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Parallel lives: A phenomenological study of the lived experience of maladaptive daydreaming

MALADAPTIVE DAYDREAMING

Eli Somer¹, Liora Somer² and Daniela S. Jopp³

Authors' note

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Abstract

This qualitative study describes the lived experience of maladaptive daydreaming (MD), an excessive form of unwanted daydreaming that produces a rewarding experience based on a created fantasy of a parallel reality associated with a profound sense of presence. Twenty-one in-depth interviews with persons self-identified as struggling with MD were analyzed utilizing a phenomenological approach. Interviewees described how their natural capacity for vivid daydreaming had developed into a time-consuming habit that resulted in serious dysfunction. The phenomenology of MD was typified by complex fantasized mental

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scenarios that were often laced with emotionally compensatory themes involving competency, social recognition and support. MD could be activated if several requirements were met. First, because social interaction seems to be incompatible with this absorbing mental activity, solitude was necessary. Additionally, kinesthetic activity and/or exposure to evocative music also appeared to be essential features. Besides delivering first-hand description of key characteristics of MD, the study also indicated that MD is associated with dysfunctionality for which participants expressed a substantial need for help.

Key words

fantasizing, absorption, mind-wandering

Daydreaming is a prevalent mental activity (Klinger, 2009; Singer, 1966) said to be present in almost half of all human thought (Killingsworth & Gilbert, 2010). In this study we aim to explore the phenomenology of maladaptive daydreaming (MD), a psychological condition described as “extensive fantasy activity that replaces human interaction and/or interferes with academic, interpersonal or vocational functioning” (Somer, 2002, p. 199). The CEQ or Creative Experiences Questionnaire (Merckelbach, Horselenberg, & Muris, 2001), a measure of Wilson and Barber’s (1983) concept of fantasy proneness was found to be related to MD (Somer, Lehrfeld, Jopp & Bigelsen, 2016). However, fantasy proneness as measured by the CEQ focuses on childhood experiences rather than current mental activities and thus is unhelpful in understanding the currently investigated phenomenon.

Primary cognitive activities associated with daydreaming and mind-wandering are called default mode network activation patterns. Most research studies on these patterns focused on brain areas that operate when a person is not attentive to external stimulation (Raichle, MacLeod, Snyder, Powers, Gusnard, & Shulman, 2001). Other associated research efforts measured eye movement and pupil dimensions during mind-wandering (Smallwood et al., 2011), decoupling of attention from perceptual input (e.g., Smallwood et al., 2012) or

cognitive control failure and its detrimental influence on academic performance and mood (McVay & Kane, 2010). Yet very little is known about anomalous daydreaming. Zhiyan and Singer (1997) first identified two dysfunctional daydreaming styles: guilty-dysphoric (associated with neuroticism) and poor attentional control (linked with lower levels of conscientiousness). However, these findings yielded very limited research on the more compulsive and excessive forms of daydreaming that are the focus of the current study. Currently, very little empirical data exists to describe scene-driven, affect-laden and highly vivid daydreaming that is also time-consuming, distressful and psychologically detrimental.

The first publication on the construct of MD identified six patients in treatment for sequelae of neglect- and trauma-related childhood experiences. These patients preferred to live in elaborate fantasy worlds while engaging in repetitive physical movements (Somer, 2002). All six participants were socially isolated and struggled with occupational functioning. The study offered a first glimpse into the subjective experience of MD. The primary MD function identified in that study was disengagement from stress and pain by mood-enhancing and wish-fulfilling fantasies about companionship, intimacy and soothing experiences. In the only other existing empirical study of MD, 90 individuals who answered written questions about their MD reported aspirational self-oriented daydreams (Bigelsen and Schupak, 2011). Repeated triggering and maintenance of MD activity were reported to be associated with kinesthetic behavior (Bigelsen and Schupak, 2011; Somer, 2002). Similar to a single-case MD study (Schupak and Rosenthal, 2009) and unlike Somer's report (2002), most participants in Bigelsen and Schupak's study (2011) reported no childhood trauma, thereby suggesting differing pathways to MD.

During the last decade and in response to the three published articles described above, the term MD seems to have gone viral on the Internet. The term "maladaptive daydreaming" currently yields well over 65,000 related hits linking to forums and chat rooms, Facebook

communities, YouTube testimonials, personal blogs and articles devoted to the topic. Many thousands of individuals worldwide go online to seek and offer peer support for their distressful problem that is often reportedly misdiagnosed, mistreated or dismissed⁴. MD seems to raise media interest, with articles on the topic featured in *Scientific American - Mind* (Glausiuz, 2011), *The Atlantic* (Kelly, 2015), *Men's Health* (Bonaguro, 2015) and on *Huffington Post's* online TV (Zepps, 2015). Hundreds of maladaptive daydreamers (MDers) from around the globe have contacted the first author expressing their desire to help promote knowledge about their enigmatic disorder and volunteering to take part in future MD research.

In the light of the scant body of descriptive studies on MD, we identified a need for rigorous research of non-clinical respondents with the aim of obtaining a full account of the MD experience among individuals who are seeking advice for their misunderstood distress. The purpose of this study is to gain a further understanding of the uniqueness of MD. We hope the data generated by this study will aid scholars and clinicians in better understanding the nature of MD.

Method

Participants

Participants were invited to take part in this research project following a two-pronged purposive sampling strategy. This strategy was employed because of its potential to provide improved understanding of the experiences of particular individuals and/or to develop new

⁴ E.g., Maladaptive Daydreamers forum on Yahoo Groups had 3281 members on January 14, 2016; see <https://groups.yahoo.com/neo/groups/maladaptivedaydreamers/info>

concepts (Devers & Frankel, 2000). We advertised a call for participants on several internet forums for individuals coping with MD. We also invited individuals who had contacted us expressing willingness to volunteer for future research on their problem. Participants were required to have reached the age of consent, to have a good command of either English or Hebrew and to indicate whether their self-defined MD meets one of the following two descriptions:

Daydreaming is a universal human phenomenon that a majority of individuals engage in on a daily basis. We are interested in learning more about people's experience with what they regard as excessive or maladaptive daydreaming experiences, and we thank you for agreeing to participate in our research interview. For the purposes of the study, we define daydreaming as fantastical mental images and visual stories/narratives that are not currently part of your life. Therefore, we are not referring to such acts as reminiscing over past events, planning for future activities such as mentally preparing for a meeting with your boss, or thinking about your mental "to do" list. We are also not including sexual fantasies in this study. Here are some examples of daydreams that can be included: hanging out with a favorite celebrity, winning a gold medal in the Olympics (unless you are an Olympic level athlete,) telling off your boss after winning the lottery or having an affair with an attractive co-worker who isn't the slightest bit interested in you, living in a parallel fantasy world, engaging in heroic or rescue actions, speaking with historical figures, etc. Any daydreams involving fictional characters or plots should also be included. Maladaptive daydreaming is defined as extensive (in terms of duration and/or frequency) and very vivid daydreaming that can be experienced as addictive, and it replaces human interaction and/or interferes with academic, interpersonal or vocational functioning and/or creates emotional distress

(e.g., guilt, shame, frustration, sadness, anxiety). According to this definition, my daydreaming is: (1) normal, (2) maladaptive (Somer, Lehrfeld, Bigelsen & Jopp, 2016).

An adequate sample size for phenomenological research is 5-25 (Creswell, 1998, p.64). We invited 25 individuals to take part in our study. The first consecutive 21 respondents to meet our inclusion criteria accepted our invitation to participate in this study (100% response rate). They read our IRB-approved explanation of the study and signed an informed consent form, which they subsequently scanned and emailed to us. Of these 21 individuals, five were male and the rest female. Their ages ranged from 18 to 42. All but four participants were single and all but four had a post-baccalaureate education and were either gainfully employed or pursuing their education. Eight respondents were from the USA, four were Israelis, and one participant came from each of the following countries: Argentina, Austria, Canada, India, Indonesia, Ireland, Turkey and the United Kingdom (see Table 1).

--- Insert Table 1 about here---

Interview Procedure

Because all participants but one lived far away from the authors' areas of residence, with participants' permission, all research interviews were video- or audio-recorded through a secure Internet video chat program. Each interview lasted between 45 and 90 minutes. Israelis were interviewed in Hebrew and the others in English. Our in-depth discussion followed an interview guide subsumed under the following grand tour question (Spradley, 1980): "Could you describe your experience of daydreaming?" Mini-tour questions

developed and used as probes or clarifying questions were asked only if sought-after information was missing or unclear (Spradley, 1980). An example of a mini-tour question was: “You told me earlier that you cannot control the amount of time devoted to daydreaming. Please tell me more about how you have tried to curb your daydreaming”. If information was not already spontaneously included in the respondents' replies, participants were asked at the end of the interview to provide demographic data about their gender, age, marital status, occupation and country of residence. All interviews were transcribed verbatim and transcripts were combined with the interviewer's field notes (Strauss & Corbin, 1998). To add missing information and resolve unclear pieces of information, we e-mailed some participants for clarifications and validating feedback.

Ethics

Ethics approval for the study was obtained from the Ethics Committee of the University of Haifa Faculty of Social Welfare and Health Studies. All participants in this study gave their informed consent.

Data analysis

Phenomenology is both a philosophy and a methodological approach situated along the interpretive paradigm. Phenomenology seeks to examine phenomena from the perspective of first-hand accounts and through the lifeworld of people (Crotty, 1998). We employed an interpretative phenomenological analysis to explore the “lived experience” as recorded and later transcribed (Smith and Osborn 2003).

We focused on multiple dimensions of participants' lived fantasy experiences through identified resemblances between respondents' descriptions of their mental activities and resulting emotions. Thus, based on their spontaneous accounts, we aimed to determine the

properties and meanings of excessive daydreaming and to shed light on the experiential essence of this psychological phenomenon. We made note of emerging codes as well as the relationships between them. Based on the code chart we created, we analyzed participants' testimonies until the findings were saturated. The researchers discussed the discrepancies among themselves until reaching resolution.

Emerging key points from the twenty-one transcribed interviews were assigned titles that best represented the essence of the conveyed experiences. These key points included a) maladaptation, b) the role of motion and music, c) solitude versus motivated engagement as regulators in MD, d) sensory components of MD, e) emotional properties of MD, f) degree of presence in the daydream and g) MD narratives. We then clustered the emerging key points under three master themes: (1) necessary conditions for MD, (2) MD contents and (3) experiential properties of the MD experience.

We then reviewed the interviews through comparative analysis with the previous two levels of coding, thereby applying a triangulation process that helped form new levels of conceptualization of the accumulated data (Saldaña, 2009). To verify the accuracy of our findings, we contacted some interviewees who provided further clarification and validation of our data.

Findings and discussion

Maladaptation

Recent evidence suggests that MD is an abnormal form of daydreaming associated with depletion of attention resources, obsessive-compulsive thoughts and behaviors and intense dissociative absorption and that it features intense yearning, distress and impaired functioning (Somer, Lehrfeld, Jopp & Bigelsen, 2016). Our sample comprised persons seeking peer-support on MD Internet forums and individuals who initiated contact with us in

the hope of contributing to future knowledge about their distress. During their interviews respondents reflected on the impact MD has had on their lives, expressing concern and sometimes outright distress about its harmful effects. Many described a vicious cycle in which they sought comfort from their stressors in MD, only to experience further distress about their time wasting, which they eased with more daydreaming. Following is a typical quote (All quotes are followed by initials of anonymous participant. See Table 1):

"I spend most of the day at home daydreaming. I live alone so technically I find it easy to dream all day long. My anxieties that this is how I will spend my life are increasing. I feel like a ghost that misses out on life. The stronger my fears get the more depressed I become and then I need to daydream to make myself feel better. It's a vicious cycle." (FG)

This person shares her experience of living what she sees as a sub-human life. The term "ghost" she uses to describe her existence connotes death.

Our interviewees realized the degree of maladaptation MD caused. For example:

"Oh Gosh, nothing gets done! Homework, studying, cleaning, sometimes I would lie there, my stomach will be growling and hurting and I won't get out of bed because I'm trying to daydream. It's that bad... I'll try not to go to the bathroom because I don't want to get up and stop for a second." (BC)

The expressed need for change was prevalent:

"It is really a nightmare now. I wish I could move on." (JK)

"It has served its purpose in getting me through my childhood but as an adult I would like to live the life that I like. It's keeping me from having a full life." (IJ)

“For myself, I just want a life, not just stories about a life.” (MN)

Indeed, our entire sample was desperately seeking information, peer support and advice for their condition, which is yet unrecognized in the mental health field.

Necessary conditions for MD

The role of motion and music. Almost all participants described a ritualized daydreaming initiation process that involved movement, music or both. They indicated that they activated these induction rituals only when they are alone. Here are some examples.

“So I used to ride my bike around the neighborhood and imagine myself with friends. Well, after a while I stopped riding my bike so I could daydream. I started staying in my room... Ever since then, I basically walk up and down my apartment.” (MN)

“To induce daydreaming I listen to music with my headphones on and it triggers it. When I am alone it just happens... Daydreaming is more visual, so I pick music that will help me express feelings and understand them. Sometimes the scenes are about the feeling the song makes me feel. It helps me just to feel.” (IJ)

“Any kind of repetitive movements I find really helps with getting myself immersed in the daydreams. I get much more when I am... listening to music, than I do without music. So I would be lying in bed with headphones on, making kind of rocking movements because that helps to sort of immerse myself in the DD somehow.” (TU)

These quotes illustrate a common process that seems a necessary condition for the initiation of fantasy. Our respondents haphazardly discovered that movement helped them set the MD process in motion. For example, respondent MN noticed that riding her bicycle during childhood had aided in fantasizing craved-for social situations. She later substituted bicycling with pacing. Respondent IJ indicated that the selected music aims at facilitating particular emotions. This respondent suggested that music-induced daydreaming alleviated difficulty in experiencing emotions. For respondent TU music facilitated more potent experiences, though kinesthetic activity seemed necessary for intensifying the MD-related absorption process. From the above quotes we can identify two necessary conditions for the initiation of an MD fantasy session: immersion in music and repetitive motion. This set of conditions sounds similar to the focusing of attention described as an induction process for hypnosis (Banyai & Hilgard, 1976) and has been observed among indigenous communities as part of ritualized kinetic trance induction often produced by rhythmic music and corresponding increased speed in the participant's movements of head and extremities (e.g., Somer & Saadon, 2000). It is conceivable that maladaptive daydreamers (MDers) discovered that to achieve their desired state of mind and altered MD state of consciousness they need to optimize concentration by minimizing distraction (solitude) and by kinesthetic music-enhanced activity.

Developmental psychiatrists have indicated that children with stereotypic movement disorder (SMD) express excitement and pleasure about this behavior or engage in concomitant imaginative play (Freeman, Soltanifar & Baer, 2010). More recently, researchers identified a subgroup of children who presented with stereotyped movements as acting the behavior in the context of episodes of intense imagery (Robinson, Woods, Cardona, Baglioni & Hedderly, 2014). Although children with SMD may follow different developmental paths

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(Freeman, 2014), it is plausible that a subgroup of children with SMD associated with creative repetitive fantasy may follow a trajectory leading to MD. Future longitudinal research could determine whether SMD is one developmental pathway to MD.

Solitude versus motivated engagement as MD regulators. Participants largely agreed that social interaction is incompatible with MD. For example, this Israeli respondent attempted to cope with her condition by loading her attention resources with social diversion:

“I understood that I need to spend as much time as I can with other people. Not to be alone, to be out as much as possible and to make sure my mind is preoccupied with stuff that will divert me from daydreaming.” (FG)

The next respondent clarified that it is not the mere social context that is key factor but rather the motivation to be engaged interpersonally.

“I very gradually came to understand that if I arrange my life so that I have frequent social interaction that I couldn't avoid, it would be much more controllable and then I met my husband and he was someone I wanted to be with, that I was motivated enough to really want – I don't want to mess up this relationship.” (HI)

Diminished motivation has been associated with lowered inhibitory control among children with attention-deficit/hyperactivity disorder. These children tend to perform better when presented with tasks they find interesting (e.g., Slusarek, Velling, Bunk, & Eggers, 2001). Similarly, during boring meetings or when among strangers, MDers tend to drift off into fantasy, as opposed to in situations in which they are motivated for higher level performance. Here is another illustration:

“To control daydreaming I tried to get distracted by a TV show but I get bored. If I were to hang out with my friends more and interact with them then that would work. I took up quilting and noticed I did not daydream while quilting because it requires a lot of focusing. Deadlines help with writing tasks. (UV)

Like others in our sample, respondent UV described attempts to regulate MD by attempting to shift attention outwards. However, the crucial variable in this way of coping seemed not to be related to the objective property of the external stimulus but rather to the degree of the interviewee's motivation to attend to the stimulus. A boring TV show was no match for the much more exciting internally played show. However, heightened interest and motivation seemed to play an important role in spending time with her friends, quilting or writing to meet a deadline.

Nonetheless, one subgroup of participants described utter loss of control over their compulsive fantasizing. For them, no coping method worked:

“It's sort of a nagging in your head that you should be daydreaming, your mind doesn't feel fully relaxed unless you daydream...so trying to control it has never gone well, I guess.” (TU)

“When I was young I tried to force myself out of it and got mad when I was doing it, trying to tell myself 'I'm gonna stop! I'm gonna stop!' but that only made it worse. I can't tell myself to stop, I don't even notice when I daydream, it's in my head, all over...I get mad at myself and that makes you do it more. I don't try to stop it because I know it's counterproductive.” (LM)

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These individuals describe a powerful sense of yearning for daydreaming that is in line with reports about craving in addiction. In fact, evidence suggests that craving in psychological addictions, such as among gamblers, can be more intense than that reported by alcoholics (Tavares, Zilberman, Hodgins & el-Guebly, 2005).

MD contents

The reported content worlds associated with MD varied greatly. Although obviously idiosyncratic in nature, MD seems to feature identifiable recurring patterns. Interviewees tended to develop ongoing stories, sometimes alternating between favorite inner worlds that could evolve infinitely, much like a daily TV soap opera. MD often developed first in childhood with scenarios typically based on cartoon characters. Beyond the many specific plots and scripts described to us, two main overarching MD themes emerged: (1) relationships and family life, and (2) social status.

Relationships and family life. Many participants preferred to weave complex scenes involving love and family relationships. Here are two representative quotes:

“My imagined perfect family is a lot different from my family in reality. It's like actually having a family life...of how I want it to be, setting up this perfect little world inside my head. Over time it changed: I am married, I have like 11 children, 12 grandkids, I live a very comfortable life with my family, we all go on holidays, everything is just really good.” (BC)

“I would daydream about family, mainly a brother and a sister about 17 years of age, very beautiful and successful and they were each other's' best friends. They had lots of friends and felt deep love for each other, something I never had in reality.” (FG)

The two quotes explicitly contrast unsatisfactory existent family experiences with imagined ones. The compensatory family support in fantasy seemed to have become so rewarding that our deprived respondents simply preferred to spend most of their available waking hours in that enhanced inner world. Another form of reality embellishment emerged in MD contents involving augmented social status due to personal success.

Social status. Apparently motivated by similar needs, the second prevalent content theme in MD was related to the achievement of success, recognition, power and fame:

“Most of the time my daydreams have a good ending for me, often I become rich. I’ll dream that I’m getting some power like a payback to everybody who told me that I would be an unsuccessful person...I stand tall and say: I did it, I got what I wanted in life. Mom should be proud.” (RS)

“The first memory that I have is a daydream about saving people. I think I was in 1st grade or 2nd grade, and I would imagine that something terrible would happen to my classmates, and I would save them, and I still do this kind of stuff” (ST)

I love to picture myself as a musician of some sorts, with awesome musician friends. People I know suddenly realize that I am an awesome musician, that I went on tour when I was younger and no one knew this secret and then all of a sudden they find out and they also suddenly realize that I am also gorgeous and that I have a sense of humor...I get addicted to that because I can’t replicate that in real life” (UV)

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The first two quotes are from interviews with men who were subjected to incapacitating parental criticism. They grew up feeling inadequate and insecure. Their fantasy lives seem to provide them with a desired sense of achievement and recognition. The rewarding experience of commanding social skills that are absent in real life is also apparent in the third quote. The readers can only surmise the inevitable deepening sense of inadequacy these persons may experience daily as they face their bleaker realities. These findings are in line with previously reported data on MD themes (Bigelsen & Schupak, 2011; Somer, 2002).

Experiential properties of the MD experience

Sensory components. All our interviewees described various visual attributes associated with daydreaming. For some the scenes were either two-dimensional or “dreamy”:

“I am a very visual person. Daydreaming is something that I see. It is like watching a film. There are no smells, I do not see in great detail but the pictures are pretty clear, as if you are watching a movie. I don't have a sense that I am actually there.” (EF)

“It is visual like an actual dream with a tunnel vision on the person I am talking to and without much detail about the surrounding. I can hear the voices of the people in my daydream...When they talk to me it is not like my own voice coming back to me or voices from outside. It's theirs” (IJ)

Yet others reported the experience to be sensually very similar to external reality:

“It feels like a normal conversation like me and you are having.” (BC)

"It is like a reality with colors, smells and tastes. I can hear outside noises but I can block them out." (KL)

"I daydream with open eyes...but I can clearly see and hear my daydream as if it were real." (AB)

Our respondents reported wakeful fanciful imagery that stimulated most of their senses in the absence of corresponding external stimuli. In contrast to psychotic or substance-related hallucinations, these experiences do not only contain complex narratives, but are also associated with insight as to their self-generated origin and their divergence from reality. MD has a compulsive "hallucinatory" component similar to Involuntary Musical Imagery (INMI or "earworms"), described as the experience whereby a tune runs through the mind over and over without conscious control (Williamson, Jilka, Fry, Finkel, Müllensiefen, & Stuart, 2012). Yet MD differs in its originality from INMI, which essentially represents memories of previously heard tunes.

Emotional properties. Unlike INMI, MD imagery is affect-laden, but in contrast to mostly frightening psychotic hallucinations or post-traumatic flashbacks and re-experiencing, MD imagery can be rich and diverse. For example:

"I'll be crying, I'll be laughing, all kinds of emotions. Sometimes I'll be sad, sometimes I'll be happy, it depends on what's going on." (BC)

"Sometimes the woman I fantasize about loves me and I'm happy, sometimes she hates me and I start crying in reality, I mean I'm daydreaming and I'm crying."
(ST)

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Salient in our respondents' descriptions was the importance of experiencing negative affect during MD. For example:

"I can make myself laugh or cry. I can make myself sad but I still keep replaying the sad scene. I can't explain that. I am still, like, creating a sad story for me and I know it is not real. It is like watching a sad movie, you do that for entertainment and it might make you cry, but you still think it is a good movie." (UV)

"I feel the need to create negative situations in the daydream to arouse a certain feeling inside of me that obviously isn't positive, but I do it anyway, it's another one of the addictions of MD. I have characters in my daydreaming that I don't particularly like, that I kind of make as poisonous as possible." (TU)

The keyword in both accounts was the verb *create*. Many respondents reported actively seeking the experience of aversive emotions. None of the interviewees described these fantasies as facilitating grief or as processing past trauma. Not only did their scripted upsetting imagery evoke negative feelings, they were also somehow enjoyable. This uniquely human phenomenon was termed 'benign masochism' or 'hedonic reversal' (Rozin, Guillot, Fincher, Rozin & Tsukayama (2013), an enjoyment of negative sensations and feelings thought to be possible in the context of feeling safe and reflecting pleasure at "mind over body." One participant explicitly compared negative imagery in MD with the pleasures of watching a thriller movie:

"It's like going to a 3D movie and becoming part of a virtual reality in which everything is super vivid and exhilarating and gives you lots of energy, or everything is so riveting and emotional and you can have a good cry." (EF)

Limitations

A major limitation of this study must be acknowledged. While the sample size was internationally diverse and relatively large for qualitative research, the knowledge it generated may not be generalizable to other MDers not involved in this inquiry. Nevertheless, it is our impression that the phenomenology presented here reflects not only that identified in the two existing studies on MD (Bigelsen & Schupak, 2011; Somer, 2002) but also the main discussion topics on the numerous MD venues on the World Wide Web. Although researchers are not personally acquainted with the respondents in most qualitative research interviews, another possible limitation of this study is associated with potential hindrances to revealing very personal information and all fantasy contents during a single remote interview with a stranger.

Summary, conclusions and future directions

The experiential picture of MD emerging from our data portrays a common mental activity gone awry. Participants in this study expressed a desire for help for their time-consuming habit, and the resultant social, academic and vocational dysfunction, MD embodies what seems to be a natural capacity for vivid imagery, a trait that propels regular daydreaming into a mind-based entertainment center with realistic multi-sense stimulation. MD can be activated at will to produce a rewarding experience based on a profound sense of presence, hence providing the illusion of a parallel reality. The activation of MD seems to require several conditions: Social interaction is incompatible with this inwardly absorbing activity, so that solitude is necessary. Additionally, kinesthetic activity and exposure to evocative music also appear to be requirements. Because MD sometimes involves mimicry and vocalization, MDers might be self-conscious about getting lost in their inner worlds in

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public, reinforcing a need for solitude. The fantasized mental scenarios are often woven with emotionally compensatory themes involving competency, social recognition and support.

This study adds to the scant body of literature on MD, but clearly further large-scale studies are needed to improve the understanding of the etiology and mechanisms of MD and to develop accurate assessment instruments and curative interventions for MD sufferers.

Recent studies have demonstrated that MD is a valid and stable variable of abnormal daydreaming (Somer, Lahefeld, Jopp & Bigelsen, 2016). MD was also shown to differ significantly from normative daydreaming in terms of quantity, content, controllability, distress and interference with life functioning. Results also demonstrated that those with self-identified MD endorsed significantly higher rates of attention deficit, obsessive compulsive and dissociation symptoms than controls (Bigelsen, Lehrfeld, Jopp & Somer, in press).

Future research needs to shed light on the various pathways that may lead to MD. For example, childhood adversities appeared important in one clinical study (Somer, 2002) but a larger study of a non-clinical MD sample indicated that only 27% of the sample reported trauma histories (Bigelsen & Schupak, 2011). Another illustration of the diversity of the phenomenon was provided in a peer-reviewed case study that described a patient with MD and no other apparent clinical psychiatric disorders or childhood adversity. The patient was successfully treated for over 10 years with fluvoxamine therapy that reportedly helped control her daydreaming (Schupak & Rosenthal, 2009). Future research should identify the role of serotonergic irregularity in MD and the possibility that some compulsive daydreaming may be related to obsessive-compulsive spectrum disorders or behavioral addictions. Finally, MD features an altered state of consciousness closely associated with dissociative absorption (Somer, Lahefeld, Jopp & Bigelsen, 2016). While absorption is considered a non-pathological form of dissociation that is less associated with childhood trauma (Irwin, 1999), future

studies should determine whether childhood trauma could result in a pathological form of absorption like MD.

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Table 1. Demographic Characteristics of Participants

Participant	Gender	Age	Marital Status	Occupation	Country
AB	Male	20	Single	College/University Student	India
BC	Female	19	Single	College/University Student	USA
CD	Female	28	Single	Secretary/Student	Israel
DE	Female	18	Single	High School Student	Israel
EF	Female	27	Married	Social Worker	Israel
FG	Female	34	Single	Disability	Israel
GH	Female	25	Single	College/University Student	USA
HI	Female	38	Married	Field Representative	USA
IJ	Female	25	Single	College/University Student	USA
JK	Female	20	Single	Unemployed	USA
KL	Female	20	Single	College/University Student	USA
LM	Female	33	Single	Disability	USA
MN	Female	25	Single	College/University Student	Austria
NO	Female	24	Single	Lawyer	Indonesia
OP	Male	18	Single	College/University Student	Turkey
PQ	Female	42	Married	Homemaker	UK
QR	Male	28	Single	Unemployed	Argentina
RS	Male	19	Single	Student	Turkey
ST	Male	35	Single	Musician	Canada
TU	Female	18	Single	Student	Ireland
UV	Female	25	Married	Writer	USA

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