A DEEPER INQUIRY INTO THE ASSOCIATION BETWEEN LUCID DREAMS AND VIDEO GAME PLAY

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Abstract

A conceptual framework for gaming was offered with parallels between gaming and the use of mythology and ritual in indigenous cultures and thus the social nature of the transpersonal or numinous experiences they report. The specific consciousness experience explored herein is the lucid dream, knowing you are dreaming while you are dreaming. In a series of studies Gackenbach and colleagues have been investigating the relationship between video game play and lucid dreams. It has been found that gamers report more lucid dreams than those who are less likely to be involved in gaming. In this article we further explore the nature of this relationship from the dreaming perspective. That is, we consider the cognitive components of lucid dreams in gamers, bizarreness in lucidity of gamers, the relationship between meditation vs. gaming, and differences between gamers' lucid and non-lucid dreams using the Hall and Van de Castle (1966) content analysis system. We conclude that gaming enhances the experience of lucidity along the lines of meditators experiences of lucidity. These findings can be interpreted equally in terms of a psychology of imaginative absorption and a sociology of collective consciousness in the tradition of Durkheim (2012).

A Deeper Inquiry into the Association between Lucid Dreams and Video Game Play[1]

Jayne Gackenbach (2008) has argued that video game play specifically, and more generically all electronically mediated interactions, can become a sort of meditative experience. She builds her argument by tracing parallels between game play and meditation. These include improved attentional skills, deep absorption, flow experiences, improved spatial skills, and increased lucid dreaming, all of which are characteristic of both meditation and video game play (for a review of each of these areas see Gackenbach 2012). While not claiming that the effects of gaming are as profound or far reaching as meditation, she does argue that gaming allows an entry into states of consciousness typically accessed by meditators.

Another perspective on Gackenbach's thesis is the association between meditative experience and intense and/or lucid dreams. That is, their mythological, or in Jung's terms, archetypal content. This level of experience is strikingly resurrected in the structure of many role playing games. David Molina (personal communication, August 21, 2009) discusses the relationship between archetypes and massively multiplayer online games (MMOG):

> The main theme of most role playing games takes the form of the Hero's Journey (Campbell, 1973). Players take on the role of a hero/anti-hero and venture from safe grounds into unknown or dangerous territories to engage monstrous resistance and complete quests. After gaining experience and fortune, the players return to the safe lands with the new knowledge, wisdom and spoils of their adventure. MMOG environments are rich in archetypal imagery and storylines that facilitate a reenactment of the Hero's Journey, and unlike TV, cinema or literature, the user is the main character choosing his/her own path through the adventure. Joseph Campbell believes that an engagement with the hero archetype is an essential part of our existence and that "if we happen not to be heroes in the grand sense of redeeming society we have to take that journey ourselves, spiritually, psychologically inside us," (Campbell & Moyers, 1993, p. track 4).

It can be argued as per Carl Jung (1933), that the need to engage in internal mythologies or archetypes may be greater in modern societies, since there is a lost common ground. In early

days, humanity actively lived archetypes through shared ritual, dreams and spiritualities. In modern times, there may be a vacuum for this which is being addressed in part by gaming.

Another important connection between dreaming and traditional techniques of consciousness transformation is lucid dreaming, as the capacity to be aware one is dreaming while the dream continues. Some role playing games may potentially result in such dreams. In addition to its heightened meta-cognitive self-monitoring, to be discussed below in more specific research reviews, lucid dreaming bears a direct phenomenological and cognitive resemblance to the states sought in traditional meditation, and has been further developed as such within both Transcendental Meditation and Tibetan Buddhist practices. In both dream lucidity and meditation there is an enhanced self-awareness whose full emergence is marked by feelings of a vivid kinesthetically enhanced presence and feelings of awe, fascination, and at times bliss similar to that in Maslow's peak experience and Otto's descriptive phenomenology of a numinous feeling of the felt sense of the sacred (Gackenbach and Bosveld 1989; Hunt 1989). Harry Hunt (1989) points out that when combined with enhanced mythic-archetypal content, which is a common development with more long term stabilized lucidity, this gives many lucid dreams a striking similarity to accounts of shamanistic vision-trance* and the "big" or sacred dreams of tribal societies, also of such interest to Jung and which were themselves crucial in confirming a directly felt sense of a shared or collective social reality.

* While it is true that the cultures of modern tribal peoples each have their own long history of separate development, it is also true that contemporary examples of tribal shamanism, especially given their striking cross cultural similarities (Walsh 2007), nonetheless offer important, if inferential, clues to the larger human pre-history of archaic hunter-gatherers -- a view also central to Jung's understanding of a collective unconscious most directly manifested in these overlapping shamanistic practices and mythologies.

Review of Recent Research in Video Gaming and States of Consciousness

Nielson, Smith, and Tosca (2008) note that a culture's most popular games may reveal its core values, specifically:

> Games emerge as societies mature and develop more advanced political and social organizations. Games reflect the evolution of a society: the more complex a social system, the more advanced its games. . . . For Mead, an individual can only obtain his unity of self when he has internalized this 'generalized other,' that is, the attitude of the whole community. Games are excellent mirrors of the way that people organize themselves, where all actions are related to each other in an organic way that can be understood by learning the rules (30).

While make-believe play has a long history of both child and adult participation (Whitehead 2007), it has become technologically embodied through the application of virtual reality technology. Video game play has become so widespread that it rivals the other major entertainment industries. No longer only a child's toy, the average gamer is now 35 years old and increasingly people of all ages and cultural backgrounds are enjoying video game play.

While there has been much research on negative consequences in terms of aggression (Anderson et al. 2003), the potential for addiction (Griffith and Davies 2005), and obesity (Stettler, Signer, and Suter 2004), numerous positive consequences of video game play have also been found, from practice in social realms to improvements in cognitive skills (Gee 2003). The growth curve of technologies and their absorption in society is demonstrated well by Preiss and Sternberg (2005) who point out that cultural tools, while developed at great expense, create a learning and cognitive atmosphere for future generations that is much easier and allows them to move forward. A key issue in evaluating the effects of technology on the mind is the increasing ability to couple our mental representational systems with technological systems that augment input data. There are many examples: absorption in a movie or TV show, texting on a cell phone, or playing a video game. Not only are we immersed in and enjoying these augmented and virtual

realities, but it is becoming increasingly obvious that they are altering our range of mental functions (Sternberg and Preiss 2005).

Various researches have also chronicled the effects of gaming on states of consciousness or traits associated with consciousness. Attention (Green and Baveller 2003; for a review see Wright, Blakely, and Boot 2012), presence/immersion (Ermi and Mayra 2005; for a review see Smith 2012), absorption (Funk et al. 2003; for a review see Glicksohn and Berkovich-Ohana 2012), and flow (Sherry 2004; for a review see Westcott-Baker and Weber 2012), for example, are aspects of consciousness that have been examined as a function of video game play. These four aspects can be conceptualized as interdependent (Preston 2012).

What is immediately on our mind is what is in our attention. Our attention is most often thought of as an aspect of waking face-to-face reality but it need not be. When we are asleep in a dream, the dream events have our full attention, but we are "living" in an alternative reality, one that is created anew each night by our brain. Another alternative reality that can command our attention is virtual reality. Although not fully immersive, many, if not all, video games create a technologically built alternative reality that players are made to feel present in, as it draws their attention to the 'enemy' approaching. Thus, presence is when our attention is on a virtual reality and we feel as though we are 'there'[2]. When this happens over some period of time, the player is described as absorbed in the game. At its most absorbing, game play can induce experiences of flow or a perfect balance of challenge and skill so that the player feels an oneness with game events as they unfold. A gamer described his 'zen' moments in gaming and meditation:

> A moment of zen for me when I am playing is like being inside the game, as if I was the person who was running around; and not myself playing the game. It sort of feels like the controller is my brain and I completely use it as a part of my body rather than an extension. A zen moment in meditation for me is different than this but different in the sense that I feel in tuned to myself and the world rather than in tune with the virtual world. (AH, personal communication, July 26, 2009)

As can be seen from this quote, the flow experience has qualities of higher states of consciousness (Gackenbach 2008), although it may also be a factor in video game addiction as well (Chou and Ting 2003).

Another state of consciousness which may be affected by video game play is dreams. The research literature on dreaming function has explained that dreams are important for information (Barrett 2007) and emotional processing (Kramer 1993; Nielsen and Lara-Carrasco 2007). Therefore, the question posed in our laboratory has been what are the effects upon the biologically constructed alternative realities of dreams from immersion in the technologically constructed worlds experienced during video game play? In this article we will summarize our research into the effects of game play on a specific type of dream which has direct relevance to our conceptualizations of consciousness.

Lucid Dreams and Video Game Play: Previous Research Summary

Throughout our research program into the relationship between video game play and dreams we generally defined the hard core gamer as someone who:

1. Plays video games on average several times a week,
2. Has a typical playing session of more than 2 hours,
3. Played 50 or more video games over their lifetime, and
4. Has been playing video games since grade three or earlier.[3]

In more recent inquiries we have also taken into account preferred game genre (Gackenbach and Bown 2011). In several studies we were able to show that these hard core gamers had more lucid dreams than those who rarely game (Gackenbach 2006; 2009; Gackenbach and Kuruvilla 2008a). This finding was almost always associated with group differences in dream control and sometimes with a preference for the 3rd person perspective in a dream. Generally dream recall

and sex of subject were controlled.

Since dream information in our previous studies was based upon retrospective reflections on dream history, we decided to refine our methodology. We had not collected recent dream reports nor had we looked at other forms of electronic media use from the day prior to the reported dream. Therefore, these variables were accounted for in Gackenbach's 2009 study. The factor analysis of morning after dreams in this study−which included dream type, general type of media used the day before the dream, and gamer history information−revealed that lucid and control dreaming were associated with high end gamer history and heavier media use, especially with video game play.

Why might we expect this association between video game play and lucid dreaming? Video games are a technologically constructed alternative reality, while dream worlds are biologically constructed alternative realities. Thus one could argue that there is a kind of carryover learning effect. If you are in an artificial reality for hours a day, it follows that you might recognize something similar when you are in another one at night. Indeed Revonsuo (2006) points out that "the dream world is thus 'virtual' for precisely the same reason as a computer-generated synthetic environment is: in both cases I feel physically present (i.e., I *am* [authors emphasis] phenomenologically present!) in an unreal place where my physical body is not really present at all" (114). In order to examine this perceived presence, Gackenbach and Rosie (2011) compared ratings of presence after playing a video game to presence after having a dream about that video game. The results indicated that there were few differences between dreaming and gaming with regards to the participant's felt sense of being there. This supports the idea that there are similarities between virtual and dream states, and thus the potential for a learning transfer, concerning the "reality" or lack thereof, between these states.

Another reason we might expect to find an association between lucidity and gaming is video game play has been associated with both improved spatial skills (Subrahmanyam and Greenfield 1994; Sims and Mayer 2002) and lucid dreaming (Gackenbach et al. 1985). Some resistance to motion sickness is needed to play these games for extensive periods of time (Preston 1998) and, correspondingly, lucid dreamers have better vestibular systems (Gackenbach et al. 1986) which render them insusceptible. Additionally, the high attention and absorption reported by gamers (Glicksohn and Avnon 1997-98) and research on gaming (Gackenbach 2007) is reminiscent of the same qualities associated with meditation (Weinstein and Smith 1992; Holzel and Ott 2006). Furthermore, meditators have been found to have very high levels of lucidity in sleep (Mason et al. 1995; Gackenbach and Bosveld 1989; Hunt 1989).

Three lines of inquiry will be examined in this paper to further investigate this gaming-lucidity link. In all cases the data is drawn from previous research that either was not analyzed or was not analyzed in this way. We will first examine other cognitive qualities in dreams that are associated with the lucidity-gaming linkage. Then we will consider the bizarreness of dreams and its relevance to the gaming-lucidity link. Finally, lucid versus non-lucid dreams of gamers will be compared using the Hall and Van de Castle method of content analysis by drawing on data from several studies.

Cognitive Structure of the Lucid Dreams of Gamers

Lucid dreaming has been characterized as presenting with a heightened meta-cognitive capacity (Kahan and LaBerge 1994). Koriat (2007) defines meta-cognition as the "process by which people self-reflect on their own cognitive and memory processes (monitoring) and how they put their meta-knowledge to use in regulating their information processing and behavior (control)" (289). Kahan (1994), building on the work of Purcell et al. (1986), argues that lucidity

in sleep might be viewed as a type of self-reflective awareness. Previously, reflective awareness in dreams, which culminates in lucid dreaming, was generally conceived of as a weak faculty (Hobson 1988) or at best, one difficult to assess (Foulkes 1985). More recently, both physiological and psychological studies have brought this assumption into question, arguing instead that dreaming often includes controlled and rational thinking (Kahan 2009; Kahn and Hobson 1993). LaBerge and DeGracia (2000) point out that while non-lucid dreams can have meta-cognitive qualities, "meta-cognition during lucid dreams is not confined to events occurring in the dream, but references, either explicitly or implicitly, waking experience as well . . . hence, lucidity in the context of dreaming, implies meta-cognition framed by consciously accessible memories of waking experience" (275).

A more elaborated definition of meta-cognition is provided by Nelson and Narren (1994) who relate three separable components: intentionality, monitoring and regulation. Early efforts to draw a conceptual line between waking and sleeping cognition did not separate these components (Purcell et al. 1986). Using Nelson and Narren's model, Kahan and LaBerge (1994; 1996) developed the Meta-cognitive, Affective, Cognitive Experience Questionnaire (MACE) to determine the cognitive components of dreams and their relationship to waking cognition. This scale was administered as part of a study by Gackenbach and Kuruvilla (2008b) on the dreams of individuals who vary in their history of video game play. Other analyses undertaken considered the MACE and self-reported lucidity; control and third person observer perspectives in dreams; and the history of video game play and hours played the day before the dream (Gackenbach and Kuruvilla forthcoming). The question addressed in these analyses was, when gaming is associated with lucidity, what elements of meta-cognition are also evident. In a factor analysis, one factor showed an association between gaming, lucid dreams, and MACE items; two other

factors also proved to be of interest. Specifically, high gaming, both historically and the day before the survey was completed, was associated with high lucidity; 3rd person observer and dream control; and three MACE items (high reports of internal commentary during dreaming, high reports of thinking about one's own thoughts and feelings during the dream, and low reports of thwarted intentions).

Relatedly, Swanston and Gackenbach (2011) examined lucidity and control dreams as a function of gaming versus the same phenomena as a function of meditation/prayer. The MACE was also employed in this study. In addition to the meditation/prayer group variable, they also added a high activity versus low activity manipulation. That is, participants were asked to report a dream after a day of high activity, i.e. gaming or meditation/prayer, and after a day of low activity. Two of the three items associated with gaming and lucidity in the previous study, were also found to be associated with group interaction and condition in this study. Specifically, while the meditating/prayer group self-reported more lucid dreams overall, the gaming group reported the most control dreams across conditions. Internal commentary item on the MACE was highest in the gamer group after a high activity day while lowest in the meditation/prayer group after high meditation/prayer activity. The opposite was the case after a day of low activity. In terms of thwarted intention the gamer group was reported as having less thwarted intention in their dreams after a day of playing video games while the meditation/prayer group reported more thwarted intention after a day of high meditation/prayer activities and less thwarted intention in their dreams after a low activity day.

We conclude that internal commentary and thwarted intention seem to be two markers of self-reflection associated with lucidity and gaming. Thus, after playing games extensively during the day prior to sleep, gamers had more internal commentary and less thwarted intention in their

subsequent dreams relative to another group who performed meditation/prayer extensively. This combination explains the higher dream control for gamers overall. However, the lower lucidity relative to meditation/prayer among gamers (although higher than the control group) points to an orthogonal relationship between lucidity and control as has been pointed out in previous research (Levitan and LaBerge 1993). Furthermore, it seems to be consistent with the nightmare protection hypothesis of gaming effects on dreams (Gackenbach, Ellerman, and Hall 2011). Specifically, males who play a lot of combat centric action type video games have been found in several studies to have less threat in their dreams and more empowerment. Furthermore, they report that their self-described "nightmares" are enjoyable. While they may not know that they are dreaming, they feel in control of a dream situation which is often found to be quite frightening by others.

Bizarreness and the Gamer-Lucidity Link

Despite research showing most dreams to be relatively plausible simulations of daily life (Domhoff 2007), bizarreness in dreams continues to be investigated owing to its theoretical and intrinsic interest (Revonsuo 2006). Hunt (1989) points out that what we now call "bizarreness" was central to traditional "dream centered" tribal societies. Different perspectives on bizarreness have been examined, including Hunt's distinct (1982) categories, clouding and hallucinations (including a sub-factor for archetypal mythological content), and Hobson's (1988) discontinuity and incongruity. The lattermost of these was elaborated upon by Revonsuo and Salmivalli (1995) in their assessment of bizarreness.

Using the Hall and VandeCastle system of content analysis of gamer's dreams, Gackenbach and Kuruvilla (2008a) found that gamers reported more characters of a bizarre type. In a more elaborate analysis of dream bizarreness, both Gackenbach, Kuruvilla and Dopko

(2009) and Gackenbach and Dopko (2012) found a positive association between video game play and dream bizarreness. However, neither considered the type of dream (lucid or not), in their analyses. This dream type data is not available for Gackenbach and Dopko (2012) but is for Gackenbach, Kuruvilla, and Dopko (2009).

Dream type association between gaming and dream bizarreness was investigated by Gackenbach et al. (2012). They examined two data sets where these three types of information were gathered or coded (Gackenbach, Kuruvilla, and Dopko, 2009; Gackenbach et al. 2012). Dream bizarreness was coded by judges using Revonsuo and Salmivalli (1995).

Initially, separate factor analyses on the same variables were examined for each study. These studies were run several years apart, but both on western Canadian university introductory psychology pool subjects. These two factor analyses basically replicated with gaming (factor 1) and bizarreness (factor 2) as separate factor structures. The dream type variables loaded on the remaining factors.

In each study there was additional relevant information available, so a second factor analysis for each data set was computed. In the case of the Gackenbach, Kuruvilla, and Dopko (2009) data, personal history of incidence of dream types information was also available along with self-estimates of the type of dream most recently reported. While in the case of Gackenbach et al. (2012) data, additional gaming the day before the dream information was gathered as well as additional details about dream lucidity regarding the dream most recently reported.

Some association between gaming and dream bizarreness emerged in each additional factor analysis. For the Gackenbach, Kuruvilla, and Dopko (2009) data, the younger the individual was when they began gaming, the higher they reported impossible dream content. No dream type mitigated this association. In the Gackenbach et al. (2012) data, age of starting

gaming was also associated with a bizarreness variable and self-report of the dream being bizarre, but not with any of the judges' evaluations of dream bizarreness, nor with any dream type.

In conclusion dream type did not illuminate, as hoped, the relationship between gaming and dream bizarreness. Furthermore, these additional analyses showed few gaming/bizarreness associations. Therefore, while there seem to be some association between video game play and dream bizarreness, it requires further inquiry and may not be related to lucidity per se.

Content Analysis of Lucid and Non-lucid Dreams

Several of our studies of gamers' dreams used the Hall and Van de Castle (1966) (HVDC) content analysis system with the coding sheets developed by Schneider and Domhoff (2001). The first such analysis was based on dreams gathered during intensive interviews with 27 hard core gamers (Gackenbach et al. 2009). The second was from dreams gathered online (Gackenbach and Kuruvilla 2008a). Comparisons were to male HVDC norms in both studies as the majority of the gamer groups were male. Gackenbach and Kuruvilla compared the previous interview HVDC data to their online collected data and found some similarities, and some differences. They observed that, of the 25 subscales for which group differences could be determined, over half (16) showed a difference between either of the two gamer groups and the norms. Half of these were for both gamer groups while the other half were for one group or the other. Of the eight that showed a difference between both gamer groups and the norms, seven were in the same direction, including: more familiar and dead/imaginary characters, and fewer dreams with at least one instance of aggression, friendliness, sexuality, misfortune, and/or good fortune than the Hall and Van de Castle norms.

In both cases, the hard core gamers had more familiar characters than the norms. This

was indicated if participants directly stated or implied that the character in their dream was known i.e. The boy next door). Gamerscores that were higher than the norms on these measures might be due to their relatively restricted real worlds. They are perhaps less likely to venture into unknown real worlds and thus less likely than the male norms to meet strangers. While there are many strangers in online gaming, the familiarity of the gaming environment and virtual characters might result in the gamer perceiving that they are among familiar and not unfamiliar players. This is partially supported by the significantly higher indoor settings in the dreams of the online gamers. Another difference that replicated across populations was higher incidences of dead and imaginary characters.

Finally, eight scales indicated the incidence of some social element occurring at least once. These included dreams with at least one incidence of aggression, friendliness, sexuality, misfortune, good fortune, success, failure, and striving. As mentioned above, five of the eight categories (aggression, friendliness, sexuality, misfortune, and good fortune) showed significant differences from norms for both samples. In all five cases, the direction was less than the norms but when all males that had dreams coded were compared to all male norms, the same finding emerged. This may be more of a generational finding than one specific to gamers. The same was true of all females, sans sexuality where there was no difference from the norms.

Separating out lucid from non-lucid dreams in gamers may help to further elaborate these group differences. When combining these two data sets with a third set of unpublished HVDC analysis data (Gackenbach and Dopko 2009) and examining lucid versus non-lucid dreams of gamers, further light is shed upon the nature of lucidity in the dreams of video game players. The number of lucid and non-lucid dreams gathered from each data set is identified in Table 1.

Insert Table 1 about here

In two of the three studies the dreamer identified the dream as lucid while in the third study (Gackenbach et al. 2009) an independent judge so identified the dream. Gamers' lucid dreams were compared to their non-lucid dreams, collapsed across sex, in order to get larger cell sizes. The results are shown in Table 2. Gamers' lucid dreams had more physical aggression, less misfortune, more friendliness and more dead and imaginary characters than in their non-lucid dreams.

Insert Table 2 about here

In short, these are the differences one would expect with lucid-control dreaming, which deliberately tends toward a more positive dream atmosphere. The one apparent exception is the higher physical aggression in lucid than in non-lucid dreams of gamers. However, given the otherwise positive dream experience, it is likely that the gamers themselves view their often consciously deliberate aggression in these lucid dreams positively, much as they do in gaming. A typical scenario involves the use of aggression to fight off an onslaught which has triggered the dreamer's lucidity, as seen in this example:

> Well, once Jean Grey (*a marvel comic and video game character*) got loose and started killing people, I was like this is really weird this is probably a dream and it was like right after that she showed up and I told myself that I need to wake up. I thought that something bad was supposed to happen and I didn't want it to happen so I should wake up (Gackenbach et al. 2009, Subject #14).

Indeed the application of gaming violence to threatening dream scenarios has been further explored by Gackenbach, Ellerman and Hall (2011) in their nightmare protection thesis regarding gaming.

Conclusion

After a summary of previous research on the association between video game play, meditative absorption, and dream lucidity was presented, three different types of considerations of lucidity and gaming were explored. These were the association of lucidity in gamers with meta-cognition, dream bizarreness, and non-lucid dream content. In terms of specific forms of meta-cognition in dreams, it appears that gaming adds a dimension to the lucid dreams of gamers such that their full potential for focused problem solving is expressed very much like the strategies of video gaming. In some research there was a finding of an enhanced bizarreness of gamer dreams but when lucidity was not found to mitigate that relationship. Finally, comparing the lucid versus non-lucid dreams of gamers, it was concluded that lucidity in gamers' dreams emphasized the already generally positive dream experience of being lucid in sleep, including the enhanced aggression which facilitated the sense of empowerment also typical in video game playing. Not only is there some indication of more lucidity in gamers' dreams, but that lucidity seems to be further enhanced by the gaming experience.

Broader Contextualization

Absorption, fantasy play, lucid dreaming, and dream bizarreness/metaphority are psychological constructs. However, their relation to gaming, and vice versa here, raises a more general level of analysis. To return then to the placement of gaming in the social nature of consciousness which introduced this paper, we tend to miss the collective societal nature of higher states of consciousness, and absorptive states generally, as westerners and given our

values of heightened autonomy and extreme individualism, whereas in fact similar states in traditional tribal societies, guided by their explicit mythological systems, are what held these societies together in the sense of Durkeim's collectivity of consciousness (Hunt 1995; Turner and Whitehead 2008). We proposed earlier that gaming serves some of the same societal function in today's youth as explicit mythological systems have in indigenous cultures. For us, unwittingly as a rule, these states experienced in gaming are a spontaneous reengagement with that level of collectivity from a place of our individual conscious isolation in highly differentiated and pluralistic modern culture.

In this regard what Jung called his "collective unconscious", with its spontaneous generation of numinous and exotic archetypal identities in states of high absorption, and whose collective commonality he wrongly thought could only be explained biologically, is actually the same as Durkheim's collective consciousness in more tribal societies, and now in gaming clans. Both offer fully available and explicit mythological image and narrative as part of a daily engaged virtual life. Durkeim's* collective *consciousness* becomes *unconscious* in us as we lose the explicit externalized mythic and ritual markers for that level of deeper collectivity. Gaming, with its archetypal roles, avatars, etc. is similarly making Jung's collective unconscious more directly available and externalized for the shared social engagement and sanctioning of what

* Emile Durkheim, one of the pioneering figures of sociology, understood "collective consciousness" as a shared awareness of the social bond itself, whose felt "effervescence" was most fully mobilized in religious ritual, mythology, and experience. Jung's "collective unconscious" was intended as the source of a human universality, but with levels of archetypal imagination specific to different cultural groups. The most direct clue to these unconscious organizing and shared forms or archetypes, was for Jung also, religious mythology, ritual, and numinous mystical states. It is interesting to note that in our secular-materialistic age, Durkheim's collective consciousness in its most intense forms becomes literally unconscious for most of us, but still spontaneously manifested in individuals with high levels of imaginative absorption and related states of consciousness -- not only in powerful archetypal dreams but now in imaginative video scenarios.

would otherwise be limited to what we ostensibly take as private higher states of consciousness in individual high absorbers.

Jung's "collective unconscious", which descriptively at least covers the structures that are contacted in what psychologists call altered states, literally is Durkheim's collective consciousness in traditional mythologically centered societies, and is becoming so again for gaming participants. From this sociological side of the states of consciousness literature, high imaginative absorbers are by definition more deeply attuned to the collective social field, since human consciousness itself is already social at all of its levels (Hunt 1995). Gaming creates its own externalized and supported forms of absorption and provides the archetypal patterns otherwise emerging in us only individually through dreams and meditations. Indeed Preston (1998) has argued that exposure to virtual reality (here gaming) allows experiences of absorption not typically or easily available to those naturally lower in trait imaginative absorption.

To be absorbed in consciousness, be it in lucid dreams, intense fantasy or meditation is also to be absorbed in the social field more deeply than is available in ordinary consciousness. Since consciousness itself is collective already, and the high absorber is entering the level provided in traditional times by externalized ritual and myth, gaming offers those in contemporary western individualistic society much the same function. Specifically it is an externalized absorptive consciousness with provided patterns that are accordingly socially structured, simultaneously shared, and so offering some of the support of tribal societies, which individual high absorbers in the west have lost in their only ostensibly "private" lucid dreams and meditations.

Absorption in consciousness on the level peak or numinous feeling and archetypal content is identical to absorption in deeper levels of a shared social field, as seen precisely in the

commonalities across individual altered state reports which Durkheim had already explained, but Jung as a typical western individualist thought required something further and “biological”. Specifically Jung asked how people could be so similar at what they felt to be their most truly "private" and "inward" moments. In fact the altered state research literature demonstrates, from a sociological point of view, that the further you go in and down the more you go simultaneously out and into a commonality.

That gaming is more popular in Asian societies (i.e., Korea, Japan, China) makes sense along these lines since these are already collectivist societies, so while modernizing and also losing their traditions, they have a more accurate attunement to the social bases of these traditions and so are more ready to engage them in new forms through gaming (Carlson et al. 1999; Colwell and Kato 2005; Hjorth 2007; Cao and Downing 2008; Ernkvist and Strom 2008; Golub and Lingley 2008). Thus much gaming is done in “Bangs” (computer cafes) in Korea and as publicly attended competition (Jin and Chee 2008). But so too in the west the LAN (when groups of gamers bring their hardware together in one real world location to create a “local area network”) is a widely popular way to game, and indeed much gaming is social in that it is online and for groups to share simultaneously. Thus games are actually already set up as a collective social field in which contact with the sense of the numinous and mythological are explicit and thus can be socially engaged.

That more experienced gamers shift more to a third person field perspective within their games and prefer such patterns makes sense both in terms of the witnessing and lucidity levels they are reaching AND as what one would expect at deeper levels of a shared social field of consciousness. They are both reaching into a more detached witnessing and so also deeper into

Mead's level of the generalized social other. The social field as field is coming into view as the deeply internalized structure of all our experience (Hunt 2009; 2012).

Table 1: Number of Gamer Subjects per Study as a Function of Gender and Dream Type

Gender	Dream	Gackenbach (2009)	Gackenbach et al. (2009)	Gackenbach & Dopko (2008)	Row totals
male	Lucid	5	7	6	18
male	nonlucid	53	46	30	129
female	Lucid	2	2	6	10
female	nonlucid	21	2	40	63
Col totals		81	57	82	220

* All studies were nonspecific for nonlucid type of dreams and in all studies one dream was collected from each participant.

Table 2: Hall and Van de Castle comparisons between lucid and nonlucid dreams of gamers

	gamer nonlucids	gamer lucids	h: gamer lucids vs. gamer nonlucids	p: gamer lucids vs. gamer nonlucids	N for gamer nonlucids	N for gamer lucids
Characters						
Male/Female Percent	48%	68%	+.41	.089	83	22
Familiarity Percent	70%	64%	-.12	.511	171	39
Friends Percent	42%	31%	-.22	.206	171	39
Family Percent	15%	08%	-.24	.178	171	39
Dead & Imaginary Percent	09%	21%	+.35	* .040	187	42
Animal Percent	04%	02%	-.11	.532	187	42
Social Interaction Percents						
Aggression/Friendliness Percent	75%	56%	-.42	.112	69	18
Befriender Percent	38%	43%	+.09	.849	13	7
Aggressor Percent	46%	20%	-.56	.237	46	5
Physical Aggression Percent	60%	93%	+.83	** .005	60	14
Settings						
Indoor Setting Percent	66%	48%	-.36	.118	99	23
Familiar Setting Percent	68%	50%	-.38	.170	73	16
Self-Concept Percents						
Self-Negativity Percent	76%	62%	-.31	.310	66	13
Bodily Misfortunes Percent	27%	00%	-1.10	* .042	11	5
Negative Emotions Percent	84%	67%	-.40	.361	37	6
Dreamer-Involved Success Percent	36%	50%	+.28	.708	22	2
Torso/Anatomy Percent	31%	25%	-.13	.806	39	4
Dreams with at Least One:						
Aggression	30%	33%	+.08	.727	122	21
Friendliness	12%	33%	+.51	* .029	122	21
Sexuality	03%	00%	-.36	.123	122	21
Misfortune	09%	24%	+.41	.083	122	21
Good Fortune	00%	00%	0	1.000	122	21
Success	07%	10%	+.11	.643	122	21
Failure	11%	05%	-.25	.288	122	21
Striving	18%	14%	-.10	.666	122	21

1. This article is based in part upon a paper that was presented by Jayne Gackenbach at the annual meeting of the International Association for the Study of Dreams, Chicago, June, 2009.
2. Sanchez-Vives and Slater (2005) suggest that the study of presence as currently investigated in the virtual reality literature would be useful for inquiries into consciousness.
3. In some studies we've look at type of game played but most gamers at this level of involvement play a wide variety of games if preferring one genre or another.

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