonably) exhaustive list of addictions, I engaged in an electronic search focusing on different types of addictions indicated on different Web sites. I used the key words "types of addictions," "types of addiction," "addictions list," and "addiction list" (June 5, 2012), which revealed 113,000, 508,000, 13,800, and 17,600 pages, respectively, in Google (I examined the first 100 in the list for each set of keywords); 462, 787, 4, and 51 pages in Google Scholar (I examined the first 200 pages in the list for each set of keywords); 11, 17, 0, and 0 pages in OVID Medline (1946 to June, week 2, 2012); and 13, 47, 0, and 0 pages in PSYCInfo. Most Web sites or articles focused on one or two types of common addictions. However, there were some Web sites and articles that addressed three or more types of addictions (e.g., <http://www.addictionz.com/addictions.htm>: 131 types of addictions are suggested, last accessed June 30, 2012; <http://www.healthyplace.com/addictions/addictions-information/types-of-addiction-list-of-addictions/>: 26 types of addictions are suggested, last accessed June 30, 2012). In a couple of cases, a unique type of addiction was mentioned only or primarily in that source (e.g., regarding plastic surgery addiction: <http://www.ranker.com/list/12-biggest-plastic-surgery-addicts/>, last accessed June 30, 2012).

I merged specific addictive behaviors together (e.g., there were many types of "hard drug" use categories). After this merging, I calculated 65 different specific addictions. To permit an even more digestible set of addictions, albeit as a tentative heuristic, I grouped these "subcategories" into 16 more general categories (e.g., similarly to what was found by Cook, 1987) as follows:

1. Drugs: caffeine, tobacco, alcohol, marijuana, various other illicit/hard drugs (e.g., prescription, amphetamines, opioids, cocaine, XTC) [5 subcategories];

2. Food-related: binge eating, use of diuretics, carbohydrates, hot peppers, fat, chocolate, ice, “inedible objects” (e.g., dirt, toilet paper, chalk, household cleanser, gasoline, tape) [8 subcategories];
3. Compulsive antisocial behavior (violence): compulsive aggression, compulsive stealing, compulsive fire setting [3 subcategories];
4. Technology/communications-related: Internet browsing, SNS (social networking sites), texting, online and offline videogames, television [5 categories];
5. Gambling;
6. Working;
7. Social group-related: sex, love, platonic relationships, codependence (people-pleasing, hiding behind others), being “cool,” attention/applause, compulsive helping, maintaining authority/control [8 subcategories];
8. Physical attractiveness: tanning (tanorexia), teeth whitening, make-up, cosmetic surgery [4 subcategories];
9. Fantasizing: imagination, isolation, laziness (i.e., underachieving, being sedentary) [3 subcategories];
10. Exercise-related: aerobics, body building [2 subcategories];
11. Spiritual obsession: occult, religion, self-help programs, treatment seeking [4 subcategories];
12. Pain seeking: cutting, self-mutilation, skin picking, trichotillomania (hair pulling), scab picking [5 subcategories];
13. Shopping;
14. Thrill/adventure seeking: auto-racing, cruising, dangerous sports, thrills (compulsive sky diving, riding roller coasters) [4 subcategories];
15. Hoarding: anime/comics/cards, small collectables, rocks, puppets, coins, junk, trivia, technology objects [8 subcategories];
16. Voyeurism: celebrity or other idolization, gossiping, attending funerals [3 subcategories].

One may speculate that different categories of addictions are associated with different neurobiological motivations (e.g., Greenberg, Lewis, & Dodd, 1999; Rozin & Stoess, 1993; Sussman et al., 2011). Thus, I considered how these 16 addictive behavior categories might operate from an appetitive motives’ perspective. I examined four types of motives in the addictions research literature that might apply. Work with the PROMIS questionnaire (www.s-p-q.com; last accessed July 1, 2012; Haylett, Stephenson, & Lefever, 2004; MacLaren & Best, 2010) has revealed at least two general factors associated with different addictive behaviors, “hedonist” types (illegal drugs, tobacco, prescription drugs, gambling, compulsive sex, alcohol, and caffeine) and “nurturant” types (compulsive helping, work, relationships, shopping, eating behaviors, and exercise). Hedonist-type addictions appear to

focus on immediate pleasure, whereas nurturant-type addictions appear to focus on personal fulfillment.

Haylett and colleagues (2004), though not MacLaren and Best (2010), also found some support for dominance and submissive-related factors, possibly nested within hedonist and nurturant factors. Other literature also has focused on addictions as reflecting fight (e.g., dominance, power) or flight (e.g., retreat into fantasy, submission) motives (Blum et al., 2012; Goeders, 2004; Newline, 2002; Rawson & Condon, 2007; Sunderwirth & Milkman, 1991), related to limbic system-based reward, or stimulation of the hypothalamic–pituitary–adrenal axis (HPA).

As a heuristic exercise, I crossed the 16 addictive behavior categories with four motives, as is depicted in Table 1. I placed each of the 16 behavior categories into pairs of motives, with the assumption that multiple motives operate for any given addictive behavior (e.g., Haylett et al., 2004). There are six possible pairs of the four motives within which the behaviors could be placed. However, “dominance” and “submissive” would not be a plausible combination as they describe polar opposite motivations. Thus, I attempted to place each behavior into the five remaining combinations of appetitive motivation pairs (see Table 1). Avoidance/submissive-pleasure/hedonist behaviors included drug use and pain seeking. Dominance-hedonist behaviors included compulsive violence and adventure thrills. Hedonist-nurturance behaviors included food intake, compulsive use of technology, gambling, social-related (e.g., love, sex), exercise, shopping, and hoarding. Dominance-nurturance behaviors included workaholicism, physical attractiveness seeking, and compulsive voyeurism. Submissive-nurturance behaviors included spiritual obsession and fantasizing.

Implications

These 16 addictive behavior categories likely represent a vast majority of types of addictions located in the literature, as they were derived from a relatively extensive electronic literature review. Each of these behaviors by definition may exhibit dysregulation features, including repetitive, erratically experienced, phenomenological changes in appetitive motivation that bypasses deliberate processing of information (Sussman et al., 2011). The appetitive motives for which these behaviors may subjectively satiate include achieving a satisfying or pleasurable state (or novelty), nurturance (of self or others), dominance (feeling powerful), or submission (conformity, fitting in to a “pecking” order; e.g., Haylett et al., 2004). I perceived that all 16 behavior categories might be described by one of five appetitive motive combinations. One could withdraw (submission, flight) and feel satisfied/pleasure. Arousal reduction/sedation might be among subjective effects reported. One could dominate and feel pleasure. Subjective effects might include experience of peak moments or arousal enhancement. One could achieve both pleasure and nurturance, subjectively feeling very deeply satisfied perhaps. One could dominate and feel nurturance (maybe feeling self-contained). Finally, one could withdraw and feel nurturance (fantasy). It is hoped that this paper provides additional insight into potential mechanisms underlying phenomenological addictive experiences. However, much empirical research is needed to truly make inroads and integrate addictive behavior experiences with neurobiologically plausible appetitive

processes (Stacy, Ames, & Knowlton, 2004). Treatment implications of this work may include lifestyle changes to encourage more use of working memory to satiate appetitive needs (Stacy et al., 2004), safe or “better directed” alternatives to satiation of subjective appetitive needs (e.g., Alcoholic Anonymous, 1976), or possibly learning to accept the inevitability of feeling a sense of “wanting” as a side effect of modern living.

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Biography



Steve Sussman, Ph.D., F.A.A.H.B., F.A.P.A., received his doctorate in social-clinical psychology from the University of Illinois at Chicago in 1984. He is a professor of preventive medicine and psychology at the University of Southern California (USC), and he has been at USC for 27 years. He studies etiology, prevention, and cessation within the addictions arena, broadly defined. He has over 385 publications. His programs include Project Towards No Tobacco Use, Project Towards No Drug Abuse, and Project EX, which are considered model programs at numerous agencies (i.e., CDC, NIDA, NCI, OJJDP,

SAMSHA, CSAP, Colorado and Maryland Blueprints, Health Canada, US Department of Energy, and various State Departments of Education). He received the honor of Research Laureate for the American Academy of Health Behavior in 2005, and was also the President there (2007–2008). Also, as of 2007, he received the honor of Fellow of the American Psychological Association (Division 50, Addictions). He is the current editor of *Evaluation & the Health Professions* (SAGE Publications).

TABLE 1

List of Addictions by Motives

Addiction	Appetitive Motives			
	Dominance	Avoidance/submissive	Pleasure/hedonist	Nurturance
Drug intake		X	X	
Food intake			X	X
Compulsive antisocial behavior (violence)	X		X	
Technology/communications-related			X	X
Gambling			X	X
Working	X			X
Social group-related			X	X
Physical attractiveness seeking	X			X
Exercise			X	X
Spiritual obsession		X		X
Pain seeking		X	X	
Shopping			X	X
Adventure thrills	X		X	
Hoarding			X	X
Fantasizing		X		X
Voyeurism	X			X

Note. This listing is a heuristic device and must be interpreted with caution; empirical studies are needed.