VIDEO-TERMINAL DISSOCIATIVE TRANCE: TOWARD A PSYCHODYNAMIC UNDERSTANDING OF PROBLEMATIC INTERNET USE

Adriano Schimmenti and Vincenzo Caretti

Abstract

Objective: In this article, we propose the clinical construct of Video-terminal Dissociative Trance (VDT) and discuss its potential usefulness for the assessment and treatment of people who display problematic Internet use. VDT is defined as a clinical syndrome characterized by clusters of symptoms in the psychological domains of addiction, regression, and dissociation in the individual's interactions with the computer and its applications.

Method: Study 1 examines the relationships between Internet addiction symptoms, dissociative experiences, and attachment styles in a sample of university students. Study 2 explores the associations between Internet addiction symptoms, cyberpornography use, and dissociative experiences in another sample of university students. Two clinical vignettes are presented to provide anecdotal evidence for VDT cases.

Results: Preoccupied attachment style and dissociation predicted Internet addiction symptoms in Study 1. Dissociation scores predicted Internet addiction symptoms in Study 2, while cyberpornography use did not add to the prediction. Clinical vignettes suggest that a VDT framework can help to interpret both of these findings and improve the understanding of the specific motives behind an individual's misuse of the Internet.

Conclusions: VDT may involve significant disturbances in the state of consciousness, identity, and memory, the dilution of self-awareness and self-integrity, and the replacement of the customary sense of personal identity by a new virtual identity. People who display problematic Internet use may greatly benefit from clinical interventions aimed at addressing these symptoms and understanding their origins.

Key words: problematic Internet use, dissociation, addiction, regression, psychopathology

Declaration of interest: none

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Introduction

It was in 2000 that Vincenzo Caretti described the case of a child who went into a dissociative fugue after playing a video game for several hours. The child identified himself with one of the main characters of the game, and he left home during the night believing that he had many enemies to fight and a princess to save. This bizarre behavior eventually ended in psychiatric hospitalization, and the child had to undergo psychiatric medications and psychotherapy before returning to his normal life. In his discussion of this case, Caretti (2000) argued that the excessive exposure to the video game loosened the boundaries of the child's fragile identity. For this reason, the child experienced a trance-like state, similar to the experiences of religious possession, in which he totally identified with the game character.

These clinical considerations brought Caretti to propose the construct of "Video-terminal Dissociative Trance" (VDT) in an attempt to organize the developing knowledge on disorders connected to virtual realities into coherent psychodynamic descriptors. VDT was defined as a clinical syndrome related to the computer and its applications, which is determined by three factors in combination between them, namely addiction, regression, and dissociation.

Addiction is defined by (a) a ritualistic involvement with the computer and its applications; b) obsessive and compulsive behaviors related to the virtual experience; (c) a tendency to daydream as a defense against problematic interpersonal relationships; (d) feelings of shame concerning the behavior; and (e) phobic tendencies toward real interactions.

Regression is defined by (a) an identification with the virtual experiences and relationships (virtualization) as a defense against overwhelming feelings of anxiety that derive from interpersonal stressors; (b) compulsivity and self-absorption in the use of a computer; (c) autistic and schizoid fantasies as a defense against overwhelming experiences; and (d) an impoverishment of object relations.

Dissociation is defined by (a) a weakening in the boundaries of the self and a reduction of self-coherence; (b) an inflated sense of self, controlled by peripheral yet dominant self-states; (c) an alteration in the sense of time; (d) depersonalization/derealization symptoms, and the weakening of reality testing; and (e) a marked alteration in the state of consciousness (trance), up to the

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loss of the customary sense of personal identity.

Therefore, VDT may engender a significant variation in the ordinary state of consciousness. In VDT, the integrative functions of the mind are replaced by alternative sensory experiences and virtual identities that can negatively affect and also ultimately dissolve the individual's personality. For this reason, VDT clearly differs from common experiences of detachment from reality and immersion in virtual worlds that are frequently seen in interactions with technological tools. The construct of VDT describes a potentially impairing syndrome that involves an enveloping state of self-absorption and eventual trance. In fact, in VDT the entire mental experience seems to be involved with wide auto-hypnotic phenomena and dissociation.

Dissociation is a defense mechanism, a normal function of the human mind already available in the early stages of human development (Porges 2001) by which behaviors, thoughts, memories, and feelings can become split off from one another (O'Neil 2009, Vaillant 1994). It involves a disruption of and/or a discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior (American Psychiatric Association 2013). As a defense mechanism, dissociation allows an individual to avoid emotional distress temporarily by screening out excessive or overwhelming stimuli (Bromberg 1996). Nonetheless, when dissociation is relied upon as a person's primary response to stress, as it often happens when an individual is exposed to frequent and/or extreme traumatic experiences (Carlson et al. 2012, Dalenberg et al. 2012), it can become pathological, and symptoms such as depersonalization, derealization, amnesia, compartmentalization, identity disturbance, and altered personality (Steinberg 1993) may emerge as a result.

Notably, the concept of VDT was well received in Italy, and it inspired a number of theoretical and empirical articles focusing on the role played by dissociation in problematic Internet use. In particular, the empirical studies on the relationship between dissociation and problematic Internet use conducted in Italy (e.g., Bernardi and Pallanti 2009; Caretti et al. 2010; De Berardis et al. 2009; Del Miglio et al., 2001, 2002; Schimmenti et al. 2012; Zanon et al. 2002) have shown that dissociative experiences are significantly associated with Internet addiction symptoms, thus mirroring findings from other countries (e.g., Boysan et al. 2015, Canan et al. 2012, Dalbudak et al. 2014, Greenfield 2009). These consistent findings can be interpreted within a contemporary psychoanalytic framework by suggesting that overinvolvement with the computer and its applications may serve as a psychic retreat directed toward counteracting strong emotional distress and traumatic memories (Schimmenti 2012, Schimmenti and Caretti 2010, Schimmenti et al. 2012, 2017). It is possible that VDT fulfills the dissociative function to facilitate withdrawal inside areas of the individual's mind that are poorly aligned with reality, and that VDT is characterized by feelings of omnipotence that are structured to hide psychic pain, fear of loss, anguish about fragmentation, and feelings of existential void (Schimmenti and Caretti 2010). Notably, there is also some empirical evidence that overinvolvement with the Internet allows the individual to escape from unbearable states of mind arising from traumatic experiences. For example, Schimmenti and colleagues (2012) showed that dissociation mediated the relationship between disorganized attachment deriving from traumatic experiences and problematic Internet use in a sample of online role-playing gamers who displayed severe Internet addiction symptoms.

In this article, we will present two studies aimed at illustrating the usefulness of the construct of VDT for improving the diagnostic assessment and the development of tailored clinical interventions directed toward individuals who show significant Internet addiction symptoms. In the first study, we will examine the relationships between dissociation, attachment styles, and Internet addiction symptoms in a sample of university students. In the second study, we will explore the linkages between dissociation, cybersex addiction symptoms, and problematic Internet use in another small sample of university students. Study reports will be followed by clinical vignettes to illustrate some potential dissociative needs that lay behind an individual's excessive use of the Internet.

Study 1: Attachment styles, dissociation, and problematic Internet use

Attachment is an inborn behavioral system that allows the individuals to form bonds of affection and love toward significant others (Bowlby 1969/82). This system motivates people to seek proximity to attachment figures when they need protection from threats. This is particularly important during infancy and childhood, a time when proximity with a caregiving figure allows the individual to be protected from danger, thus increasing his or her chances of survival. Bowlby (1973) has argued that these experiences with others during times of need are stored as internal working models of attachment, i.e., as mental representations of self, others, and self–other relationships. These representations shape expectations about others' responsiveness and availability and organize strategies for regulating feelings and coping with stressors. Securely attached individuals tend to enjoy intimate relationships, are able to share feelings with other people, and actively seek social support when needed. In contrast, insecurely attached individuals display a negative view of self and/or others or even disorganized and conflicting internal working models of attachment, which severely limits their ability to share feelings and their capacity for relatedness (Bifulco and Thomas 2012).

Research has consistently linked insecure attachment styles to problematic Internet use (e.g., Lin et al. 2011, Schimmenti et al. 2014, Shin et al. 2011, Senormanci et al. 2014) with sufficient evidence showing that when a negative view of the self is embedded in the internal working models of attachment, the likelihood of suffering from Internet addiction symptoms is increased. Furthermore, research has consistently linked insecure and disorganized attachment styles to dissociation (e.g., Calamari and Pini 2003, Ogawa et al. 1997, Riggs et al. 2007, Schimmenti 2016, Schimmenti et al. 2012). So, it was hypothesized that dissociation and insecure attachment styles involving a negative view of the self would predict the severity of Internet addiction symptoms. However, according to the theory behind the VDT construct, it was hypothesized that dissociation would be a stronger predictor of problematic Internet use than insecure attachment styles.

Method

The participants were 150 university students (87 males, 58%; 63 females, 42%) between 18 and 30 years old (M=22.69; SD=2.79) who agreed to participate in a study on the use of Internet. The participants were

recruited from the four Faculties of the Kore University of Enna (UKE), and all of them signed an informed consent form before taking part in the study. The study was approved by the internal review board for psychological research at UKE.

The participants consecutively completed the following measures on Internet addiction, dissociation, and attachment styles:

Internet Addiction Test (IAT; Young 1998). The IAT is a 20-item self-report measure for the screening of Internet addiction. It assesses Internet usage in terms of the degree of preoccupation, the inability to control use, the extent of hiding or lying about online use, and continued use despite negative consequences of behavior. The IAT has demonstrated adequate internal consistency and convergent validity in Italy (Ferraro et al. 2007) and worldwide (Widyanto and McMurran 2004), and it is one of the most widely used measures in Internet addiction research. Scores can range from 20 to 100, with higher scores indicating higher levels of Internet addiction symptoms. The IAT includes questions such as, ''How often do you fear that life without the Internet would be boring, empty, and joyless?'' Cronbach's alpha of the IAT in this study was .87.

Dissociative Experiences Scale – II (DES-II; Carlson and Putnam 1993). The DES-II is a 28-item self-report measure for dissociative experiences such as amnesia, depersonalization, derealization, absorption, detachment, and identity confusion. Items assess the percentage of time individuals experience these symptoms (e.g., "Some people have the experience of looking in a mirror and not recognizing themselves. Circle the number to show what percentage of the time this happens to you"). The DES-II has shown good psychometric properties in Italy (Schimmenti 2016) and worldwide (van Ijzendoorn and Schuengel 1996). Scores can range from 0 to 100, with higher scores indicating higher levels of dissociation. Cronbach's alpha of the DES-II in this study was .94.

Relationship Questionnaire (RQ; Bartholomew and Horowitz 1991)**.** The RQ is a self-report measure made up of four short paragraphs, each describing a prototypical attachment style (i.e., secure, dismissive, preoccupied, and fearful) as it applies in close relationships. Secure individuals have positive views of self and others, so they usually feel comfortable with both autonomy and intimacy. Dismissive individuals have a positive view of self and a negative view of others, which makes them dismissive of intimacy and strongly independent. Preoccupied individuals have a negative view of self and a positive view of others, so they feel that other people do not really want to become close with them and are excessively preoccupied with relationships. Fearful individuals have a negative view of self and others, so they feel uncomfortable in close relationships and are fearful of intimacy. Scores can range from 1 to 7 for each style, with higher scores indicating higher concordance with the specific prototypes of each attachment style. An example of the RQ paragraphs is the following, which is related to fearful attachment: "I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others." The RQ is a well-validated measure with good convergent and discriminant validity (Scharfe and Bartholomew 1994).

Descriptive statistics were computed for all the variables investigated in the study. Associations between scores on IAT, DES-II, and RQ were examined through Pearson's *r* correlations, and a hierarchical multiple regression analysis was conducted to test the contribution of attachment style and dissociation in predicting Internet addiction symptoms, controlling for the gender and age of the participants.

Results

IAT scores in this sample ranged from 20 to 63 (M=36.45; SD=9.91). Students mostly described themselves as securely attached (M=4.48, SD=1.97). Mean scores of the other attachment styles were 4.21 (SD=2.02) for dismissive attachment, 3.15 (SD=2.02) for preoccupied attachment, and 3.01 (SD=2.01) for fearful attachment. DES-II scores ranged from 0 to 76.43 (M=19.40, SD = 14.66).

Correlational analysis (all *df*=148) showed that IAT scores were associated with DES-II scores (r=.40, p<.01) and with scores of those attachment styles characterized by a negative view of the self, namely preoccupied attachment (r=.28, p<.01) and fearful attachment (r =.21, p=.01). DES-II scores were also related to preoccupied attachment scores (r=.17, p=.04) and fearful attachment scores (r =.19, p=.02). No significant associations were found between the scores of the other attachment styles that do not involve a negative view of the self (secure and avoidant) and DES-II scores or IAT scores (all *ps*>.29, n.s.).

Table 1 summarizes the results of a hierarchical multiple regression analysis in which the IAT scores were included as the dependent variable, the gender and age of the participants were included as control variables in the first step, RQ scores were included as predictors in the second step, and DES-II scores were included as predictors in the last step. As **table 1** illustrates, only younger age significantly added to the prediction in the first step of the analysis. The inclusion of attachment variables in the second step increased the explained variance of the regression model by 7%, with preoccupied attachment adding to the prediction. The inclusion of DES-II scores in the third step of the analysis increased the explained variance in the model by 11%, with only dissociation scores and preoccupied attachment scores significantly predicting IAT scores in the final model. Further explorations of these findings showed that there were no significant interactions between DES-II scores and RQ scores in the prediction of IAT scores.

Discussion

Despite some important limitations, such as the non-probability sampling technique, the cross-sectional design of the study, and the use of self-report measures, which limits the generalizability of the findings, the current study supported the view that insecure attachment styles and dissociation can be considered as relevant variables for understanding the presence and severity of Internet addiction symptoms. More specifically, the study showed that the attachment styles involving a negative view of the self (preoccupied and fearful), dissociation, and Internet addiction symptoms were intercorrelated and that dissociation scores and preoccupied attachment scores predicted Internet addiction symptoms. These results mirror previous findings showing that Internet addiction symptoms are related to attachment difficulties concerning preoccupation with relationships (Schimmenti et al. 2014) and are even more strongly related to dissociation (Dalbudak et al. 2014). In fact, in this study dissociation provided the strongest contribution to the predictive model of problematic Internet use. Since

Table 1. *Preoccupied attachment and dissociation predicted Internet Addiction symptoms in a university sample (N=150)*

	Step 1				Step 2				Step 3			
	Beta	C.I. 95%	*t*	*p*	*Beta*	C.I. 95%	*t*	*p*	*Beta*	C.I. 95%	*t*	*p*
Gender (male)	.01	-3.08 - 3.31	.07	.943	.00	-3.11 - 3.30	.06	.954	.01	-2.89 - 3.14	.08	.936
Age	-.22	-1.33 - -.20	-2.66	.009	-.21	-1.29 - -.17	-2.59	.010	-.15	-1.06 - .01	-1.95	.053
RQ Secure attachment					.08	-.46 - 1.26	.91	.365	.08	-.41 - 1.22	.99	.325
RQ Avoidant attachment					.01	-.71 - .84	.17	.865	.03	-.60 - .86	.36	.721
RQ Preoccupied attachment					.21	.08 - 1.94	2.15	.033	.18	.02 - 1.78	2.03	.045
RQ Fearful attachment					.12	-.39 - 1.54	1.17	.242	.07	-.59 - 1.24	.71	.481
Dissociative Experience Scale -II									.34	.13 - .33	4.39	.000
Model R^2	.05				.12				.23			
F	(2,147) = 3.59				(6,143) = 3.26				(7,142) = 5.90			
p	.030				.005				<.001			

an excessive activation of the dissociative defense has been theoretically and empirically linked to traumatic exposure (Chefetz 2015, Schimmenti and Caretti 2016), it is possible that an overinvolvement with the Internet and an extreme absorption in its applications, which may also result in VDT, can serve as an unconscious strategy to escape from overwhelming feelings related to traumatic experiences, as the empirical research on problematic Internet use has begun to demonstrate (Schimmenti et al. 2012, 2017). A negative view of the self and an excessive preoccupation with relationships can only increase the disorganizing effects of such traumatic feelings and, consequently, the individual's need to resort to Internet use as a way to escape from psychic pain. A clinical vignette from our case files will help to illustrate this possibility. The identity of the patient described below has been disguised by omission and alteration of information to protect confidentiality.

David: a case of Video-Terminal Dissociative Trance

David had been exposed during his childhood to severe psychological abuse at the hands of his mother, who constantly humiliated, belittled, and terrorized him. According to the Adult Attachment Interview (AAI; George et al. 1985), a valid and reliable interview-based measure for the assessment of internal working models in adults (Bakermans-Kranenburg and van Ijzendoorn, 2009), David had preoccupied attachment representations. In fact, he was classified in the E3 category by an expert AAI coder. The E3 category in the AAI describes individuals who are fearfully preoccupied by traumatic or frightening events related to their attachment experiences in childhood. This classification is rarely encountered in the AAI assessment; most of the people who show E3 indicators during the interview also display significant indicators of disorganized attachment, which would move their AAI classification into the U/D category (disoriented/disorganized in relation to loss or abuse), but this did not happen in the case of David. However, David showed important dissociative symptoms, as his DES-II score was well above the cut-off value of 30 generally used for the screening of dissociative disorders (Carlson et al. 1993).

As it sometimes happens with people who were psychologically traumatized in their childhood, David was involved in a romantic relationship that partially replicated the episodes of psychological abuse he suffered during his childhood. Not only was his fiancée extremely demanding, hard to please, and often devaluing of him, but she was also clearly unfaithful to him. Nonetheless, David tended to deny her betrayals and tolerate her tantrums, and he idealized his partner despite the clear evidence that she was abusive toward him. However, after he was exposed to a situation in which the infidelity of his partner was undeniable (and after forgiving her and buying her an expensive ring), David started contacting women through social networks and engaging in sexually explicit conversations while masturbating. He kept this behavior a secret from his partner, but when she was not around he usually spent all of his time in such online conversations. He also started neglecting his friends, overlooking his work, and losing sleep due to these conversations. Moreover, he was often very aggressive and domineering in these conversations, so that many women blocked his online contact. Nonetheless, despite the fact that David was ashamed and embarrassed for his online behavior, he continued with it for some months, as he reported that he felt a strong sense of excitement and omnipotence when he was online. He also reported that he was literally another person when he was online, and that he was even surprised by his words and behaviors during these conversations, of which he sometimes had no memories.

Understanding that David had developed a VDT was important for his treatment, as addressing VDT in therapy allowed him to leave his abusive partner and discontinue his problematic online behaviors. In fact, all three domains of VDT were observable in David's behavior on the Internet. Addiction can be inferred by David's impulsive, obsessive, and compulsive use of online

conversations (Caretti and Craparo 2009). Moreover, despite the fact that David was experiencing disturbing feelings of shame for his online behaviors, his reliance on the Internet exponentially increased over time, and he also showed symptoms of tolerance, abstinence, and craving for the online conversations. Regression can be inferred by David's use of the primitive defense mechanism of sexualization. In fact, sexualization is a primitive defense mechanism through which feelings of anxiety and depression are converted into excitation and pleasure (Fraiberg 1982). There was a moment when it was impossible for David to deny the unfaithfulness of his partner, but his preoccupied internal working models likely brought him to experience a strong separation anxiety (actually, he bought a ring for his partner, which clearly represented his necessity to reestablish a bond with her). Such feelings of anxiety prevented him from directly expressing his feelings of anger and sadness toward his partner. Dissociation can be inferred from David's altered personality when he was online. His sense of time was also altered, as he did not realize that his sexual conversations lasted for several hours, much longer than he intended. Moreover, he experienced symptoms of depersonalization, and his sense of reality was almost suspended when he was online, such that he had significant amnesia and problems with some of his female contacts due to his awkward, obscene, and devaluing language.

In our view, David was suffering from VDT because he was actually dissociating the traumatic memories related to his feelings of impotence experienced in the relationship with his mother during childhood, which were re-actualized in his current relationship with his partner. However, one could contend that David's compulsive sexual behaviors on the Internet and his involvement with cybersex fostered his problematic Internet use, rather than his dissociative needs. We will explore the possibility that an involvement in cybersexual activities is more relevant than dissociation for the understanding of Internet addiction symptoms in Study 2.

Study 2: Cyberpornography use, dissociation, and problematic Internet use

The locution "cybersex addiction" describes an excessive and uncontrolled use of online sexual activities associated with tangible negative outcomes and functional impairment (Wéry and Billieux 2015). Cybersex addiction has recently been conceptualized as a behavioral addiction that shares many psychosocial, physiological, and neurobiological manifestations with other addictive disorders (Love et al. 2015). Among the predictive and somewhat overlapping factors of cybersex addiction is cyberpornography use (Love et al. 2015, Snagowsky and Brand 2015, Weinsten et al. 2015, Wéry and Billieux 2015). Cyberpornography use and compulsive cybersex have been theoretically linked with male gender, maladaptive coping, conditioned behavior, the dissociative reenactment of life trauma, intimacy dysfunction, and addictive behavior (Southern 2008). However, research on the relationship between cyberpornography use, dissociation, and Internet addiction symptoms is still scant. According to the theory behind VDT, cyberpornography use and dissociation should be only modestly interrelated, since cyberpornography use is just one among the many possible ways to use the Internet as a psychic retreat for traumatic self-states. In this sense, we hypothesized that dissociation would predict problematic Internet use over and above cyberpornography use.

Method

The participants were 59 university students (41 males, 69.5%; 18 females, 30.5%) from an original sample of 100 students (50 males, 50 females) who were asked to participate in a study on the use of Internet and cyberpornography (response rate 59%; males=82%, females=36%). The students who agreed to participate in the study and signed the informed consent forms were between 18 and 29 years old (M=22.31; SD=2.07) and were recruited from the four Faculties of the UKE. The study was approved by the internal review board for psychological research at UKE.

Participants consecutively completed the following measures on Internet addiction, dissociation, and cyberpornography use:

Internet Addiction Test (IAT; Young 1998). The IAT is a 20-item self-report measure for the screening of Internet Addiction (see Study 1). Cronbach's alpha of the IAT in this study was .86.

Dissociative Experiences Scale – II (DES-II; Carlson and Putnam 1993). The DES-II is a 28-item self-report measure for the screening of dissociation (see Study 1). Cronbach's alpha of the DES-II in this study was .95.

Cyber-Pornography Use Inventory (CPUI; Grubbs et al. 2010)**.** The CPUI is a 40-item self-report measure of cyberpornography use. The first item assesses whether the respondent has intentionally viewed Internet pornography during the past six months, and the other items assess the cyberpornography addictive patterns, the feelings regarding online pornography use, and online sexual behavior. An item example from the measure is, "When I am unable to access pornography online, I feel anxious, angry, or disappointed." CPUI scores can range from 0 to 39, with higher scores indicating more severe level of cyberpornography use. The CPUI was specifically translated into the Italian language for this study, following the well-established guidelines for translating research measures (Brislin 1970). Cronbach's alpha of the CPUI in this study was .98.

Descriptive statistics were computed for all the variables investigated in the study. Associations between scores on IAT, DES-II, and CPUI were examined through Pearson's *r* correlations, and a multiple regression analysis was conducted to test the contribution of cyberpornography use and dissociation in predicting Internet addiction symptoms, controlling for the gender and age of the participants.

Results

IAT scores in this sample ranged from 21 to 63 (M=36.78, SD=10.14). DES-II scores ranged from 0 to 70.36 (M=19.01, SD = 14.92). CPUI scores ranged from 0 to 16 (M=3.97, SD=5.90).

Correlational analysis (all *df*=57) showed that the IAT scores were associated with DES-II scores (r=.58, p<.01), but not with CPUI scores (r=.11, p=.38, n.s.). CPUI scores were also unrelated to DES-II scores (r=.04, p=.74, n.s.). Point-biserial correlations showed that CPUI was only associated with male gender (r=.66, p<.01).

Table 2 summarizes the results of a multiple regression analysis in which the IAT scores were entered as the dependent variable, and the gender and age of the participants, CPUI scores, and DES-II scores were included as predictors. The model was significant, $F(4,54)=7.89$, p<.01, and it explained 32.2% of the variance in Internet addiction scores. As **table 2** illustrates, only DES-II scores added to the model, while the other variables were not predictive of IAT scores.

Discussion

This exploratory study has some important limitations that strongly limit the generalizability of the findings. For example, the different response rates of men and women suggest that the likelihood of self-selection biases was high in this sample. The sample size was small and included only university students, which prevents any possibility to extend the findings to people who actually display severe symptoms of Internet addiction, cybersex addiction, and/or dissociation. Moreover, the cross-sectional design of the study does not allow us to establish any causal link. However, despite being only a preliminary study, it may suggest that the relationship between the use of pornography on the Internet and the development of Internet addiction symptoms might be modulated by the dissociative needs of individuals. In fact, no significant correlations were found between the use of cyberpornography and Internet addiction symptoms, and only dissociation significantly added to the predictive model of Internet addiction symptoms in the study. It is, of course, possible that these results might not be replicated in clinical samples of people addicted to cybersex, because the problematic use of cybersex often involves well-established symptoms of Internet addiction such as an excessive amount of time spent on the Internet, preoccupation with Internet activities, and craving toward cybersexual activities (Wéry and Billieux 2015). So, in our view the Study 2 findings did not indicate that the use of cyberpornography is unrelated to Internet addiction symptoms. Rather, they indicated that among people who may use cyberpornography but are unlikely to be addicted to it, dissociation could be a key variable for understanding their potentially problematic Internet use patterns. This possibility will be illustrated below, through another clinical vignette from our case files. Again, the identity of the patient has been disguised by omission and alteration of information to protect confidentiality.

Lara: being alone and being together on the Internet

Lara was a woman in her mid-twenties who requested psychological consultation because she was suffering from depressive symptoms. In fact, she had a lot of reasons to feel worried and depressed: among these, in the six months before the consultations she had left her long-time partner after he confessed to her that he was homosexual, she had also left the beautiful apartment in which she had lived for some years to move to another smaller apartment in the suburbs of the city, and her father had lost her life savings as a consequence of a bad deal. Additionally, her university grades were relentlessly lowering, as she had to work as a waitress in a pub for many hours a week to pay the bills and the rent. However, she was sufficiently protective of herself to understand that she needed psychological support in those difficult times. During the very first consultation, Lara's problematic Internet use emerged. She dedicated almost all her spare time to a social network, where she had created a fake profile of a sophisticated woman much older than herself. She usually used that profile to post her own philosophical considerations, some taunting or ironic comments, and many pictures concerning parts of her body (e.g., a finger, a knee, her neck). She never posted a full picture of herself. Her profile was followed by many persons, and she spent a lot of time chatting with these unknown contacts. At the same time, she had completely deserted her true social network profile and she was totally dismissing her friends, by whom she felt betrayed because she believed that some of them already knew that her ex-partner was homosexual. Additionally, Lara reported that sometimes, when coming back from work late at night, she watched pornography on the Internet. In particular, she was attracted by videos in which there were two men having sexual intercourse with a woman simultaneously. This behavior happened only occasionally, and Lara was able to connect it with an experience she had some months before leaving her ex-partner, when she found herself in a situation in which she could realize that fantasy. Following a line of interpretation based on modern conflict theory in psychoanalysis (Brenner 1982), it was easy to understand Lara's fantasy as a way to have revenge on her ex-partner and to comfort herself by restoring a sense of femininity that she felt he had betrayed. Furthermore, Lara's fantasy likely fulfilled an odd and probably paradoxical, yet touching, desire to stay with her former partner, whom she had loved so much. She actively suppressed her desire for him because of his homosexuality, but through her fantasy and the pornographic videos on the Internet she could be with him again, even if another man had to be involved. This line of reasoning was initially useful on the clinical level. Yet Lara's other behaviors on the Internet were more difficult to interpret within a conflict theory framework. Sometime later it became clear that Lara had unevenly suffered from depersonalization symptoms for many years. For example, sometimes she felt unreal, as though her body did not belong to her or as though she was looking at herself from the outside. Accordingly, her high DES-II scores suggested the presence of a dissociative disorder. However, she had discovered with time that when she was suffering from depersonalization symptoms, she could return to herself by focusing on a specific part of her body and then slowly moving that part. So, it was possible that Lara was posting pictures of parts of her body on the Internet to stay connected with herself and not only to other people, to feel that she was real and to have other people testify that she was real. However, it was unclear at the time why she had developed the profile of a sophisticated and mature woman. Lara did not have a clue about why she had this idea; she said that it suddenly came to her mind and she had thought it would be funny to create such profile. Only later was it possible to understand that the fake profile represented her paternal grandmother, who was among the few positive and reliable figures in her otherwise chaotic childhood environment. When Lara was a child, she frequently played with her grandmother,

Table 2. *Dissociation, but not cyber-pornography use, predicted Internet Addiction symptoms in a university sample (N=59)*

	Beta	C.I. 95%	*t*	*p*
Gender (male)	.06	-5.02 - 7.59	.41	.685
Age	-0.14	-1.78 - .40	-1.28	.207
Cyber-Pornography Use Inventory	0.16	-.24 - .78	1.07	.290
Dissociative Experience Scale -II	0.58	.24 - .54	5.31	<.001

pretending that they were noblewomen from the upper class. Her grandmother also often joked with her by asking Lara to whom she belonged, and then responding herself in Lara's place: "A little nail belongs to your grandpa, a little lock belongs to your brother, a little finger belongs to your daddy, a little foot belongs to your mother…and all the rest of Lara belongs to your grandma!" Additionally, a couple of months after the death of Lara's grandmother, her parents separated and her mother ripped up all the pictures of the woman. Lara found the shreds in the garbage can, but she felt that she could not argue with her mother for such behavior. Shortly thereafter, Lara had what was probably her first depersonalization episode. At that point, it was possible to understand that Lara had developed the fake profile on the social network to prevent herself from feeling as though she was going to pieces (as the pictures of her grandmother) due to the bad times through which she was currently living; she used the Internet to create a virtual representation of her grandmother who could protect her self-integrity and, paradoxically, posted pictures of parts of herself on the Internet to safeguard her entire identity. As the meaning of the pictures she posted on the Internet started to become increasingly clear, Lara began to dismiss the fake profile and regain her social life. After three months, she deleted the fake profile.

Lara clearly was a case of VDT, as all the three domains of addiction, regression, and dissociation were involved in her problematic use of the Internet. However, Lara's case might also be important because it shows that the use of pornography on the Internet sometimes constitutes only a small part of the many motives that could lead an individual to develop problematic Internet use (Billieux et al. 2015, Kardefelt-Winther 2014). We have posited in this article that exploring the dissociative needs of the individuals who shows problematic Internet use will help the clinician better to detect and address these underlying motives.

Conclusions

In this article, we expanded on the original construct of Video-Terminal Dissociative Trance by conceiving of it as a clinical syndrome characterized by disturbances in the state of consciousness, identity, and memory in interactions with computer technologies and their applications. We argued that these disturbances involve a dilution of self-awareness and self-integrity and might even involve the replacement of the customary sense of personal identity by a new virtual identity. We also contended that specific clusters of symptoms in the domains of addiction, regression, and dissociation allow clinicians to identify VDT cases, and that a careful exploration of the patients' dissociative needs and a greater understanding of their use of dissociation in virtual worlds will help clinicians better to assess and treat their patients' problematic Internet use. Notably, the most influential models of problematic Internet use include escapism (i.e., using the Internet to relax, escape from real life, or to avoid real-life problems) as a critical variable to take into account for understanding the misuse of the computer and its applications (e.g., Billieux et al. 2015, Caplan et al. 2009, Kardefelt-Winther 2014, Kuss et al. 2012, Yee 2006). We strongly believe that addressing the dissociative needs and the traumatic memories of the individuals who display problematic Internet use in therapy will make these individuals less likely to escape from their psychological difficulties in virtual worlds or elsewhere, and will instead help them better to cope with such difficulties.

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