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#### Full Length Article

## Inducing dissociation and schizotypal experiences through "vision-deforming" glasses



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#### ABSTRACT

Derealization, depersonalization and schizotypal experiences are described as separate concepts but they can be hard to distinguish. One way to show the uniqueness of these concepts is by showing a dissociation between these experiences. The aim of this study was to experimentally induce derealization without inducing depersonalization or schizotypal experiences. Healthy participants watched a neutral video in one of four conditions: (1) with stroboscopic light, (2) while wearing deforming glasses, (3) with stroboscopic light and while wearing "vision deforming glasses" or (4) without any manipulation. The results show that the "vision deforming" glasses induced derealization without inducing depersonalization but not without inducing schizotypal experiences. The stroboscopic light showed no significant effect, nor was there a significant interaction between the stroboscopic light and the deforming glasses. The results indicate that using "vision deforming" glasses as a manipulation method can show a single dissociation between derealization and depersonalization but cannot dissociate derealization from state schizotypy. This association between derealization and schizotypal experiences might be helpful in understanding the high comorbidity rate between dissociative disorders and schizophrenia spectrum disorders.

#### 1. Introduction

Dissociative experiences are disruptions in the usually integrated functions of consciousness, memory, emotions, behavior, thoughts, and identity (American Psychiatric Association, 2013). Pathological dissociative experiences are seen as core symptoms of dissociative disorders, such as dissociative identity disorder and depersonalization/derealization disorder, as described in the fifth edition of the Diagnostic and Statistical Manual of mental disorders (DSM-5, American Psychiatric Association, 2013). However, dissociative experiences have also been reported by healthy individuals (Hunter, Sierra, & David, 2004).

Janet (1889) started studying dissociation at the end of the 19th century. However, to this day there is still debate about how dissociation should be conceptualized (Holmes et al., 2005; Nijenhuis & Van der Hart, 2011). Is dissociation, for example, better conceptualized as one construct or as several distinct subtypes of dissociation; such as depersonalization and derealization (Huntjens, Dorahy, & van Wees-Cieraad, 2013)? According to the DSM-5, depersonalization is the experience of being an outside observer, or a sense of unreality towards one's own thoughts, sensations, or actions. An example of depersonalization is feeling like your body is not your own (Bernstein & Putnam, 1986). Derealization is a sense of unreality towards others or the external world (American

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Psychiatric Association, 2013). An example of derealization is: experiencing your friends or family as strange and unfamiliar (Bernstein & Putnam, 1986). Although depersonalization and derealization are conceptualized as different constructs, they often co-occur together (Carlson & Putnam, 1993; Krüger & Mace, 2002).

The lack of distinction between dissociative and schizotypal experiences complicates matters further; these concepts are, in fact, very similar. Schizotypal experience is defined as a dimension of unusual experiences, such as hallucinations, ranging from extreme forms in patients diagnosed with schizophrenia to lesser forms in non-clinical individuals (Claridge & Beech, 1995). The terms schizotypal experiences, psychotic experiences, anomalous experiences, and psychotic like experiences have been used interchangeably (Kwapil & Barrantes-Vidal, 2015). This is in contrast to the categorical view, in which psychosis is considered to be a state that someone either does or does not have (cf., DSM-5). To give a concrete example of the close relation between dissociation and schizotypal experiences: voice hearing is highly prevalent in both (Pilton, Varese, Berry, & Bucci, 2015). Some authors have even argued that hallucinations should be considered as dissociative experiences (Moskowitz et al., 2005). According to DSM 5 (American Psychiatric Association, 2013), dissociative symptoms are defining features of dissociative disorders, while schizophrenia spectrum disorders are characterized by psychotic symptoms. However, in reality, dissociative disorders and schizophrenia spectrum disorders overlap in many of their symptoms. Moreover, comorbidity between these types of disorders is high (Ellason, Ross, & Fuchs, 1996; Haugen & Castillo, 1999; Moise & Leichner, 1996; Ross & Keyes, 2004). This suggests that psychotic symptoms, such as schizotypical experiences, and dissociative symptoms are associated (Renard et al., 2016).

Thus, it is important to examine whether specific dissociative experiences can be distinguished from schizotypical experiences. One way to demonstrate the uniqueness of depersonalization, derealization and schizotypal experiences is by showing a dissociation between these experiences, for example, by experimentally inducing these constructs independently of each other. Furthermore, valid and reliable methods to induce these constructs would be useful within the general field of experimental psychology. Several studies have shown that it is possible to induce dissociation and/or schizotypal experiences in analogue samples: Ketamine has, for example, been used to induce both schizotypal experiences (Moore et al., 2011) and dissociation (Morgan, Mofeez, Brandner, Bromley, & Curran, 2004). The trauma film paradigm has been used to induce dissociation (Holmes & Bourne, 2008). Stimuli deprivation, also known as the Ganzfeld effect, has also been used to induce both dissociation (Leonard, Telch, & Harrington, 1999) and schizotypal experiences (Daniel, Lovatt, & Mason, 2014), and the same holds for the face in the mirror task (Brewin, Ma, & Colson, 2013; Fonseca-Pedrero et al., 2015). None of these studies included measures differentiating between derealization and depersonalization. Neither have the above methods induced derealization without depersonalization and/or schizotypal experiences. One study showed that stroboscopic light was one of the best out of 11 methods at inducing derealization, while keeping depersonalization and anxiety relatively low (Lickel, Nelson, Lickel, & Deacon, 2008). However the power of this study suffers from the number of comparisons made. Furthermore strobe light has also been used to induce schizotypal experiences (Ter Meulen, Tavy, & Jacobs, 2009).

Showing that derealization, depersonalization and schizotypal experiences can be induced in isolation of each other would prove they are independent constructs. Therefore the aims of this study were (1) to induce derealization without inducing depersonalization or schizotypal experiences, and (2) to examine which method works best for inducing derealization. In line with previous research, it was hypothesized that strobe light would induce derealization without inducing depersonalization but not without simultaneously inducing schizotypal experiences. Additionally, in an endeavor to have a strong method to uniquely induce derealization, we also included a new method, namely "vision deforming" glasses. This method was chosen to induce the sense of unreality towards others or the external world (i.e., specifically derealization); the glasses function as a filter of the external world. Thus, we hypothesized that these glasses could induce derealization without inducing depersonalization or schizotypal experiences.

#### 2. Method

#### 2.1. Participants

Seventy-two participants from the general population who reported not having a current mental disorder were recruited for this study through local advertising and advertising on social media, such as Facebook. The sample was composed of 48 females and 24 males with an average age of 22.47 (SD = 8.52) years. Sixty-one of the participants were currently following a university bachelor's or master's program. All participants were fluent in the Dutch language, either as native speakers or by having passed a NT2-II or equivalent language test. People with vision impairments or epilepsy were excluded from the study.

#### 2.2. Instruments

#### 2.2.1. Community Assessment of Psychic Experiences (CAPE; Konings, Bak, Hanssen, van Os, & Krabbendam, 2006)

The Dutch version of the Community Assessment of Psychic Experiences was used to measure trait differences in schizotypal experiences. The CAPE is a 42-item self-report questionnaire that was developed as a screening tool for detecting individuals in the general population who had an elevated risk for developing psychosis. Participants are asked about the frequency of various schizotypal experiences on an everyday basis, with scores ranging from 0 (never experienced) to 3 (all the time). An example of such an experience is: "Have you ever had the feeling that you are being followed for some reason". In this study the average score of all the items was used, resulting in a mean score between 0 and 3. The CAPE has shown to good reliability and validity (Konings et al., 2006).

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