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ARTICLE

Maladaptive Daydreaming: Ontological Analysis, Treatment Rationale; a Pilot Case Report

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This paper describes the course of psychotherapeutic treatment of a 25-year-old man presenting with maladaptive daydreaming (MD), from analysis of the underlying rationale through the treatment process to the outcomes. MD, a condition marked by highly absorptive daydreaming, consumed many hours of his day and produced distress, dysfunction, and excessive Internet use. Ontological analysis resulted in classifying MD characteristics under several categories: as a dissociative disorder of absorption, as a behavioral addiction, and as an obsessive-compulsive spectrum disorder producing significant attention deficits. The therapy plan was derived from evidence-based treatment modalities for conditions elucidated in the ontological analysis and included cognitive behavioral interventions as well as mindfulness meditation. Therapy was provided for a predetermined period of six months. MD and relevant indices were measured before and after therapy, as well as at a two-month follow-up. The data show that the client was able to reduce his daydreaming time by over 50% and his time spent on the Internet by over 70%. He reported an improvement of over 70% in his work and social adjustment. Nevertheless, his maladaptive daydreaming scale score and his self-assessed pleasure derived from daydreaming showed more modest gains. I discuss this discrepancy and suggest future research directions.

KEYWORDS *maladaptive daydreaming; absorption; psychotherapy; case study*

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In this paper I describe the rationale, process and outcome of psychotherapy for maladaptive daydreaming (MD). MD is a newly identified disorder marked by absorption in fantasy. In some cases, this condition seems to evolve into psychological dependence that is manifested in the compulsion to daydream extensively, sometimes for several hours every day, causing distress and impaired functioning (Somer, 2002). Internet users around the world have adopted this relatively new term to facilitate communication between them, confer themselves a collective identity and give meaning to their mutually distressing condition (Bigelsen, Lehrfeld, Jopp, & Somer, 2016). Still, the existence of MD has yet to be recognized, let alone understood, by mental health professionals. Sufferers recently reported being embarrassed by their unusual disorder, often believing no one else suffered from similar symptoms. Others described how their MD symptoms had been summarily dismissed or contested by practitioners who treated them unsuccessfully for more common diagnoses ranging from anxiety to schizophrenia (Somer, Somer, & Jopp, 2016a).

The MD experience

Recently published phenomenological data (Somer, Somer, & Jopp, 2016a,b) point to a number of features marking MD: a) Individuals with MD discovered their ability to activate fanciful fantasies during childhood. b) They need privacy to engage in this mental activity, and movement (e.g., pacing) and exposure to music are important facilitators. c) Some maladaptive daydreamers (MDers) report constantly struggling with the outcomes of adverse childhood experiences or ongoing social and emotional difficulties. d) This rewarding and soothing experience can develop into a detrimental mental habit. Daydreaming scenarios often are intertwined with emotionally compensatory themes involving fantasized emotional support, competency, and social recognition. This leads to the development of a vicious cycle in which they use MD to seek comfort from their stressors only to experience further distress about their time-wasting, which they ease with more daydreaming (Somer, Somer, & Jopp, 2016b).

Is MD a Psychopathology?

There is ample evidence to suggest that MD is a reliable clinical construct (e.g., Somer, Lehrfeld, Jopp, & Bigelsen, 2016; Somer, Soffer-Dudek, Ross, & Halpern, 2017). MDers report feelings of distress and intense shame stemming from their difficulty in controlling their MD yearnings and behavior that interference with social and daily functioning (Bigelsen & Schupak, 2011). A separate study by Bigelsen et al. (2016) confirmed that MD differs significantly from normative daydreaming in terms of quantity, content, experience, distress, degree of perceived control, and interference with life functioning. Results also demonstrated that MDers exhibit significantly

higher rates of attention deficit, obsessive-compulsive, and dissociative symptoms than controls.

Comorbidity—the concomitance of two or more psychiatric diagnoses—is a hallmark of DSM diagnoses. For instance, in the US National Comorbidity Survey (Kessler et al., 1994), 51% of patients with a DSM–III–R/DSM–IV (American Psychiatric Association, 1987, 1994) diagnosis of major depression had at least one concomitant (comorbid) anxiety disorder, and only 26% had no concomitant (comorbid) mental disorder. In the Early Developmental Stages of Psychopathology Study (Wittchen, Nelson, & Lachner, 1998) the corresponding figures were 48.6% and 34.8%. A recent systematic assessment of psychiatric comorbidity in MD revealed that individuals meeting criteria for MD exhibit complex psychiatric problems spanning a range of DSM-5 disorders; 74.4% met criteria for more than three additional disorders and 41.1% met criteria for more than four. Attention-deficit hyperactivity disorder was the most frequent comorbid disorder (76.9%), followed by anxiety disorder (71.8%), depressive disorder (66.7%) and obsessive-compulsive or related disorders (53.9%). A notable 28.2% of MDers have attempted suicide (Somer, Soffer-Dudek, & Ross, 2017). Recently, my colleagues and I provided evidence showing that not only is MD a distinct clinical construct but that based on our proposed diagnostic criteria MD can be diagnosed reliably using a structured interview developed for that purpose. The new diagnostic interview demonstrated excellent agreement with a self-report measure for the disorder. Additionally, we identified a useful cutoff score for future self-report research (Somer, Soffer-Dudek, Ross, & Halpern, 2017). Nevertheless, despite the importance of identifying MD correctly, the main challenge in this nascent clinical field is to understand the essence of MD and its derivative treatment.

An Ontological Analysis of MD

MD is a multifaceted clinical entity that is difficult to pigeonhole. In this section I attempt to determine the ontological status of this condition. In other words, I try to conceptualize the nature of this "thing" known as maladaptive daydreaming. The many MDers I have spoken with in recent years have invariably informed me that their MD began with their childhood discovery of a capacity to immerse themselves in gratifying vivid imagery. Some of my interviewees believe this trait may have a genetic component, as close family members also seem to possess it. I begin with the assumption that MD starts with and is based on a trait that facilitates a powerful sense of presence during daydreaming. This trait is probably what ontologists would term a "natural kind" (Devitt, 2008). To say that a kind is *natural* is to say that it corresponds to a grouping that reflects the structure of the natural world rather than the actions of human beings or

their interpretations. In our case the reference is to a mental module. Ontological functionalists define natural mental kinds by their functional roles (Fodor, 1983). Although a thorough discussion of the evolutionary function of human fantasy is beyond the scope of this paper, Somer, Somer, & Jopp, (2016a) have described the defensive and restorative functions of this trait. Some of these functions will become apparent in the following analysis.

MD as a Dissociative Disorder

MDers report that their fantasizing activity entails intense, absorptive focusing on spontaneous but maintained and elaborated “private worlds” of fantasy, which is referred to in the literature as “paracosms” (MacKeith, 1983). Indeed, daydreaming and absorption experiences have long been identified as dissociative in nature. The absorption-imaginative involvement factor of the Dissociative Experiences Scale (DES) is composed of common, benign experiences, such as being engrossed in a movie or missing part of a conversation (Carlson & Putnam, 1993). DES factor studies (e.g., Ross, Joshi & Currie, 1991) show that the absorption/imaginative involvement items are much more common than those of the other factors in the scale. This is primarily because DES items seeking to address absorption/imaginative involvement do not represent inherently pathological experiences. This is true even when the score on an individual item is high.

Evidence shows that absorption is associated with hypnotizability (Smyser & Baron, 1993). The absence of a psychopathological version of absorption has led to the claim that absorption is a non-trauma-related, nonclinical form of dissociation. It is a personality trait associated with normal, benign experiences related to the ability to be immersed in a single stimulus, either external (e.g., a book) or internal (e.g., daydreaming), while neglecting other stimuli in the environment (Kihlstrom, 2005).

Maladaptive daydreaming may represent the pathological end of absorption spectrum experiences. Recently, Somer, Lehrfeld, Jopp, & Bigelsen (2016) have provided further evidence about the relationship between the Maladaptive Daydreaming Scale (MDS) and dissociation.

The significant correlation between the DES total score and the MDS score ($r = .55, p < .01$) demonstrated that maladaptive daydreaming activity was akin to the more general phenomenon of dissociation. A more careful examination of the subscale scores revealed that the absorption items of the DES were more responsible for this relationship ($r = .63, p < .01$) than either amnesia ($r = .24, p < .01$) or depersonalization items ($r = .39, p < .01$). This pattern of associations corresponds with our understanding that MD is first and foremost a process of full absorption in one’s inner world. MD seems to have strong dissociative properties characterized primarily by a propensity toward absorption.

Nevertheless, these data are not very helpful in devising a dissociation-informed treatment strategy. Absorption experiences do not represent post-traumatic structural dissociation. Available data indicate that only 27% of MDers report experiencing either some sort of childhood physical, emotional, or sexual abuse or other forms of trauma. Most report uneventful or happy childhoods (Bigelsen & Schupak, 2011). Therefore, treatment guidelines designed for severe trauma-related dissociative psychopathology such as the DID (International Society for the Study of Trauma and Dissociation, 2011) may not be pertinent.

MD as a Disturbance of Attention

Several interrelated constructs associated with difficulties in remaining focused on external tasks have been described in the literature as involving daydreaming. Diagnostic criterion A1c (relating to inattention) for attention deficit disorder/hyperactivity (ADHD) describes a symptom that alludes to daydreaming: “Often does not seem to listen when spoken to directly” (e.g., mind seems to be elsewhere, even in the absence of any obvious distraction) (American Psychiatric Association, 2013). Indeed, daydreaming has often been described as characteristic of ADHD (e.g., Bokor & Anderson, 2014). “Mind wandering”—another associated concept defined as a shift of attention from a task to unrelated concerns—has also been associated with daydreaming (Marcusson-Clavertz, Cardena, & Terhune, 2016) and with ensuing impaired performance (Mrazek et al., 2012). “Sluggish cognitive tempo” (SCT) is another related construct. SCT was hypothesized to describe a constellation of behaviors that includes daydreaming, lethargy, drowsiness, difficulty sustaining attention and underactivity. Measures of SCT have shown associations with symptoms of attention-deficit/hyperactivity disorder (ADHD), particularly inattention (Jacobson et al., 2012).

MD research data confirm the existence of attention deficits among MDers. For example, items measuring ADHD inattention symptoms demonstrated larger effects for differences between MDers and non-MDers (Bigelsen et al., 2016). However, in a recent study on MD comorbidity, Somer, Soffer-Dudek, & Ross (2017) showed that MDers suffer from pervasive inattention psychopathology. No less than 76.9% of diagnosed MDers also met diagnostic criteria for ADHD. Twenty-seven of the 30 interviewees diagnosed with ADHD were identified as Inattentive Type (69% of the entire sample). Research participants have unvaryingly attributed their disturbed attention functions to MD and claimed that their MD preceded their ADHD. The researchers concluded that MD cannot be better accounted for by a comorbid attention disorder. Further evidence for the above assertion is found in the fact that 23.1% of diagnosed MDers did not meet criteria for attention deficit/hyperactivity disorder, showing that ADHD cannot fully account for MD. Although the nature of the relationship between these comorbid disorders is not yet resolved, treatment for MD must clearly

include assessment of attention dysfunction and derivative treatment components.

MD as a Behavioral Addiction

Several behaviors can produce short-term rewards that are sufficiently potent to reinforce perseverance despite concerns about unfavorable effects such as compromised functioning and weakened behavior regulation. This similarity to substance addiction has given rise to the concept of non-substance or “behavioral” addictions. Although the notion of behavioral addictions has some scientific and clinical heuristic value, it remains controversial. Behavioral addictions, identified in the DSM-IV-TR (American Psychiatric Association, 1987) as impulse control disorders, are now a separate category in the DSM-5 (American Psychiatric Association, 2013).

A core characteristic of MD is its lure. A review of the MD literature based on the participation of hundreds of respondents consistently indicated that MD is so rewarding that MDers feel compelled to extend and repeat their experience as long and as often as they can. For example, an analysis of 90 self-identified MDers revealed that most participants were distressed by what they described as an uncontrollable need to engage in fantasy, with 79% of the sample reporting unsuccessful attempts to limit their fantasizing (Bigelsen & Schupak, 2011). A qualitative analysis of in-depth interviews with 16 MDers confirmed that they struggled with an insatiable yearning for daydreaming (Somer, Somer, & Jopp, 2016a). In another study, Bigelsen, Lehrfeld, Jopp & Somer (2016) reported that over half the MDers described a strong urge to begin daydreaming immediately upon awakening or to return to a daydream immediately after being interrupted by a real-world event. MDers seemed able to suppress their daydreaming when they absolutely had to (i.e., when in public), but experienced difficulty fighting the urge to daydream in other circumstances (Biegelsen et al. 2016). Recently Somer et. al., (2016) showed that craving (for daydreaming) is a salient feature of MD. In a confirmatory factor analysis of the maladaptive daydreaming scale (MDS), the authors showed that the three-factor construct of MD includes “yearning,” a cluster of symptoms that reflect the appeal of daydreaming, and intense craving to engage in this activity. Together, these findings seem to correspond with the DSM-5, which lists craving as an important symptom of any addiction. In this case, MD is best classified as a nonsubstance addictive behavior or a behavioral addiction, similar to gambling, Internet use, video-game playing, sex, exercise, and shopping addictions. These disorders bear some resemblance to alcohol and drug dependence despite the fact that no substances are ingested. Hence, I conclude that informed treatment of MD should share elements from evidence-based treatments for nonsubstance or behavioral addictions.

The case report that is the focus of the current paper addresses another noteworthy form of mental escapism: excessive Internet use. Internet addiction disorder (IAD, Pies, 2009). IAD was identified as a significant modern public health problem (Weinstein & Lejoyeux, 2010) and has been considered for inclusion in the DSM-5. Like MD, IAD was conceptualized as a behavioral addiction, with features resembling those of obsessive-compulsive spectrum and impulse-control disorders (Cash, Rae, Steel, & Winkler, 2012).

MD as an Obsessive-Compulsive Spectrum Disorder

In this section I discuss what some scholars have argued—that behavioral addictions are best classified as obsessive-compulsive spectrum disorders (e.g., Allen, King, & Hollander, 2003).

MD is characterized by chronic difficulties in controlling the impulse for recurrent and extensive daydreaming. From this perspective, MD shares some characteristics with the DSM-5 classification of impulse-control disorders such as gambling, kleptomania and pyromania in that individuals with these disorders have lost control, have an irresistible impulse to perform dysfunctional acts, and may consequently harm themselves. As in disorders that were previously known as “impulse-control disorders,” MDers report a pre-act arousal and/or tension. Moreover, engaging in this mental behavior results in relief or gratification that is sometimes followed by guilt. MD is characterized by an inability to resist the urge to daydream and is often progressive. Gambling disorder (GD), the only nonsubstance use disorder currently listed in the DSM-5, has also been hypothesized to represent an obsessive-compulsive-spectrum disorder (Blanco, Moreyra, Nunes, Sáiz-Ruiz, & Ibañez, 2001; Hollander & Wong, 1995). Whether GD and MD should be construed as “compulsive,” “impulsive,” or “impulsive-compulsive” remains an unanswered question. There may be some overlap in the underlying psychobiology of obsessive-compulsive disorder (OCD) and that of certain behavioral addictions (Chamberlain, Blackwell, Fineberg, Robbins & Sahakian, 2005), although a review of pertinent research suggests more differences than similarities between these disorders and OCD (Phillips et al., 2010).

The disagreement concerning the theoretical classification of behavioral addictions notwithstanding, there is some evidence that both GD and MD responded to medication believed to influence obsessiveness and/or compulsiveness. For example, Allen, King and Hollander (2003) demonstrated the possible efficacy of selective serotonin reuptake inhibitors (SSRIs) in GD. Their studies assessed the efficacy and tolerability of the SSRI fluvoxamine in GD without comorbidities and found that fluvoxamine reduced gambling urges and behavior. Similarly, Schupak and Rosenthal (2009) reported the successful treatment of a patient presenting with chronic MD. The patient reportedly responded favorably to fluvoxamine

therapy, stating that it helped control her daydreaming. The fact that this patient responded to a medication that influences serotonergic tone might imply neurochemical irregularity. Further research is needed before more robust inferences could be made about the possibility that at least some compulsive daydreaming may be related to obsessive-compulsive spectrum disorders.

Methods

Client Background Information

Ben is a 25-year-old single Israeli, undergraduate history student, at a major university who lives in student housing. He has a sister who is three years younger than he. He described his parents as loving and supportive and portrayed his childhood as safe, fairly happy, and characterized by a penchant for daydreaming. Ben has been an avid guitar player since childhood. He indicated that during adolescence he wasted many hours imagining himself on stage performing in front of big crowds that included attractive, admiring female classmates.

Ben wrote to me after reading an outdated call for research participants posted on a Facebook community of individuals struggling with MD. In his email, Ben indicated he was willing to participate in any MD study and that he was particularly eager to help promote knowledge about MD and its treatment. He reported daydreaming intensely and extensively since early childhood. He enjoyed daydreaming immensely despite the fact that this mental activity resulted in dreadful compromises in his daily functioning. A year before he contacted me, Ben had begun psychotherapy at his university student counseling center. His presenting problems were concentration problems and depression. He informed his therapist at that time about his daydreaming. She understood his MD as a symptom of attention deficit/hyperactivity disorder (ADHD), the diagnosis she assigned to him and, as a regressive mode of coping with stress. The clinic's consulting psychiatrist prescribed the psychostimulant Methylphenidate (Ritalin), the medication most commonly prescribed for ADHD. Methylphenidate was titrated gradually to 20 mg orally twice a day as a maintenance dose. Although the medication improved his ability to concentrate in class and sporadically improved his ability to work at the university library, it also enhanced his concentration on daydreaming, particularly when he was alone in his apartment, resulting in a 50% increase in daydreaming time. Ben discontinued taking his medication after two weeks because of its paradoxical effect on his daydreaming and his realization that it resulted in daily bouts of depression occurring four to five hours following ingestion. Because he felt his gains were negligible, Ben terminated his psychotherapy after six months.

When Ben presented himself for treatment, he complained of daydreaming several hours every day. He stated that his MD had compromised his studies, his ability to practice guitar and to take part in profitable gigs as well as his dating and social life. He reported having no close friends on campus and stated he had not been in a serious romantic relationship in five years. He reported his concern that he might be missing the “right” match for him while he was dating his current partner. Ben tended to drift into daydreaming to envision an idealized future with a “perfect” girlfriend and to see himself as a successful scholar or an accomplished musician. He used daydreaming as an antidote to boredom, to contemplate the meaning and purpose of his life, to elaborate and embellish on book and movie plots, to “revise and improve” subjectively unsatisfactory interactions and to escape depressive guilt associated with his MD-related procrastination. Listening to music, watching music videos, jogging and pacing were strong MD triggers and facilitators. Ben was also concerned about his tendency to spend considerable time surfing the Internet.

Assessment

During the initial evaluation, Ben was administered a screening question, several self-report questionnaires, and a structured diagnostic interview, as described in the following.

- **Screening question.** Ben first responded to an MD classification question that during our initial correspondence helped identify him as someone potentially suffering from MD (see Somer et al., 2017). Based on the screening question, Ben confirmed his daydreaming as maladaptive.
- **The 16-item Maladaptive Daydreaming Scale (MDS; Somer et al. 2016).** The MDS is a 14-item self-report MD questionnaire. Based on evidence about the important role of music in MD (Somer, Somer, & Jopp, 2016b), two additional items were added to the previously published MDS that gauge the relevance of music in the respondent’s MD experience. In this case report the revised 16-item MDS (MDS-16; Somer et al., 2017) was used. This measure was administered two additional times: initially at the end of therapy, and later during a two-month follow-up session.

The structured clinical interview for maladaptive daydreaming (SCIMD, Somer et al., 2017). The SCIMD was developed based on proposed diagnostic criteria for MD. It consists of a 10-question probe (and subsequent additional follow-up questions) for inclusion criteria and one probe (and its follow-up questions) for an exclusion criterion. The SCIMD has demonstrated both good interrater reliability and excellent

Cohen's kappa values for the agreement rate between the SCIMD diagnosis and a self-report measure for the disorder. Ben's SCIMD interview yielded a diagnosis of "maladaptive daydreaming—severe"—a diagnosis that met the inclusion criteria for this case study.

- **Average daily daydreaming time.** Ben was instructed to monitor his daily daydreaming time for a period of one week. The data indicated that Ben spent an average of 169 minutes per day daydreaming. This measure was administered two more times: at the end of therapy and during the two-month follow-up session.
- **Average daily Internet use time.** Ben was instructed to monitor his daily time spent using the Internet for a period of one week. The data indicated that Ben spent an average of 150 minutes per day using the Internet. This measure was administered two more times: at the end of therapy and during the two-month follow-up session.
- **Average daily MD pleasure.** Ben was asked to rate the level of pleasure he derived from his daily daydreaming. His weekly average level of daily enjoyment was 43 on a scale ranging 1-100, indicating a low-moderate level of pleasure. This measure was administered two more times: at the end of therapy and during the two-month follow-up session.
- **The Obsessive–Compulsive Inventory-Revised (OCI-R;** Foa et al., 2002) is an 18-item self-report measure assessing symptoms of obsessive–compulsive disorder. Recommended cutoff score is 21, with scores at or above this level indicating the likely presence of OCD (Foa et al., 2002). Ben's score on the OCI-R was 7, well below the clinical cutoff for the disorder. His score exclusively resulted from his endorsement of items describing obsessions. A debriefing of Ben's endorsed items clarified that he was mostly distressed about his current life and obsesses about desired future developments. His obsessions were usually followed by immersive daydreaming about the fantasized outcomes. This measure was administered two more times: at the end of therapy and during the two-month follow-up session.
- **The Work and Social Adjustment Scale (WASAS;** Marks, 1986) is a simple 5-item self-report scale of functional impairment attributable to an identified problem. The WASAS is rated on a 9-point scale (0–8). It is a reliable and valid measure of impaired functioning (Mundt, Marks, Shear, & Greist, 2002). A sample item is: "Because of my maladaptive daydreaming, my ability to work is impaired." A score of 0 indicates "not at all impaired," whereas an 8 indicates "very severely impaired to the point I can't work." WASAS scores between 10 and 20 are associated with significant functional impairment (Mundt et al., 2002). Ben's

score was 19, well above the clinical cutoff, indicating substantial maladaptation. This measure was administered two more times: at the end of therapy and during the two-month follow-up session.

Case Conceptualization

Ben reported a life-long, probably innate, capacity for immersive daydreaming characterized by an intense sense of presence. He had developed his intense dissociative absorption not only into a freestanding source of daily pleasure, but also into a rewarding distraction from daily boredom and worries. The client's habit had developed into a time-consuming addictive behavior with a detrimental impact on his social life, his studies and his music career. Ben's problems were exacerbated by two additional processes: 1) time-consuming obsessive thoughts, mainly about a desired future, and 2) excessive Internet use serving as an additional escapist activity. The objective assessment (SCIMD, Somer, et al. 2017) showed that he met the suggested diagnostic criteria for MD. Daydreaming and Internet use, respectively, consumed 169 and 150 minutes of each day. His escapist activities deprived him of more than five of his daily waking hours, significantly compromising his functioning. As is typical of addictive patterns, Ben resorted to more daydreaming and Internet use to soothe his distress associated with wasting time. In the absence of any guidelines for the treatment of pathological absorption such as MD, it was decided to explore existing treatment modalities shown to be effective for behavioral addictions such as Internet-use disorder, OCD, and ADHD/mind wandering.

Treatment Overview

Studies on cognitive behavior therapy (CBT) for substance-use disorder demonstrate that length of treatment can vary greatly. However, some correlational studies indicate a positive relationship between longer duration and positive outcome (Simpson, Joe, & Brown, 1997). Without existing guidelines for the treatment of MD, and given the pioneering nature of the planned treatment, a relatively longer CBT duration was chosen. In consideration of budgetary constraints, Ben's experimental therapy was limited from the onset to a treatment of duration of six months or less. Neither Ben nor the therapist received any monetary compensation for the treatment. The therapist and Ben developed the treatment modalities together by consulting and revising various coping strategies and tailoring them to Ben's own needs and preferences. Despite several setbacks and occasional relapses, Ben monitored his MD/Internet use on a daily basis and reported the results in writing every week. After six months, Ben's therapy was terminated because the designated treatment time ran out. Because Ben lived far from the treating therapist's office, the decision was made to conduct the therapy via a secure video conference service. Remote and Internet-based

therapy has long been demonstrated to be as effective as face-to-face therapy (e.g., Barak, Hen, Boniel-Nissim & Shapira, 2008).

As discussed above, no treatment modalities have been developed for non-trauma-related, benign, extensive absorption (Carlson & Putnam, 1993; Kihlsrom, 2005). In creating a treatment plan for Ben's MD, interventions pertinent to the treatment OCD-spectrum and attention deficit disorders were used.

Motivational interviewing (MI). Addictions are often regarded as disorders of motivation (Heather, 1992). A person with an addiction disorder exhibits an inclination for self-defeating behavior that is obviously contrary to the individual's long-term welfare. Persons suffering from addictive disorders are often puzzled by, disapprove of, and wish to change their own self-destructive behavior (Heather, 1998). One of the most important challenges in addiction psychotherapy is the fostering of sufficient motivation to offset the rewarding characteristics of the addictive substance or behavior. Motivational interviewing (MI) has repeatedly demonstrated its effectiveness in addiction psychotherapy (Heather, 2004). The first element included in Ben's treatment was MI, a client-centered yet directive method for enhancing intrinsic motivation to change by exploring and resolving client ambivalence (Miller & Rolnick, 2002). MI was used to help Ben relinquish his MD and excessive Internet use behaviors. By using techniques such as openended questions, reflective listening, affirmation, and summarization that help individuals express their concerns about change, Ben was able to develop new behavioral skills (Miller, 2010). MI allowed Ben to become more aware of the impending complications, consequences and jeopardies resulting from his escapist absorption. In addition, he was able to visualize a better future, contemplate what might be gained through change, and become increasingly motivated to commit himself to the arduous work involved in controlling his MD (Brodie, Inoue & Shaw, 2008; Cummings, Cooper & Cassie, 2009). This strategy helped Ben to think differently about his behavior and ultimately consider changing it. The initial phase of therapy focused on Ben's motivation to change his MD and his excessive Internet use. The therapeutic rationale was that his addiction was inconsistent with his stated personal values, desired self-image, and goals in life.

Cognitive-behavior therapy. Typically, traditional substance dependency treatment aims for total abstinence from maladaptive behaviors. However, in Ben's case, total abstinence was not the goal, primarily because daydreaming is a universal experience comprising much of normal mental activity (Klinger, 2009). Instead, it was decided to help him curb his extensive uncontrolled bouts of daydreaming, abstain from problematic applications (such as Facebook), and engage in scheduled rather than impulsive Internet usage (Petersen, Weymann, Schelb, Thiel & Thomasius, 2009).

Inspired by Young's work with Internet use disorder (2007) and by the work of Solanto and her colleagues with ADHD (Solanto, Marks, Mitchell, Wasserstein, & Kofman, 2008), CBT interventions were included to teach Ben contingent self-reward, time- and task-management, implementation of learned relaxation and mindfulness skills, problem solving, and planning for future academic and work-related goals. Following are specific examples of the CBT component of his treatment:

- Throughout the treatment, Ben self-monitored his target behaviors and maintained a diary in which he noted the circumstances surrounding his MD and Internet use as well as his associated thoughts and feelings.
- Every evening Ben prepared a detailed schedule for the next day's activities in which he designated a single, late evening hour for recreational Internet use.
- Ben read the day's plan in the mornings and reread a printed copy of the schedule several times a day.
- To suppress the reinforcing pleasure of his MD, Ben strove to intercept his developing MD plots as early as possible and to terminate these plots with negative or aversive endings (e.g., a distressful twist to the fantasized plot, a reminder from his MI that daydreaming is a detestable, self-destructive act).
- Ben was instructed to reinforce himself with self-praise for successful interceptions of MD.
- Ben maintained accountability by texting reports of self-monitored MD/Internet time and coping measures. Intermittent feedback was provided in the form of encouraging text messages or brief phone coaching sessions to remind him of the skills and resources available to him (e.g., calling his girlfriend).
- Ben is an avid jogger, and kinesthesia is a known trigger for MD (Somer, 2002; Somer, et al. 2016a). Indeed, Ben tended to get lost in his daydreaming while jogging, sometimes extending his exercise time to three times his originally allocated time. Ben controlled his daydreaming while jogging by running mindfully, as per the mindfulness training described below.
- Ben learned to employ a number of coping statements he found very convincing and helpful: "Daydreaming is detrimental to me—it is a harmful addiction"; "I will mindfully deal with my distress in the present rather than escape into a future fantasy"; "I will recognize obsessive worries as OCD symptoms rather than as real concerns and will deal with them mindfully rather than daydream about solutions"; "Problems in life can only be addressed in the present."

- Despite his yearning for a meaningful romantic relationship, Ben was tormented by perfectionistic and obsessive doubts that hampered his ability to maintain a satisfactory durable relationship. Ben responded to cognitive and acceptance- and commitment-informed therapy (ACT; Hayes, Strosahl & Wilson, 2012) interventions. He learned to recognize his doubts as obsessions rather than as reality-based concerns, to accept that his “ideal match” is an unattainable fantasy and to acknowledge that it was better to be mindful of his experience with his current partner than to daydream about a coveted “ultimate lady.”

Mindfulness training. Mindfulness is a psychological process of Buddhist origins. It involves shifting one’s attention to experiences occurring in the present moment. Mindfulness can be developed by practicing meditation training (Kabat-Zinn, 2013). Converging scientific evidence has begun to corroborate the positive impact of mindfulness meditation on a variety of psychological conditions. The inclusion of mindfulness training in Ben’s treatment is based on evidence that it enhances attention (MacLean et al., 2010), decreases mind wandering and improves cognitive performance (Mrazek, Franklin, Phillips, Baird, & Schooler, 2013). Mindfulness meditation has been associated with significant reductions in alcohol, marijuana, and crack cocaine use (Bowen et al., 2006) and with reduced relapse risk in substance-use disorders (Bowen et al., 2014). Therefore, it may be an important modality in the treatment of MD.

Ben became an enthusiastic mindfulness disciple. He practiced it as a morning routine and as a versatile mode of coping with a variety of challenges.

Results

Ben’s more grounded life experience in response to therapy had several manifestations elucidated below. One poignant modification he introduced into his life involved a stable romantic relationship. Three months into therapy Ben met a female student on campus whom he consciously decided to “tolerate” for the sake of his therapy. As time progressed, he developed a meaningful, tender attachment to her and reported enjoying her wit and her caring behaviors. This relationship, the longest since he was in high school, was still going strong during the follow-up session. This, however, was a positive side effect of the main goals of this treatment. Based on an ontological analysis of MD, the aim was to discover whether derivative treatment modules can help alleviate MD behaviors and distress.

Data collected at termination of therapy and at a two-month follow-up showed a 53% and 57% reduction in daydreaming time, respectively, and a 79% and 73% reduction in Internet use time, respectively (See Figure 1). According to Global Web Index, a technology company that provides audience profiling data, digital consumers claim to be spending an average

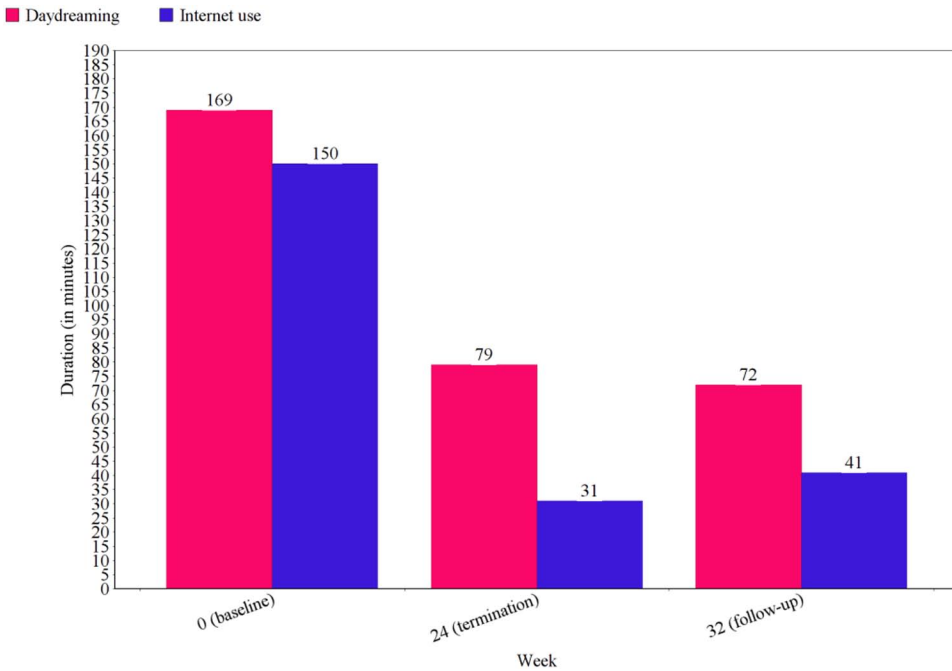


FIGURE 1 Average daily duration of daydreaming and Internet use (in minutes)

of almost two hours per day on social networks and messaging (Mandler, 2016). Ben's total daily time spent on the Internet at follow-up was 41 minutes. Compared to 2016 global figures, his rate of Internet consumption was relatively low. Therefore, complete abstinence from either activity may not be a reasonable expectation.

Figure 2 shows repeated measurement of Ben's work and social adjustment index as evaluated before treatment, immediately after the end of treatment, and at two-month follow-up. The results demonstrated an improvement of 86% and 71%, respectively (lower WASAS scores reflect better adjustment).

In light of these favorable objective findings, it was important to gauge the reflected changes in Ben's self-reported MD experiences. Ben's MDS-16 score was 65.6 before therapy, 54.4 at the end of therapy and 58.8 at follow-up, reflecting a 17% and 10% subjective decrease, a considerably smaller difference than in his objective measures. Reported changes in Ben's daily pleasure levels experienced during daydreaming may shed some light on the discrepancy between the objective and the subjective MD measures. Ben's daydreaming pleasure appraisals rated on a 1–100 scale measured at therapy onset, termination, and follow up were 43, 34, and 35, respectively. These changes reflect modest post-therapy reductions in daydreaming gratification of 20% and 19% respectively, demonstrating the continued lure of this mental activity.

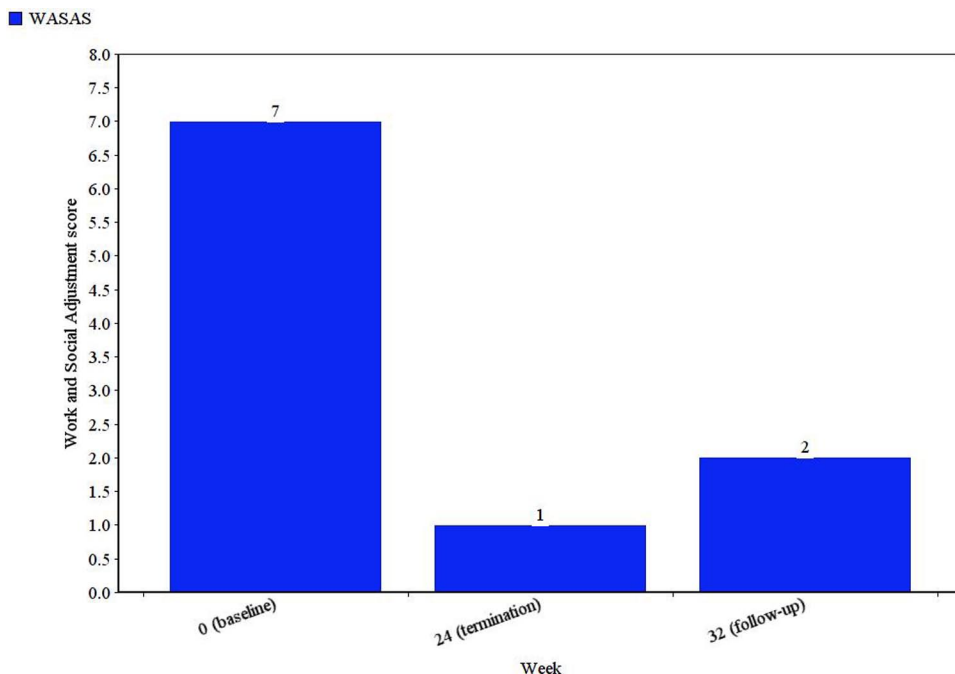


FIGURE 2 Work and Social Adjustment Scale (WASAS) scores*

Note. *Lower scores reflect better adjustment

Finally, in light of Ben's obsessional habits, his mean OCI obsession symptoms were examined. His obsession scores across the three measurements—before, after, and at follow-up—were 5, 1, and 2, respectively, reflecting an 80% and 60% improvement post-therapy and at follow up.

Discussion

This paper represents the first known documented attempt to treat an individual presenting with MD. An ontological analysis of MD portrayed this absorption disorder as emanating from a mental capacity, possibly an innate characteristic. This mental process is invariably experienced at first as highly rewarding, leading some individuals to indulgence that can go awry and develop into an addictive habit. It is proposed that MD be considered a dissociative absorption disorder and as either an OCD-spectrum disorder or a behavioral addiction. Unlike other dissociative disorders, no evidence has yet shown that childhood trauma is either sufficient or necessary for the development of MD. This strongly suggests that treatment guidelines developed to help dissociative survivors of childhood abuse may not be pertinent for many, if not most, MD cases.

Ben's case study demonstrates the integration of several treatment modalities that have exhibited efficacy in the treatment of substance use and OCD-spectrum disorders as well as behavioral addictions. This integrative approach contributed to a stable decrease in target behaviors (duration of daydreaming and Internet use), underlying obsessions, and also work and social dysfunction. It is known, however, that several etiological pathways may contribute to the development of MD. For example, my own research identified a subpopulation of MDers with a background of childhood trauma (Somer, 2002; Somer, Somer & Jopp 2016a). Other research established childhood abuse (Somer, 2003; Somer, Altus & Ginzburg, 2010) and disordered attachment styles (e.g., Flores, 2001; Zapf, Greiner & Carroll, 2008) as contributors to later life addictions. It is recommended that a careful assessment for a history of childhood trauma and attachment styles for MD clients be taken as some individuals may benefit from transference-aware psychodynamic psychotherapy strategies.

One unresolved issue is the discrepancy between the encouraging objective outcomes and the MDS-16 data. Although changes in the self-report measure were consistent with actual behavioral changes, the scale reflected an apparently smaller improvement. Several factors may account for this difference. First, Ben's perfectionism, often a prime instigator of compensatory daydreaming themes, left him constantly unsatisfied with his gains in therapy. Unavoidable lapses were very discouraging to him and occasional setbacks were very painful for him, particularly as the therapy approached its predetermined end. A second explanation for this gap relates to the nature of the MDS-16 items. Most of them address essential qualities of the phenomenon rather than quantitative measures. For example, if music and movement are still experienced as potential triggers for daydreaming, these items may still be highly endorsed even if the respondent shows improved control over his actual daydreaming. Future revisions of the MDS-16 should perhaps consider adding measures of the target behaviors. Finally, subjective changes in Ben's MD behavior were experienced as relatively small because the level of pleasure associated with MD showed only a slight decrease following treatment. In other words, daydreaming subjectively remained as alluring post-therapy as it was in the pretreatment measurement, leaving Ben with a subjective sense that he is still at risk of addiction. This experience has been recognized by a 12-step fellowship of individuals who are recovering from addiction to fantasy and other escapist behaviors (EFAA—Escapism and Fantasy Addicts Anonymous, 2017). The 12-step process involves admitting that one cannot control one's addiction or compulsion and that only a higher power can help (VandenBos, 2007). Incidentally, among other positive findings, reviews of the 12-step literature (e.g., Krentzman et al., 2010) noted that participation in such groups is associated with a greater likelihood of prolonged abstinence, improved psychosocial functioning and greater levels of self-efficacy. Future

studies should therefore assess the effectiveness of structured mutual support groups similar to EFAA for the treatment of MD, either as primary or adjunct interventions.

This paper describes a pioneering effort, or, as I affectionately told Ben: “You are MD’s patient 001.” In an embryonic field such as MD, case studies are essential both as initial hypoductive processes that can help formulate early treatment ideas and as a reciprocal inductive theory-building process. Clearly, this is only the first step. A more thorough study of online discourse in MD peer-support communities and focus-group research is warranted to yield valuable information from experts by experience (the sufferers) and derivative intervention ideas. Another limitation of this case report is the possible confounding variable of confirmation bias. The author, a leading researcher in the field of MD, took on the roles of both the therapist and the primary instrument of data collection and analysis. Future case replication studies by other clinicians and controlled psychotherapy research are necessary to shed further light on the treatment needs of this population.

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