Dream and Blog Content Analysis of a Long Term Diary of a Video Game Player With Obsessive Compulsive Disorder

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A case study of a young man who is an avid video game player and designer is the focus of this paper. His online Website offers over 800 dreams, of which over half were content analyzed using the Hall and Van de Castle system. Also available were daily blogs. Thus, several research questions could be addressed. Did the diary evidence consistency across time? Did the dreams evidence incorporation of activities discussed in the daily blogs from the day before the dream? Did this one individual's dream diary echo former research into the dreams of video game players? A final question was addressed because of the diagnosis of the diarist as having Obsessive Compulsive Disorder (OCD). Did the dreams of this young man echo previous research into dreams of OCD sufferers? The findings were that the diary was consistent across time and there was incorporation of some elements of the daily blog into subsequent dreams. Some aspects of his dreams echoed previous video game players' dream findings, like more dead and imaginary characters. Finally, the OCD analysis only partly replicated the previous research into the dreams of those with OCD.

Keywords: video games, OCD, dreams, blog

The beauty of a case study of a long term dream and daily events diary is that it allows us to appreciate the complexities of a lived life. Too often, researchers slice up the human condition to examine only one element. In point of fact, we all live complex, interconnected lives. Thus, a single case dream/blog diary offers such an opportunity.

For the most part, our research studies into the dreams of video game players have been collecting dreams on a one time basis as either morning after recall or longer term recall (Gackenbach et al., 2009). While we have finished a couple of

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We thank the diarist who not only gave us permission to study his diary but also answered many inquires about it promptly and in considerable detail. He has been a joy to work with and we would like to express our appreciation.

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2-week dream diary studies, the dream literature also recommends longer term dream diaries be gathered from accomplished dreamers. This is to show patterns across time and to facilitate more depth of analysis. One such diary with extensive autobiographical information was located online. It has both a dream diary and extensive blog entries over a 13-year period and thus serves as an ideal case study. The justification for such single case studies of long term dream diaries will first be considered, and because of the presence of daily activity blog entries in this diary, we will also consider the continuity hypothesis. Finally, while a committed game player and designer, the diarist also has Obsessive Compulsive Disorder (OCD). Therefore, a brief examination of how OCD might have affected his dreams will be discussed.

Dream content, when first inspected, tends to look as though there is no pattern or consistency. Domhoff (1996) recognized that dreams vary from day to day and week to week, but understood that this change in dreams is largely because of the fact that most recalled dreams are soon forgotten after waking. The forgetting of dreams after waking creates the sense that dreams are just "an aimless concoction of jumble and jive" (p. 134). Using the long-term dream diary method, it has been shown with multiple dreamers that dreams show little change over 30 or more years (Domhoff, 1996; Kramer & Roth, 1979).

For the dreams of an individual to be considered useful for this type of analysis, there must be a sufficient number of dreams for consistency to be created among dreams. Domhoff (1996) found that for consistency to appear in dreams there needs to be between 75 and 100 dreams analyzed. Larger dream diaries are better for analysis as they can be sub divided into different dream series, each containing the 75 to 100 dreams that are needed for consistency. By subdividing a dream diary into series, any differences found between them can be analyzed to find important elements. However, in a dream analysis of 'The Engine Man,' Domhoff (1996) was able to show that some individual consistencies can be found with as little as 25 dream reports, although there is not very strong statistical support for this small a number. In the diary examined here, dreams are categorized by date and by dream types. These types were identified over time by the dreamer himself. For half of his 11 categories, there were 75+ dreams and all but two had 25+ dreams.

Once the dream series has been analyzed and coded, it must be checked for consistency against the norms of both the dreamer and the general population. Domhoff (1996, p. 132) has labeled three types of consistencies to look for when the series is being compared to the rest of the dream series: absolute consistency, relative consistency, and developmental regularity. Absolute consistency is the frequency or percent of an element in the dreams that remains the same year after year, such as a high number of food items appearing in the dreams consistently. Relative consistency is the incidence of one element in the dreams which always exceeds the incidence of another element. For example, if there were consistently more animals in the dreams than male characters. Developmental regularity is the consistent increase or decrease of an element in the dreams from one period of time to the next. This could be a constant decrease in the number of times a character, such as a parent, appears in the dreams as the dreamer ages. Domhoff reported that relative consistency is the most common type found, followed by absolute consistency then developmental regularity, which is fairly uncommon.

WAKING-LIFE INCORPORATED INTO DREAM CONTENT

Because of the daily activity blog entries available on this dreamer's online diary, a consideration of the continuity hypothesis is possible. This hypothesis was introduced by Calvin Hall (King & DeCicco, 2007) and holds that life events have a large influence on what an individual dreams about. Studies show support for the continuity principle through comparisons of dream report analyses and different aspects of waking life, including interpersonal relations, environments (e.g., Nielson, Kuiken, Alain, Stenstrom, & Powell, 2004; Punamaki & Joustie, 1998), physical health, mood/emotions, self construal (e.g., King & DeCicco, 2007), as well as specific events (e.g., Bulkely & Kahan, 2008; Schredl & Erlacher, 2008).

Despite being creatively displayed, the majority of dreams are more realistic and based on everyday life than is suggested by traditional dream theories (Domhoff, 2005). Through research on laboratory-collected and home-based dreams, Domhoff (2005) reports that a significant percentage of dream content focuses on personal concerns surrounding social interactions with family, friends, and coworkers.

As further evidence that dream incorporation emphasizes everyday personal concerns of waking life, as opposed to broader cultural or political concerns, cross-cultural comparisons were made (Domhoff, Meyer-Gomes, & Schredl, 2006; Punamaki & Joustie, 1998) that supported Domhoff's thesis. Another meaningful and deeply personal experience is illness. King and DeCicco (2007) suggest that the state of a person's physical health is reflected in dream content.

Research supports a relationship between mood and emotional states and dream content (e.g., King & DeCicco, 2007; Schredl, 2006; Schredl, Pallmer, & Montasser, 1996). Finally, Nielson et al. (2004) found a link between dream content and prior events characterized by interpersonal interactions, spatial locations, resolved problems, and positive emotions.

In reviewing such factors that affect the continuity between wakeful events and dream content, Schredl (2006) found that the emotional intensity of waking-life events, not necessarily the type of emotions, are the important factor for incorporation into subsequent dreams.

OCD AND DREAMS

The diarist in this case study was diagnosed as a child with OCD. Until his 18th birthday, he was on various drugs to manage it, but has been medication free for the last 6 years. Here we will briefly consider the relationship of OCD to dreams.

In ordinary circumstances, obsessions and compulsions are normal adaptive behaviors and are not considered a problem until they become persistent and intrusive and cause substantial distress or impairment. OCD is a chronic anxiety disorder that affects ~2.6% of the population (Durand, Barlow, & Steward, 2008). Onset of OCD is typically during early adolescence or adulthood however symptoms before the age of 18 suggest a higher likelihood of genetic predisposition whereas later onset suggests that the behavior has been acquired or learned (De Silva & Rachman, 2008).

Emotions experienced during waking life are stored within the amygdala and later those emotional memories tend to be expressed during REM sleep. If this is the case, then OCD victims who experience heightened arousal and anxiety during the day should also experience these emotions during REM sleep. Two studies were found that examined the dreams of OCD individuals (Külz, Stotz, Riemann, Schredl, & Voderholzer, 2010; Sauteraud, Menny, Philip, Peyre, & Bonnin, 2001). The first study by Sauteraud et al. (2001) looked at dream content from people suffering from OCD and from subjects who were not diagnosed with a mental disorder.

Because OCD patients tend to experience more anxiety and negative emotions than nonmentally ill people during waking life, Sauteraud et al. assumed that emotions of anxiety, sadness and sense of failure would be higher in OCD patients. This was not found. Furthermore, one-third of both OCD and controls evidenced dreams containing obsessive–compulsive themes. Sauteraud and his colleagues concluded that the daily lives of OCD patients do not affect the content of their dreams. Külz et al. (2010) also compared dreams of OCD patients to healthy controls. Untreated OCD patients' dreams showed significantly fewer positive contents in their dreams.

In the present inquiry, it's expected that the dream diarist, NS, will evidence consistency across his diary. His dreams are expected to reflect his waking activities and especially his video game play and his design work. Finally, because the previous research on OCD dreams was mixed, it is unclear how NS's OCD would affect his dreams.

METHOD

Participant

This single case study concerns the dreams of a young man we are calling NS, from the time he is 20 to 25 years old. NS lives in the Midwestern United States with his parents. When he was 12 years old, he began recalling his dreams so that years later he recoded these in his online daily activity blog and dream posts. His record was sporadic in those early years. Although the diary is openly accessible to all Internet users, there have been no inducements nor promises made to this individual by this research team. NS's permission has been garnered and University ethics approval has been received.

Procedure

Throughout the year long inquiry (summer 2009 to summer 2010) into the online diary, the principle researcher maintained email communication with this young man. Over the 12 months, about 30 emails were received from the subject regarding this project. He primarily wrote in response to questions posed by the principle researcher.

Dreams ($n = 447$) were selected from the online archive of 831 dreams on NS's Website as of July 2009. The selection was based on these criteria: over 50 words

but less than 500 words[1]; with a clear date as to when the dream occurred; with an activity blog entry from the night before the dream; and from any of the clearly defined dream categories (i.e., mud, video game, water, nightmares, travel, weird, fun, computer, school, and exploration), thus the "other" category dreams were deleted from subsequent analysis.

Three student coders from summer 2009 through April 2010 coded roughly every third dream from each dream group identified by NS. The Hall and Van de Castle (HVDC) system of content analysis as developed by Domhoff and Schneider (2008) was used. Each coder first reached reliability of 80% or more with 10 dreams that were drawn from a separate group of dreams and previously coded. Extraneous comments by the dreamer were not included in the dream coding. All coders were kept blind to anything about the dreamer, other than that he was a gamer and had a long term dream diary. Toward the end of their coding time, each coder's reactions to the dream diary were solicited and each coder was debriefed.

A second set of dreams was drawn from the population of available dreams that occurred during the period of time when the subject was taking medication for his OCD. Medications stopped when he turned 18 as they were no longer covered by his parents' health insurance. NS explains about this medication use period:

> I started taking meds for this back when I was 10 (about 1994). The most recent meds taken was Risperdal (sp.?), taken via injection. Geodon preceeded this (tablet form) with another gap without meds before this. The time before this, before about 2002, was where meds were very common and constant. Very few dreams are recalled from these times. I don't recall the order, but I had Paxil (tablet), Prozac (capsule; gave me a major upset stomach after a burp with a 40% chance of occurring), and a few others I don't readily recall. (August 12, 2009, personal communication)

These pre-2004 dreams (n = 109) were sorted to find as many as possible with 50 words or more. They were not reliably associated with specific dates, other than year, nor with blog entries. However, they were coded with the HVDC system to allow comparison to dreams when no medication was being used.

Blog entries were read by the principle researcher and a student assistant, who used grounded theory methods[2] to derive coding categories from the blog itself. As they read the blog, these two met frequently to discuss additions and changes to the coding. Meetings were held over 3 months, developing codes, coding and revising the blog coding system, and eventually resulted in a representative and usable code book.

The coding categories settled upon were: computer use, video game play, music listened to, other media mentioned, places went, mood expressed or implied, physical body references, dream recall, measurement, and people. Most blog coding was done by act frequency as with the HVDC. Two students were trained on the code book and reached 80% overall reliability before they moved to their own coding of blog entries. These reliability figures ranged from 50 to 100% over 15 act frequency categories. One student coded about three-quarters of the entries.

[1] The word count was, at this stage, an estimate based upon a measurement of the length of the entry thus in point of fact word count ranged from 51 to 673 words per dream entry.

[2] Grounded theory is a qualitative method of inquiry that begins from the data to build a theory or in this case to build a coding system (Strauss & Corbin, 2008).

Finally, NS's own evaluations of how much he liked each dream along several self generated dimensions (i.e., weird, scary, fun, scenery, story, nature of, and general) were entered into the database. Thus, for each dream, information was available on the judge's HVDC content analysis of the dream, blog content analysis of the day before activities, and dreamer defined dream type and dream liking.

RESULTS

It is important to keep in mind when reviewing the following statistics that NS's entire Website is about this young man's inner life. From his dreams, to his inventions, to his tips and tricks, it is an extremely detailed view of NS's psyche. The Website map lists 10 categories of information available. That seems modest until you begin to explore the categories, which include: (1) Tips and tricks (30 subcategories), (2) Help promote my Website (no subcategories), (3) Features (211 subcategories), (4) About me (118 subcategories), (5) Games index (42 subcategories), (6) Stories (67 subcategories), (7) Frequently asked questions (no subcategories), (8) Animated GIF collection (no subcategories), (9) Game development (74 subcategories), and (10) Other (20 subcategories). The largest categories are "features" and "about me." Most subcategories link to at least one separate page and some to great scores of pages, as in the case of the dream journal subcategory under about me. In addition to the cover page about his dreams, this young man also has 85 pages of up to 10 dreams per page all organized by dream type. When asked to estimate the relative percentage of dreams in his Website NS wrote, "With the 985 pages on my site . . . and 94 pages for my dream journal, . . . about 9.5% of my site is devoted to dreams" (June 11, 2010 personal communication). That 10% is 831 dreams. Thus, one gets the idea of the detail that has gone into NS's Website.

This individual's dream diary was selected because he claimed to be a serious and long time video game player who started playing at age 4. NS has one section of his Website devoted to his history with and preferences regarding video game play. He lists eight playing platforms including Atari, Nintendo, Playstation, and his computer. He claims to have played 124 different games on these platforms ranging from 15 min to 3,700 hr of play each. In the blog entries associated with the dreams selected for content analysis, NS names 34 different games but some considerably more than others. Various Final Fantasy games were mentioned 68 times and a "2D game," that he is developing, was mentioned 80 times. The types of games he prefers tend to be rated Everyone through Teen. As far as we could tell none were rated mature or adult. In a personal communication (June 17, 2010) about his gaming history NS wrote:

> Starting in 1988 (as told by my parents), I began playing video games, starting with the Atari 2600 . . . As time went on, progressively fewer games were of interest and the systems got more expensive which eventually caused a major decline in my gaming time, from 30 games of interest . . . to just 2 . . . With boring sports games, excessively violent shooters and fighting games, high distrust toward online-only games, the disappearance of platformers, the high number of T and M-rated games, and the fact the fun stuff (glide hops, drag-free falling, etc.) are no longer present, among other reasons, I'm now only focused on playing older games. The only aspects of video games that have survived otherwise intact is my childhood dream of creating my own game . . . and listening to video game music.

Dream Incidence and Recall

We used the technique of previous long term dream diary analysis (Lortie-Lussier, Cote, & Vachon, 2000) and split the diary/blog entries into two 3-year periods. Thus, time changes were from the first half of the diary (2004–2006; n = 230), compared to the second half (2007–2009; n = 215). The actual dates were October 2004 through July 2009. Before October in 2004 reliable blog entries were not available. A third set of dreams were compiled that occurred during the period when the subject was on medication because of the OCD diagnosis (1998–2003; n = 109). This last set was compiled to look at any effects that medication might have had on his dreams, relative to the nonmedicated years.

Just over half of the available dreams were studied, therefore it was important to examine if the selected dreams used for blog/dream analysis echoed the entire population of dreams. The number of dreams in the diary as a function of year for the total population of dreams compared to dreams selected for analysis evidenced the same distribution as can be seen in Figure 1. They were also highly correlated (r = .96). A similar distribution was found for the dreams selected for content analysis when viewed as distributed across dream type categories (r = .97). Both distributions are portrayed in Figure 1.

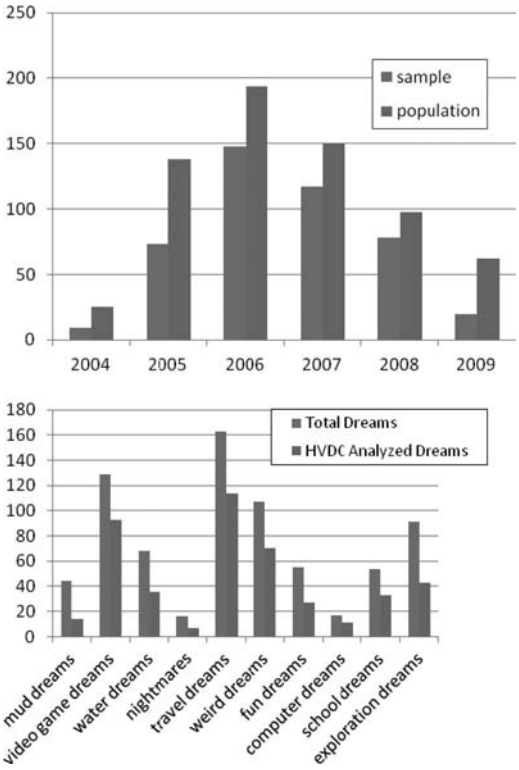

Figure 1. Relative incidence of total dreams in the diary as of July 2009 and dreams selected for content analysis as a function of year and type of dream.

Before moving onto the content analysis of NS's dreams, his dream recall was examined. This young man details his daily dream recording routine, "I wake up . . . If I have a new dream I recalled, I write the details on it first right after jotting down the Time I woke." NS's 831 dreams recorded over 8 years is a bit over 100 a year or about 3 a week. This in and of itself would be considered fairly high dream recall. He also provides dream recall information on each dream. This information is given as "percent intact." Of this dream recall estimate NS explains:

> How much of the dream as a whole has been recalled as a percentage. Dreams are almost never 100% intact where all of the details, even the highly unimportant, most minute detail is recalled.

In a *t* test of first versus second half of the diary there was a difference in dream recall, $t(441) = 3.986$, $p < .0001$. The 230 dreams with this information from the first half had an average recall of 26% ($SD = 23\%$) while the 213 with this information from the second half had an average recall of 18% ($SD = 16\%$). NS's self generated dream recall measure correlated with the number of words in the dream entry ($r = .53$, $n = 445$, $p < .0001$). Not surprisingly, the number of words in each dream entry went down significantly for the second half of the diary, $t(443) = 2.798$, $p < .005$. The mean number of words per dream entry for the first half of the diary was 280.66 ($SD = 135.93$) while the second half words mean was 244.66 ($SD = 135.30$). NS has noticed that his dream recall has dropped and when asked why he thinks that is he attributes it to playing a specific game and designing another.

HVDC Content Analysis of Dreams

Domhoff speaks of three kinds of consistency that a long-term diary should evidence; absolute consistency, relative consistency, and developmental regularity. The absolute consistency criteria, that is, frequency or percent of an element in the dreams, remains the same year after year, can be seen in Figure 2. Figure 2 also shows the HVDC male norm sums (from the Domhoff Website) in the black bar. The pattern of NS is the same as the norms. That is, highest numbers are for objects, modifiers, and activities, with moderate numbers of characters and settings. The lowest sums are for all other general HVDC categories. Norm-NS differences will be taken up shortly.

Relative consistency was computed with a series of one way ANOVAs for each HVDC sum score across 5-years (i.e., 2004 was dropped as it had too few dreams). All but two were not significant differences, thus showing relative consistency. Characters sum changed over time, $F(4, 435) = 2.391$, $p < .05$ as did emotions, $F(4, 435) = 2.848$, $p < .024$. Both dropped over time.

The characters present in dreams were one of two features of long term dream journals that Domhoff (2005) found to be significant with regards to the dreamer's life. It appears that more familiar people were in this young mans life while fewer characters indicative of video game play were evident in his dreams as he moved through this 6-year period. This exception to relative consistency can be interpreted as supporting developmental regularity. One would expect that as a young man moves from late adolescence (first half of the diary dreams) to early adulthood (second half of the diary dreams) that the characters in his waking life would be less

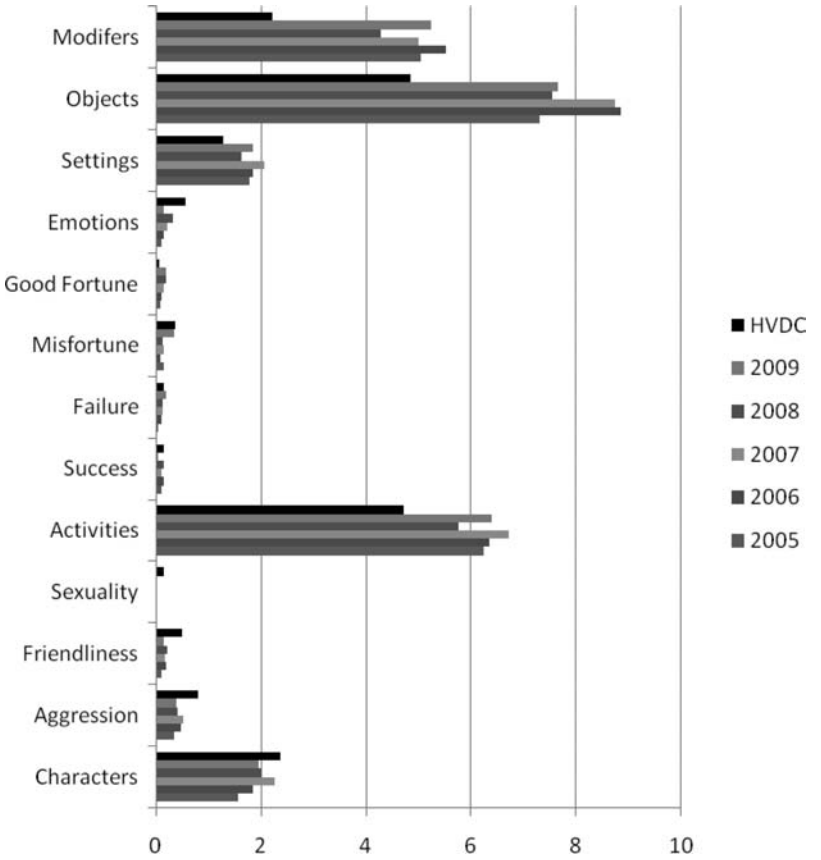

Figure 2. HVDC category sums as a function of year.

those associated with a play activity and more those associated with his interpersonal life.

Putting consistency issues aside, what does the HVDC analysis reveal about this young man? The H-profile of first and second half dreams relative to the HVDC norms is portrayed in Table 1.

In terms of characters there seems to be an absence of friends in his dreams with dream characters being dominated by family and video game play characters (i.e., dead or imaginary and animals[3]). For social interactions NS evidenced no difference in aggressor or befriender percents from the male norms but significantly more Aggression/Friendliness Percent and physical aggression. These last two are often found in other video game players' dreams (Gackenbach et al., 2010). The social interaction ratios are not tested with the H-statistic but they were all lower than the norms that seems to indicate a fairly loner lifestyle. While there was no difference in indoor settings from the norms, there were significantly fewer familiar settings, which likely echoes game play rather than real life circumstances as will be seen in the blog analysis.

[3] NS's family has dogs and those may be part of the animals category.

Table 1. Act Frequency Percentages, Number of Dreams, and Significance of NS's Dream Diary First, Second, and Male Norms

	HVDC male norms	First half	Second half	*N* for HVDC male norms	*N* for first half	*N* for second half
Characters						
Male/female percent	67%	65%	53%*	873	113	118
Familiarity percent	45%	41%	33%*	1,108	380	385
Friends percent	31%	06%*	03%*	1,108	380	385
Family percent	12%	27%*	26%*	1,108	380	385
Dead and imaginary percent	00%	14%*	03%*	1,180	422	465
Animal percent	06%	16%*	08%	1,180	422	465
Social interaction percents						
Aggression/friendliness percent	59%	75%*	68%*	546	131	139
Befriender percent	50%	52%	50%	203	31	42
Aggressor percent	40%	51%	40%	253	90	80
Physical aggression percent	50%	78%*	71%*	402	108	103
Social interaction ratios						
251657216						
A/C index	.34	.26	.22	1,180	422	465
F/C index	.21	.08	.09	1,180	422	465
S/C index	.06	.00	.00	1,180	422	465
Settings						
Indoor setting percent	48%	48%	49%	586	360	353
Familiar setting percent	62%	33%*	30%*	320	240	184
Self-concept percents						
Self-negativity percent	65%	58%	52%*	809	164	192
Bodily misfortunes percent	29%	23%	17%	205	31	35
Negative emotions percent	80%	90%	90%	282	41	51
Dreamer-involved success percent	51%	54%	62%	141	50	50
Torso/anatomy percent	31%	27%	36%	246	55	55
Dreams with at least one:						
Aggression	47%	28%*	27%*	500	243	220
Friendliness	38%	13%*	17%*	500	243	220
Sexuality	12%	00%*	00%*	500	243	220
Misfortune	36%	10%*	12%*	500	243	220
Good fortune	06%	10%*	15%*	500	243	220
Success	15%	12%	13%	500	243	220
Failure	15%	09%*	08%*	500	243	220
Striving	27%	18%*	19%*	500	243	220

* $p < .05$.

Interestingly the five self-concept variables showed no difference from the norms and the one difference, second half dreams differing from norms, was in the direction of less self-negativity. So, while he may have a fairly isolated existence he seems happy. Like characters, the list of dreams with at least one incidence of a social interaction showed the most differences from male norms. All were less than the norms with two exceptions. That is, there were more dreams with at least one incidence of good fortune but there were no differences in the number of dreams with success. While this young gamer had fewer sexual, friendly, and striving dreams he also had fewer aggressive, misfortune and failure dreams. Again one can conclude that he is fairly well-adjusted to his life circumstance based on these dreams.

NS's Self-Evaluation of His Dreams

Based on the judge's evaluations, we can see that this young man's dream diary shows the three types of consistency called for by Domhoff (1996). There were two types of evaluations of dreams that were available from the dreamer himself from over this 6-year period, dream type and dream liking classifications. These were also examined to see whether from the perspective of the dreamer himself, the dreams were relatively consistent. This analysis is constrained by his categories such that developmental consistency might be hard to ascertain but absolute and relative consistency can be examined. Figure 3 shows the split half analysis of dream type.

Here are brief excerpts of definitions of each dream type from the subjects Website:

Mud dreams: These involve mud and occasionally quicksand.

Video game dreams: These involve a video-game-like nature.

Water dreams: These involve water.

Nightmares: These are scary dreams.

Travel dreams: These involve travel with little exploration involved.

Weird dreams: These are dreams that are bizarre and make little sense.

Fun dreams: These dreams are dreams where I had a lot of fun.

Computer dreams: These dreams involve computer-related things not of video games.

School dreams: These dreams have a lot to do with school in some way.

Exploration dreams: Like travel dreams, only where considerable exploration is involved.

Individual chi-squares for each dream type evidenced only two showing significant differences (Exploration: $\chi^2(1) = 5.233$, $p < .022$; Computer: $\chi^2(1) = 4.455$,

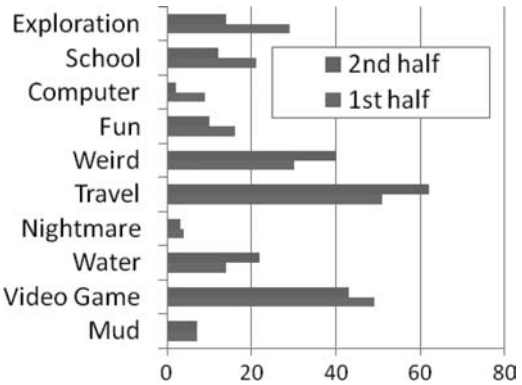

Figure 3. Number of dreams in the first versus second half of the diary as a function of dream type.

$p < .035$). The most frequent dream types are travel about which he further explains:

> They could be visiting foreign places (even in my home area), but not really doing much there in the way of exploring. One of my favorites is a house that was on three continents that would otherwise not be possible and a rather weird plane flight to California.

The second most common are the video game dreams, on which he comments:

> I've had a Frogger-related dream, several dreams featuring remakes of Zeliard, others featuring Metroid, Bubsy, Sonic, Spyro, and other classics. These dreams are generally well-forgotten, but there are plenty of graphics to explain things, more than any other category does.

As in previous research on gamers' dreams (Gackenbach et al., 2010) his least frequent dream type are nightmares. He comments "Nightmares are a rarity to me and thus there aren't many in here. Some of my most interesting ones are the one featuring the UFO and a mysterious light, and one involving a strange disease and the only known dream where I supposedly 'died.'"

In this diary, each dream is also rated by the dreamer along several dimensions of positive or negative evaluations. Here is a summary of these dimensions:

a. General: Positive values indicate that it is liked and negative values indicate that it is disliked. One means neutral and that it's neither liked nor disliked.

b. Nature: This tells how much I like the nature of the dream or, most commonly, just how much I like the dream. The more I like the nature of the dream, the higher the rating.

c. Story: This tells how much I liked the story.

d. Scenery: This tells how much I like the scenery. Scenery is one of the most remembered aspects of my dreams and almost all of my recalled dreams have at least one recalled scene from it.

e. Fun: This tells how fun the dream was. This has the biggest impact on the rating of the dream, twice that of the scenery, story, and nature ratings . . . Dreams with a high fun rating are in the fun category. Chances are, if the fun rating is high, gliding, using the float run, and/or high-speed movement is involved, but is not always the case.

f. Scary: This tells how scary the dream was. Like the fun value, it has a very strong impact (twice that of the scenery, story, and nature ratings) on the rating only negative instead of positive. Dreams with a high scary rating are in the nightmares category.

g. Weird: This tells how weird the dream was. It has very little impact on the ratings. Normally, everything except the nature rating (and indirectly the general rating) aren't affected. Dreams with a high weird rating are in the weird category.

It can be seen that there is overlap between NS's dream type system and his dream rating system. They are not, however, exactly the same.

Half way through the diary (January 25, 2007) NS changed his rating system from 5 as neutral to 1 as neutral. To compare the ratings from the first to the second half of the diary, each rating from the first half was converted to the rating system used in the second half. It should be noted that this was not a simple number replacement, but involved a formula that NS created for the conversions and claims that he uses now for his ratings of the dreams. Once all dreamer evaluations of dreams were converted from the first half, then *t* tests were computed on dream descriptors of first half versus second half dreams. None were found to be significant. Thus here the consistency of his dream diary is confirmed and in terms of his self evaluations.

Blog Analysis

Another advantage of this dream diary are NS's extensive blog entries. He has 58 separate pages organized by year and month of blog entries. These blogs offer an opportunity to examine the continuity hypothesis in this long term diary. General categories that emerged for the researchers in the blog were: computer use, video game play, music listened to, other media mentioned, places went, mood expressed or implied, physical body references, dream recall, measurement, and people. Of interest is the question: Were the blogs consistent across the diary as the dreams generally appeared to be? The first to the second half of the diary on act frequency of blog categories are portrayed in Figure 4.

The strongest finding portrayed in Figure 4 is the preponderance of measurement references in the blog (mean number of mentions per blog = 10.13, SD = 8.38) followed by software ones (mean number of mentions per blog = 4.93, SD = 3.98). Not surprisingly, a one-way repeated measures ANOVA on act frequency blog measures returned a significant result ($F(1, 445) = 332.573$, $p < .0001$, partial $\eta^2 = .428$). All other act frequency blog categories have two or fewer mentions.

The overwhelming measurement entries speak to the OCD component of this young man's life. Thus, it is of interest to look closer at this component of the NS's blogs. In the coding sheet, the category of "measurement" was defined as any reference to measurement other than time fell asleep and/or awoke. The

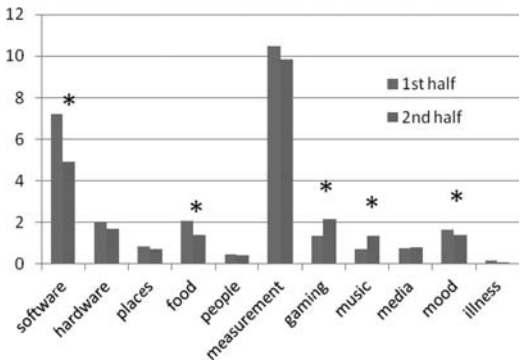

Figure 4. Means of selected blog entries measuring act frequency.

act frequency of each of the following types of measurement which were mentioned in the blog was assessed with another repeated measure one way ANOVA on the six measurement subcategories ($F(5, 2230) = 177.554$, $p < .0001$, partial $\eta^2 = .285$). The categories with means, *SD*s are listed below for the 447 blogs coded:

a. Count (x = 3.36, *SD* = 3.701): number of times he mentions a count of something other than what is listed below

b. Percent (x = .77, *SD* = 1.110): number of times he mentions the percentage of something

c. Fraction (x = .51, *SD* = .896): often near percentage but not the same thing

d. Computer/game (x = 1.86, *SD* = 2.857): if he mentioned the number of things like dpi, GB, RAM, or screen size, all these are measurements of various computer components. Levels in game, number of kills, number of character changes, and so forth (any game relevant measurement)

e. Time (x = 3.18, *SD* = 2.896): other than sleep/wake times like dates or years or hours to complete something

f. Other (x = .44, *SD* = 1.310): distance, length, width, height, temperature, speed, volume, weight, cooking, area, currency, electricity, misc.

The peaks of measurement were with count and nonsleep related time. These were followed by computer and gaming related measurements.

Significant time period differences were found for the number of mentions in the blogs for software, $t(365) = 6.518$, $p < .0001$, food, $t(171) = 2.356$, $p < .02$, gaming, $t(443) = -4.608$, $p < .0001$, music, $t(442) = -5.174$, $p < .0001$ and total mood references stated and implied, $t(443) = 2.139$, $p < .033$. NS's music tastes are unique. He explains:

> Day in and day out, I listen solely to video game music played at different speeds, often for hundreds, thousands, or even tens of thousands of loops in one go (132,500 is my current record, with a 750 margin of error). By speeds, I mean editing the sample rate (via a hex editor) of WAV files to affect both the tempo and pitch simultaneously. Halving the speed cuts the tempo in half and reduces pitch by a full octave (12 semitones). (personal communication, June 17, 2010)

Software, food, and mood references decreased while gaming and music ones increased from the first to the second half of the blogs. Mood was further broken down to type (good vs. bad) that were stated in the blogs as a function of time, $\chi^2(1) = 3.931$, $p < .047$. There were 82 references to good moods in the first half that dropped to 57 referents in the second half. However, his good mood referents were double bad mood ones in second half ($n = 25$). First half good mood referents were half again as high as bad (good = 82; bad = 64).

Dream recall was not assessed as act frequency but along a five point continuum ranging from "clear mention of recall of previous night's dreams with details" (1) to "no mention of previous nights dream" (5). Dream recall of the previous night's dream, not to be confused with the dreams which are analyzed herein, also evidenced time differences, $t(376) = 2.213$, $p < .026$. Dream recall decreased

significantly from the first to the second half of the diary although some recall continued as the means (first half = 3.43; second half = 3.81) were still in the mid range.

Continuity of Blog to Dream

Because the blog was coded based on content from a grounded theory perspective, not all the categories match well to the HVDC coding of the dreams for a test of the continuity hypothesis. But some categories could be matched: characters, modifiers, objects, activities, emotions, failure, and settings. Since measurement dominated the blogs, it was of particular interest to see how or if it was reflected in the dreams. Therefore, the total number of measurement referents in the blog was correlated with the modifiers coded in the dream as well as with the activities category, since it tracks all events, and with objects as they are separate from activities. Therefore, a combined objects plus activities plus modifiers was computed and correlated as well with measurement. Finally, because the HVDC did not allow for act frequency of the number of uses of numbers in the dream these were counted as well and correlated with the total number of measurement referents in the blog.

Supporting the continuity hypothesis were significant, if small, correlations between the sum of measurements in the blog and these selected dream content scales: HVDC Sum of Objects, Activities, and Modifiers ($r = .099$, $p < .05$); HVDC Objects Sum Score ($r = .127$, $p < .01$); and Count of numbers in dream transcript ($r = .103$, $p < .01$).[4] Thus, the assumptions that numbers in the diary were best represented by Activities, Objects, and Modifier as classically assessed in the HVDC is supported and reflects the measurement referents in his blog. Finally, the count of numbers in the dream diary entries was correlated to sums of blog mentions of software, hardware, gaming, media, and music. Only blog mentions of gaming ($r = .14$, $n = 445$, $p < .002$) was significantly correlated.

Additionally, the total number of people in the blog, were correlated with the total characters in the dream. The mood referents in the blog were correlated with the emotions sum in the dream and the sum of references to places in the blog were correlated with the settings sum in the dream. Pearson Product Moment correlations were again computed but in only one case was the correlation significant, if again of small magnitude, people/characters ($r = .11$, $n = 447$, $p < .024$).

Because the HVDC was adapted to code "people" in the blog, it is possible to further break down the characters correlation. When just dead and imaginary "people" (blog) and characters (dream) were correlated it was significant ($r = .14$, $n = 447$, $p < .004$). In past research (Gackenbach et al., 2009) the dead and imaginary category has been related to game characters, and indeed, here is one example from his blog that was coded under this category of dead and imaginary: "I also made another avatar featuring the fox and the blue water (as . . . the classic Sonic games)."

However, when people/characters were broken down into those identified as male or female and summed (male + female) there was not a significant correlation

[4] Number of dreams/blogs ranged from 445 to 447.

($r = .052$). Likewise when family members were summed (father + mother + parents + brother + sister + family member + relative) from the blog and correlated to family characters from the dream[5], that correlation was not significant ($r = .017$).

Finally, two previous research studies have implications for the relationship between the blog and the dreams, health, and activities. Based upon King and DeCicco (2007), we examined the number of health references in the blog relative to misfortunes in the dream diary. These were significant ($r = .27$, $n = 447$, $p < .0001$). Also significant were blog health references and dreamer involved misfortunes ($r = .25$, $n = 447$, $p < .0001$), and bodily misfortunes ($r = .097$, $n = 447$, $p < .0041$).

We then correlated the various blog activity sums to appropriate HVDC activity subscales based on the Schredl and Erlacher (2008) analysis of the incorporation of sport and reading activities. The more gaming references in the blog the more HVDC thinking activities there were ($r = .21$, $n = 447$, $p < .0001$). Likewise, for hardware blog references being associated to HVDC thinking activities ($r = .11$, $n = 447$, $p < .021$) but no such association for software blog referents ($r = .05$). Surprisingly, the sum of music referents in the blog did not correlate significantly with auditory activities ($r = .03$). There was also no significant correlations between the sum of media referents and auditory ($r = .052$) or visual ($r = .012$) activities in the dream.

Thus, domains from the blog that seem to be related to the dream include: measurement, gaming, computers, people, activities, and health.

OCD Analysis

When going through the blogs, we realized that this person was obsessive about writing down every detail of his daily activities, down to the type of silverware he was using. We suspected he might be OCD. As seen in the last section his obsessions are mostly focused upon measurement and counting. His compulsions can be identified as getting things done with his computer and his games in a timely, organized manner and any disturbance in his daily activities seems to cause annoyance and stress. Within this, he talks about a wide range of things ranging from counts of drops of nose bleeds to the true speed on his computer games.

Personal communication with NS, following this realization in the beginning of the analysis process, confirmed he has OCD. A subcategory of about me on his Website is about his fears. He lists his fears, problems, and obsessions, both past and present, and how he has overcome some but others are still present. He introduces his fears page by explaining, "I've got a long list of fears, one of which I've had since 1988 and has been practically unchanged since. That is, it has neither gotten better nor worse. The big chunk of them came from my severe video game addiction that lasted until around mid-2001 or so. Others have resulted from school and my bullies I've had, especially teachers in the case for my fears."

We also examined NS's dreams relative to the two dream studies on OCD individuals (Külz et al., 2010; Sauteraud et al., 2001). Additionally, we were able to

[5] He was not married and did not have children so those categories were not included.

identify over 100 dreams from this diary that occurred while NS was medicated, that is before age 18, which we compared to postmedication dreams.

Sauteraud et al. (2001) found no differences in dream content between their control group and OCD group in terms of "anxiety, sadness, the theme of failure, or the presence of obsessive or ritual themes" (p. 451). While Külz et al. found fewer positive contents relative to normals. In the present inquiry, because we did a HVDC analysis, we could look at all of these variables. Obsessive or ritual themes were examined in terms of measurement/counting in the blogs/dream transcripts. In Table 1, it was seen that there was significantly less failure in NS's dreams than the male norms but no difference in negative emotions. When examining failure the other side of the coin is success, and here this dreamer had no difference from norms. Another positive content found in NS's dreams relative to norms was for the first half, no difference in self negativity. This mixed picture continued when examining dreams with at least one incidence. Though only one subject, this OCD diagnosed individual's dream profile did not fit with the previous studies.

Now we will turn to an examination of the effects of medications on NS's dreams. He wrote (August 12, 2009, personal communication) about his history of medication use:

> I used to be on medications until January of 2004. I've been off all of my meds since then (this was also the Time I turned 18, on Jan 10). I don't think that the meds, after being off of them for so long, would have any effect on my dreams. However, for the older dreams, then it does apply. The details are quite vague, however as it's been so long. I started taking meds for this back when I was 10 (about 1994). The most recent meds taken was Risperdal (sp.?), taken via injection. Geodon preceeded this (tablet form) with another gap without meds before this. The time before this, before about 2002, was where meds were very common and constant. Very few dreams are recalled from these times. I don't recall the order, but I had Paxil (tablet), Prozac (capsule; gave me a major upset stomach after a burp with a 40% chance of occurring), and a few others I don't readily recall.

The dreams associated with his medication-taking years were not used in the earlier analysis because they did not have blogs associated with them and their dates were often not exact. However, 109 dreams were collected which NS identified as occurring between the years 2000 and 2003, which was during the medication years. A HVDC analysis was computed on these dreams. It should be noted that some of the dreams are written from memory and dream notes. These dreams seem to be less specific and less listing of things, less specificity of materials.

This earlier set of dreams was then compared to the dreams from 2004 through 2009 and to the HVDC male norms. This information is portrayed in Table 2.

Every drug/no drug dream content difference was less during the drug years than during the no drug years. These differences are unfortunately confounded with age. The drug years were ages 14 to 17, a time of peak adolescent developmental changes in males, while the no drug years occurred from 18 to 23. Of the 28 comparisons (significant or nonsignificant) available looking at nondrug versus drug use, nine (32%) of the categories from the drug dreams were in the direction of the norms while 16 (57%) were away from the norms with the remaining at the norms. Again this is confounded by developmental changes as well as the multiple drugs taken over that period of time. But one could conclude that as NS is sans medications and getting older, that he still differs largely from the norms but is moving in that direction.

Table 2. Percentages and P's for Drug, Nondrug, and HVDC Male Norms

	HVDC male norms	No drug dreams	Drug dreams	*p*: no drug dreams vs. HVDC male norms	*p*: drug dreams vs. HVDC male norms	*p*: drug dreams vs. no drug dreams
Characters						
Male/female percent	67%	59%	61%	*.026	.591	.873
Familiarity percent	45%	36%	17%	**.000	**.000	**.000
Friends percent	31%	05%	06%	**.000	**.000	.599
Family percent	12%	27%	06%	**.000	.111	**.000
Dead and imaginary percent	00%	08%	05%	**.000	**.003	.306
Animal percent	06%	11%	08%	**.000	.532	.433
Social interaction percents						
Aggression/friendliness percent	59%	71%	54%	**.001	.619	.083
Befriender percent	50%	51%	17%	.868	*.013	*.015
Aggressor percent	40%	44%	00%	.348	**.000	**.000
Physical aggression percent	50%	74%	63%	**.000	.322	.339
Social interaction ratios						
A/C index	.34	.23	.21			
F/C index	.21	.09	.17			
S/C index	.06	.00	.00			
Settings						
Indoor setting percent	48%	49%	46%	.907	.592	.542
Familiar setting percent	62%	32%	23%	**.000	**.000	.125
Self-concept percents						
Self-negativity percent	65%	55%	51%	**.003	.052	.556
Bodily misfortunes percent	29%	17%	00%	.051	**.000	*.011
Negative emotions percent	80%	90%	94%	*.031	.089	.543
Dreamer-involved success percent	51%	56%	75%	.432	*.036	.105
Torso/anatomy percent	31%	31%	00%	.992	.097	.099
Dreams with at least one:						
Aggression	47%	28%	12%	**.000	**.000	**.000
Friendliness	38%	15%	11%	**.000	**.000	.336
Sexuality	12%	00%	00%	**.000	**.000	1.000
Misfortune	36%	11%	09%	**.000	**.000	.451
Good fortune	06%	12%	00%	**.001	**.000	**.000
Success	15%	12%	13%	.127	.656	.638
Failure	15%	09%	04%	**.002	**.000	*.045
Striving	27%	18%	14%	**.001	**.003	.348

* $p < .05$. ** $p < .01$.

DISCUSSION

This is an investigation of one young man's online dream diary. The diary ranged over almost a decade but this inquiry focused in the main on 6 years when there were daily blog entries available. Thus, several questions were addressed. Do dreams remain largely the same over extended lengths of time which is the consistency principle (Domhoff, 1996)? Second, do the activities from the day before a dream inform the content of the dream, the continuity hypothesis (King & DeCicco, 2007). The original reason for deciding to examine NS's diary was because he was a heavy video game player and we were thus interested to find out if the results on one or a few dreams from gamers were replicated over a long diary. As it turned out, once we got into the guts of the Website, we discovered that NS also has OCD. This allowed another research question to be addressed; what are

OCD sufferer's dreams like? Do they reflect the waking obsessions and compulsions or are they similar to those of normals? The advantage of one diary over several years is that the complex interactions between these questions can be addressed. Such complexities reflect real lived lives and are important to consider when trying to understand any one element of dreaming.

For meaning to be drawn from the diaries, it is important to understand why they were created. The reasons behind someone keeping a dream diary are numerous and as such the importance of what can be understood from them can be influenced by the dreams in the diary. Domhoff (1996) believes that there are very few people that keep their dream diaries for introspective psychological purposes, but instead they are created for other personal reasons. Diaries can be kept as general personal diaries or as ideas for short stories or paintings. The danger with using diaries that were kept as a source for ideas is that they may contain only the most vivid dreams the dreamer remembered, while the less vivid dreams that did not seem to contain as much idealistic material were ignored. The best dream diaries will come from those who have kept them for personal reflection and as such they will not have a bias introduced by having a purpose for the dreams. This is much the same as with the value of historical diaries, they are of stronger historical value if they were written without an audience in mind, but instead for personal use (Tosh & Lang, 2006). Thus, no matter what the purpose the dream diary was kept for, the researcher needs to be aware of a possible bias in the research results from selective dream recording.

In the present study, the dream diary was begun for its "entertainment value and a massive collection of ideas for my projects" (December 17, 2009, personal communication). Domhoff's suggestion that this will result in the selection of only the most vivid dreams may be correct in this case but this is a copious body of dreams. There is an average of three dreams/week that he recorded over the 6-year span of the diary that was analyzed. It can be argued that the subject is a high dream recaller. Additionally, of his blogs that were analyzed, 47% mentioned previous dream recall. In fact, he mentions in his online Website where his blog and dream diary are housed, "almost every night I recall a dream, my memory is quite good . . . When typing the details of the dreams, I try to be as accurate as I can. In almost every case, I can recall an image from within the dream." He further points out when talking about his daily routine that recording a dream is the first thing he does every day. Thus not only is NS a high dream recaller in terms of frequency, he also records them with incredible detail (average words per dream = 222) and regularity. We will now turn to an examination of each of the major hypothesis examined in this study.

Consistency Principle

The dreams chosen for HVDC analysis are representative of the whole diary in terms of relative incidence per year and per dream type. As with other long term dream diaries, NS's diary generally evidenced all three types of consistency spoken of by Domhoff (1996); absolute, relative, and developmental. The one exception, characters, could be interpreted as demonstrating developmental regularity.

Consistency was also investigated based upon the dreamer's own dream evaluations and classifications. Of the 11 types of dreams examined, there were no differences in incidence within the two halves of the diary for all but two. Thus, in

the main we can say that he had the same number of dreams of each type in each half of the diary. He also evaluated each dream along seven dimensions of liking and again there were no differences as a function of time in how much he liked or disliked each dream. Consistency was supported both in terms of judges' evaluations and in terms of the dreamer's own evaluations of his dreams.

One implication of the principle that dreams remain largely consistent over the life span is that life circumstances have little effect on dream content. If there are changes over time, dreams would reflect major life circumstance changes. Given that the only time changes were in terms of characters, two life circumstances might help interpret this finding. NS's game play was heaviest in the first half of the diary, and the character findings, which were higher for dead and imaginary and animal characters in the first half of the diary, echo what has been found in the dreams of other gamers (Gackenbach et al., 2009, 2010). Second, he explained that a marker of the second half was the beginning of years of prank calls. The marginally significant fewer friends in the second half, as well as the significantly fewer familiar characters and fewer male/female characters would support an interpretation of an individual becoming increasingly isolated. In some sense this isolation may have begun during his earlier school years as he talks about how many bullies there were in his life during school. However, at least he was going to school. NS graduated toward the end of the first time period and continued to live at home with no formal schooling or job for the second period of the diary. This life circumstance may have added to the isolation that his dreams seem to indicate.

A somewhat detailed view of NS's life circumstances is available through an examination of his blogs. These inform in part, his waking life as well as how those elements might be viewed in his dreams. The blogs were analyzed by reading them and then developing categories for coding based upon what was present in the blog, not based upon what variables constituted the dream analysis. Twelve categories of information were identified and coded, 11 as act frequencies and one as a rating, that is, dream recall. Of the 11 act frequencies, "measurement" was the dominant category in the blog, with an average of over 10 mentions per blog. These included counts, percents, fractions, computer related, time, and other subcategories. Counts and time referents were the most frequent types of measurement. On the one hand, this blog emphasis on numbers could reflect his math skills of which he writes:

> What's 12 + 6? When I was around five or six years old, according to my parents, I could figure out a question like this without paper and pencil and without a calculator. As time grew on, I got more and more advanced with mathematics. By the Time I was in elementary school, I was doing math two full grade levels beyond everyone else was.

On the other hand one could view his fascination with numbers as symptomatic of his OCD which will be taken up later in this discussion. He goes on to explain that, "I see numbers in everything, several numbers. They are most commonly as ratios, fractions, percentages, and angles (often as slope ratios)." This includes in words, art, music, and dreams.

Blog differences[6], or the lack thereof, from first to second half of the diary help to inform the few changes in dream content that were found. There were no

[6] His short daily blogs were selected for analysis because they were reliably entered for each dream. He does have a few long, detailed blogs for each month, but these were not analyzed.

differences in the number of people mentioned in his blogs from the first to the second half. However, those who were mentioned offer insight into his circumstances. Both parents were mentioned more than any other persons, with his mother occurring the most often. Additionally, both parents were mentioned more frequently in the first than in the second half of the diary (father first half = 19, second half = 11; mother first half = 27, second half = 18). This is to be expected in that the last years of high school were in the first half time period. The years immediately after high school were in the second half time period. However, the absolute percent of blogs mentioning his parents is very low.

The next most frequent people (character) categories in his blog entries were strangers and animals, with three times more coding as strangers than as animals. There was no real difference in stranger codes from the first (n = 15) to second half (n = 17) but a sharp decrease in animal codes (first half = 12; second half = 2). Friends would have been classified under known characters but there were only four in the entire diary. Virtual characters, those in the games he played, listened to, or created, were more prominent in the second half of the diary (n = 45) relative to the first half (n = 35).[7, 8, 9] All this supports a life circumstance change that is reflected in his shift in characters in his dreams. However, it was also found that while he had less self-proclaimed good moods in the second half of the diary, than in the first half, there were still twice as many good mood referents than bad. Finally, about his beginnings with game play he comments:

> Because my family often rejects playing board games and stuff because they're often too involved with something, the first basic games were from these board games. I devised a way to play most every two-player based games with only yourself!

Thus, if a loner, it doesn't appear that he suffers too much from that life circumstance.

Continuity Hypothesis

This hypothesis was addressed through an examination of NS's blog entries for the day before each dream. Based on previous research into the continuity hypothesis several sets of correlations were computed to see if there was incorporation of daily activities from the blog into the dream. Starting with measurement, as it was the largest blog referent, it correlated with the HVDC objects sum but not modifiers or activities sums. Numbers in the dream transcripts were counted and those correlated with the number of measurements in the blog. This last could have been as much a function of reporting style as of dream content. Indeed NS explains:

> Numbers written in text are very rarely seen in my dreams. However, when I recall them, I recall both the scene and the numbers the scene has. This is how I get measurements. I see a room as having a 5:8 ratio but at 80 feet wide . . . without a source, it's very inaccurate . . .

[7] Animals are not included here because sometimes he talked about real animals, that is, puppies being born, and sometimes he talked about virtual animals, that is, Scooby Doo.

[8] These do not include the dreams collected during the years NS was on medication.

[9] Categories with an asterisk above the bars indicate significant differences ($p < .05$) from first to second half of the diary.

> Someone in the dream is another worthy source, but only useful for the vertical. For gauging speeds and heights, that's where my mind game comes in. I'm used of speeds to 400 mph in my mind game . . . As usual, I use objects to get a reference on actual sizes.

The last, of course, is reflected in the significant correlation between objects in the dream and measurement in the blog. Dream diary count also correlated with the number of gaming mentions in the blog. This role of gaming in blog and diary was further picked up with the blog measurement, dream characters correlation. It was largely accounted for by dead and imaginary characters and thus also speaks to the degree to which gaming is present in his dreams.

Also examined as evidence of the continuity hypothesis, was health (King & Decicco, 2007) and activities (Shredl & Erlacher, 2008). Again picking up the gaming in blog/dream theme, gaming and computer hardware referents in the blog correlated with thinking activities in the dreams. Previous research with history of gaming information and the thinking activity scale from the HVDC found no relationship between these two variables (Lee & Gackenbach, 2009). The difference, of course, is, in this case, that we are considering the day before play while in the previous study we examined an individuals history over the lifetime of game play. One would expect to see more thinking in dreams associated with gaming or at least with gaming that has a high cognitive load. This is a question that needs to be further explored.

The lack of a correlation between music referents in the blog and auditory ones in the dream may seem surprising. Similarly, there was no correlation in Lee and Gackenbach's data between history of music listened to and auditory activities in the dream. In this case it could be the unique music that NS plays. He explains, "day in and day out, I listen solely to video game music played at different speeds." While video game music is serious music–witness the success of "*Video Games* Live," a music concert devoted to video games, which has been touring the world (http://www.videogameslive.com)–the repetitive nature of his listening brings to mind his OCD diagnosis.

Finally, we examined health incorporation and largely replicated what King and DeCicco (2007) found. Referents to health in NS's blog were correlated with two misfortune HVDC scales. This finding is aside from his OCD diagnosis that we will take up next as a special case of the association of health issues to dream content.

Dream Content Pattern Relative to Norms and the OCD Associates

In places on his Website NS claims to have been addicted to video game play as a child/teen but turned his attention to game creation later in life. He comments about this addiction:

> I was otherwise very normal before I became 4 years old. When I was around 4 years old, I began playing video games with the Atari. Day in and day out often for 10+ hours a day (except school), I played the Atari and future console systems that came out. This severe addiction to video games led to at least half of my many mental problems . . . My addiction to video games was . . . almost entirely [lost by] 2003.

While video game addiction is very real and it may well be that NS was addicted, another OCD gamer sheds a different light on what may have happened

to NS. Comeau (2010) explains that he used repetitive behaviors as a child to sooth the anxieties beginning with "LEGOs, Construx, or wood blocks." However, he notes that his video game play as a child seemed normal. It wasn't until he was an adult, when his compulsions were getting worse, for example, being late from work caused by needing to return home to be sure that everything was locked up, that his OCD began to impact his video game play. He explains that "I was increasingly drawn to repetitive, pattern-based titles . . . [like] Bubble Bobble . . . I played Bubble Bobble every day for over a year, despite the fact that I wasn't having any fun . . . [I] indulged in games which forced me to do the same thing over and over and over again—kind of like what I used to with LEGOs." NS's self-proclaimed video game play 'addiction,' may have been a manifestation of his emerging OCD.

Limitations

This is a single case study that is in and of itself a limitation. One cannot generalize from a single individual's experience. However, it is possible to test hypothesis on a single individual and this diary proved to be a fruitful place for such testing. The strength of this diary is its amazing detail but it could also be a weakness. Too much information about one element of a dream or blog might cloud the more impactful elements. This is best illustrated with the measurement counts in the blog. It was the overwhelming majority of blog entries and it did correlate with some dream elements but so much detail was available on measuring things that it may have sacrificed any emotional reactions NS had to events. Another limitation is that we used the short blogs. There were several very long blog entries, but to assure uniformity and reliability we stayed with the short blogs. We may have lost information this way. The dreams were constrained by word length, among other criteria. However, this choice could have cut out important dreams just because they were so long.

In summary, NS's long term dream diary supported both the consistency and continuity hypotheses. It also shed further light on the dreams of video game players over time as well as on the dreams of an OCD individual.

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