Dissociative Experiences and Vividness of Auditory Imagery

María José Pérez-Fabello & Alfredo Campos

To cite this article: María José Pérez-Fabello & Alfredo Campos (2017) Dissociative Experiences and Vividness of Auditory Imagery, Creativity Research Journal, 29:2, 200-205, DOI: 10.1080/10400419.2017.1303310

To link to this article: http://dx.doi.org/10.1080/10400419.2017.1303310

Published online: 29 Jun 2017.

Article views: 16

View related articles

View Crossmark data
Dissociative Experiences and Vividness of Auditory Imagery

María José Pérez-Fabello
University of Vigo

Alfredo Campos
University of Santiago de Compostela

The relationship between dissociation and auditory imagery were assessed, 2 variables that sometime influence on artistic creativity. A total of 170 fine arts undergraduates (94 women and 76 men) received 2 dissociation questionnaires—the Dissociative Ability Scale (DAS), and the Dissociative Experiences Scale (DES)—and 2 auditory imagery questionnaires—the Auditory Imagery Questionnaire (AIQ) and the Clarity of Auditory Imagery Scale (CAIS). Significant differences on the auditory imagery (CAIS) have been found between individuals scoring high or low on the DES and DAS. In this study, however, significant differences were only observed on the Auditory Imagery Questionnaire (AIQ) between individuals scoring high or low on the DAS. Moreover, conflicting results have been obtained on the influence of dissociative experiences on dissociative skills in 2 auditory imagery tests. The discrepancies in the results only lead to more questions being asked than answered. Several lines of research are proposed.

Creativity, which is inherent to human nature, is a complex ability that enables the individual to be unique and to advance knowledge, be it the most trivial or the most complex and specialized. Studies on creativity encompass multiple factors, and recent studies include multiple perspectives on specific research focusing on the different variables related to creativity (for a review, see Hasirci & Demirkan, 2007; Kaufman, 2014; Manjaly & Indurkhya, 2015; Riquelme, 2002; Runco, 2007). Two of the variables sometimes influencing creativity are mental imagery (Pérez-Fabello & Campos, 2007a, 2007b; Pérez-Fabello, Campos, & Gómez-Juncal, 2007; Pérez-Fabello, Campos, & Meana, 2014; Rosenberg, 1988; Rosenberg & Epstein, 1991), and dissociative experiences (Pérez-Fabello & Campos, 2011a, 2011b, 2011c; Ross, Joshi, & Currie, 1991), which are two of the variables assessed in this study; additionally, this study was unique in assessing the influence of dissociation on the vividness and clarity of auditory imagery. The relations between imagery and creativity, and dissociation and creativity have been researched, but not so the relation between auditory imagery and dissociation.

The relationship between mental imagery and creativity has been extensively researched given that the world of imagination is the medium in which creativity flourishes (Miller, 1992; Palmiero, Cardi, & Belardinelli, 2011; Rosenberg, 1988; Rosenberg & Epstein, 1991). Thus, studies on fine arts undergraduates have associated imagery control to academic performance in sculpture, painting, and drawing (Pérez-Fabello et al., 2007). Moreover, the imagery abilities of fine art undergraduates have been related to spatial ability and visual memory tasks (Pérez-Fabello & Campos, 2007a). Similarly, in an art assignment on the study of space, fine art undergraduates with high image control scores obtained higher scores in spatial analysis and in the formal construction of a work of art than participants with low imagery control (Pérez-Fabello et al., 2014). Imagery ability and creativity seem to be associated, a good example of this is the improvement in imagination skills following training in creativity (Pérez-Fabello & Campos, 2007b), as can be seen from the comparison of imagery.
vividness in first-year and fifth-year undergraduates from the fine arts faculty.

As stated, dissociation is another variable related to creativity. Most of the studies on dissociation are in the field of pathology, regardless of the fact that many dissociative experiences are not pathologies, e.g., daydreaming, fantasising, and absorption (Butler, 2006). In the field of plastic arts, which is the focus of this study, Pérez-Fabello and Campos (2011c) assessed dissociative experiences using the Dissociative Experiences Scale (DES, Bernstein & Putnam, 1986; Spanish version by Icarán, Colom, & Orengo, 1996), and compared the results of fine arts undergraduates with psychology undergraduates, with the former obtaining significantly higher scores than the latter. The highest scores were observed in items associated with a greater tendency towards fantasy, imagination, and absorption. As for gender, no differences in dissociation were found between women and men. Ross et al. (1991) administered the same scale (DES, Bernstein & Putnam, 1986) to a stratified cluster sample of 1,055 interviewees from the general population of Winnipeg (Canada). Dissociative experiences were common in the sample and were not related socioeconomic status, sex, education, religion, or place of birth though they diminished with age in both sexes.

As dissociative experiences appear to be related to creativity, Pérez-Fabello and Campos (2011a) assessed the impact of dissociative experiences, and creative imagination on the artistic production of fine arts undergraduates. The results revealed dissociative experiences influenced several factors in artistic production (analysis of the idea, implementation of the idea and technical skill) of the undergraduates though no significant differences were found in artistic production in relation to creative imagination. Notwithstanding, fine arts undergraduates with high DES scores obtained high creative imagination and creative experiences scores (Pérez-Fabello & Campos, 2011b). In a recent study using the Dissociative Experiences Scale (DES-II; Bernstein & Putnam, 1986; Bernstein-Carlson & Putnam, 1993), acute dissociation was found to predict a higher degree of creativity in a group of participants in a photography competition (Van Heugten—Van Der Kloet et al., 2015).

One of the most consistent findings in nonclinical samples is the positive association between dissociation and the propensity to fantasy, which underscores a profound and long-term implication of dissociation on fantasy and imagination (Lynn & Rhue, 1988; Merckelbach & Jelicic, 2004; Wilson & Barber, 1983). This suggests dissociation in the normal population was associated to a cognitive style based on the use of mental imagery; however, no clear relationship was found (see Vannucci & Mazzoni, 2006). These authors have shown that the greater the number of dissociative experiences, the greater the tendency to generate mental imagery of future events, but no cognitive preference was found in the use of the visual code versus the verbal code.

Parra (2009) examined whether high scores in the predisposition to having hallucinations in healthy individuals was related to a rise in the intensity of illusory, schizotypal tendencies, absorption, dissociation, and fantasy proneness. Though a relationship was found between the hallucinatory experience and schizotypal personality in the general population, with correlations between absorption, dissociation, proneness to fantasy, and the total score of hallucination, no correlation was observed with the mental imagery scale. The auditory modalities and hypnagogic/hypnopompic hallucinations scored significantly higher than the other hallucinatory modalities.

In the context of the art world, the subject of this study, there is ongoing controversy regarding the relationship between artistic creativity, the artist, and madness. It is as if creating something new to the norm entailed abandoning comfortable normality to be banished to a corner or the fringes. This romantic view, which has been challenged by authors, such as Weisberg (1986), who deconstruct the myths of creativity, with artists who envisage new approaches and new experimental tests that call into question conventional concepts such as health-illness, and sanity-insanity. Contemporary artists continue to reflect on the madness of the creative act, from a more global perspective (Moraza, 2008) to a more intimate point of view, where the creative act submerges the individual into a type of inner absence that is elementary if something is to flow (Meana, 2015), laying bare the contradiction between the sanity need to create a work of art and the need for isolation, free from the confines of the corseted norm that stifles creativity. The results of previous studies have also highlighted this apparent contradiction; the relationship between dissociation and imagination appears to be strong, but the experimental results are not so convincing (see Parra, 2009; Vannucci & Mazzoni, 2006). Thus, this study aimed to examine the relation between dissociation and a specific type of imagery, auditory imagery, which has never been assessed in spite them being associated.

Thus, the aim of this study was to determine significant differences in auditory imagery between women and men, between high and low dissociative ability, and between high and low dissociative experiences. In this innovative experimental design, dissociative experiences was related to auditory imagery, and two measures of dissociation were assessed, dissociative experiences and dissociative abilities.

**METHOD**

**Participants**

The sample consisted of 170 second-year undergraduates from the fine arts faculty of Vigo University in northwestern Spain (94 women and 76 men), mean age 22.75 years
(SD = 6.17 years) with a range of 18 to 26 years. The study was conducted in accordance with ethical rules contained in the Declaration of Helsinki of 1964. Written informed consent was obtained from each participant.

Material

Participants were given the following tests: The Spanish translated version of the Dissociative Ability Scale (DAS; Fisher, Johnson, & Elkins, 2013). The DAS is a 17-item questionnaire on the ability to perform certain actions which are scored using a five-point Likert type scale, where 1 indicated I am not able to do this, and 5 indicated I am very capable of doing this. The test has two scales that measure two constructs of dissociation: autopilot and aut scoopy. An example of an item from the autopilot scale would be: “When I drive I have the ability to be so absorbed by my thoughts that I can arrive to my destination without any memory of the trip”, and an example form the Autoscopy scale would be: “I have the ability to be so internally engaged that I can feel disconnected from my body”. Cronbach’s alpha was .79.

The Spanish version (Icarán et al., 1996) of the DES (Bernstein & Putnam, 1986) was used, which is a 28-item questionnaire on the frequency of dissociative experiences. The items included experiences of amnesia, loss of consciousness, depersonalization, derealization, absorption, and identity disorders. Each item was scored on a 0 to 100 scale. Participants were required to score the frequency of their dissociative experiences by ticking a point on a dotted line where 0 was equal to never (0% of the times) and 100 equalled always (100% of the times). The total scores were calculated by averaging the 28-item scores. In this study Cronbach’s alpha was .91.

The Spanish version of the Auditory Imagery Questionnaire (AIQ, Hishtani, 2009) was used, consisting of 12 questions on imagery vividness that are scored on a five-point scale where (1 = perfectly clear and as vivid as normal audition, and 5 = no image at all; you only know that you are thinking of the sound or voice). In this study Cronbach’s alpha was .86.

Finally, the Spanish version (Campos & Pérez-Fabello, 2011) of the Clarity of Auditory Imagery Scale (CAIS; Willander & Baraldi, 2010) was used, consisting of a 16-item measure of the clarity of auditory imagery. Participants were instructed to rate how clearly they could imagine the sound presented in each item using a 5-point Likert type response format where 1 = not at all, and 5 = very clear. Cronbach’s alpha was .91.

Procedure

Undergraduates were administered the previously mentioned tests in small groups in their respective classrooms. Test instructions were read aloud, there was no time limit, and the presentation of the tests was randomized. All participants freely volunteered to participate in the study, and were assured their data would remain anonymous and confidential. The test were evaluated following standard instructions, and individuals were classified as either high or low on the DAS or on the DES according to whether the score was above or below the group mean for each test. Data analysis was performed using the SPSS software package, version 22.

RESULTS

To find out significant gender differences on the DAS and the DES, two t-tests for the independent groups were performed, but no significant differences were observed on the DAS, t(168) = 1.23, p = .22, with women scoring 46.98 (SD = 10.18), and men 45.20 (SD = 8.32). In contrast, significant gender differences were observed on the DES, t(168) = 3.54, p = .001, with women scoring higher on the DES (M = 28.16, SD = 14.21) than men (M = 21.27, SD = 10.85). The correlation between the DAS and DES scores was .48, p < .001.

The next step was to determine if there were significant differences in auditory imagery (AIQ) between women and men, between high or low in dissociative experiences (DES), and between high or low in dissociative ability (DAS; the means and standard deviations for the groups are shown in Table 1). To assess these differences, a 2 (gender) × 2 (high or low in dissociative experiences, DES) × 2 (high or low in dissociative ability, DAS) analysis of variance (ANOVA) was performed. The scores on the auditory imagery (AIQ) were used as the dependent variable. No significant differences were found in auditory imagery (AIQ) in terms of gender, F(1, 156) = 2.50, p = .12, η² = .02, nor between high or low on the DES, F(1, 156) = 1.61, p = .21, η² = .01, but there were significant differences in auditory imagery (AIQ) between participants high and low on the DAS, F(1, 156) = 11.66, p = .001, η² = .07. Individuals scoring high on the DAS, scored low on the AIQ, (M = 24.74, SD = 7.32) (more auditory imagery) than subjects scoring low on the DAS (M = 29.11, SD = 9.40). No interaction was significant: between gender and the DES, F(1, 156) = .27, p = .61, η² = .01, between gender and the DAS, F(1, 156) = 2.46, p = .12, η² = .02, between the DES and the DAS, F(1, 156) = .01, p = .92, η² = .01, nor between the three variables (gender, DES, and DAS)., F(1, 156) = .43, p = .51, η² = .01.

A further aim was to assess significant differences in auditory imagery (CAIS) between women and men, between high or low in dissociative experiences (DES), and between high or low in dissociative ability (DAS; the means and standard deviations for the groups are shown in Table 1). To determine if these differences
TABLE 1  
Means and standard deviations in Auditory Imagery Questionnaire (AIQ) and Clarity of Auditory Imagery Scale (CAIS) of Males, Females, High and Low in Dissociative Experiences Scale (DES), and of High and Low in Dissociative Ability Scale (DAS).

<table>
<thead>
<tr>
<th>Groups</th>
<th>AIQ</th>
<th>CAIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Males</td>
<td>26.04</td>
<td>8.49</td>
</tr>
<tr>
<td>Females</td>
<td>27.84</td>
<td>8.90</td>
</tr>
<tr>
<td>High DES</td>
<td>27.38</td>
<td>8.66</td>
</tr>
<tr>
<td>Low DES</td>
<td>26.81</td>
<td>8.86</td>
</tr>
<tr>
<td>High DAS</td>
<td>24.74</td>
<td>7.32</td>
</tr>
<tr>
<td>Low DAS</td>
<td>29.11</td>
<td>9.40</td>
</tr>
<tr>
<td>Total</td>
<td>27.07</td>
<td>8.75</td>
</tr>
</tbody>
</table>

*High scores on AIQ indicate low auditory imagery and vice-versa.

were significant, a 2 (gender) × 2 (high or low in dissociative experiences, DES) × 2 (high or low in dissociative ability, DAS) ANOVA was performed. The auditory imagery scores (CAIS) were used as dependent variable. No significant differences in auditory imagery (CAIS) were observed in terms of gender, F(1, 156) = .01, p = .97, η²p = .01, but significant differences in auditory imagery (CAIS) were found between participants scoring high or low on the DES, F(1, 156) = 19.21, p < .001, η²p = .11. Individuals scoring high on the DES scored lower on the CAIS, (M = 57.22, SD = 12.98), than subjects scoring low on the DES (M = 62.92, SD = 11.12). Moreover, significant differences in auditory imagery (CAIS) were observed between participants scoring high or low on the DAS, F(1, 156) = 8.93, p = .003, η²p = .05. Participants scoring high on the DAS scored higher on the CAIS, (M = 62.88, SD = 13.13), than participants scoring low on the DAS (M = 58.13, SD = 11.16).

There was no significant interaction between gender and the DES, F(1, 156) = .41, p = .53, η²p = .01, nor an interaction between the DES and the DAS, F(1, 156) = .42, p = .52, η²p = .01, but the interaction between gender and the DAS was significant, F(1, 156) = 3.74, p = .05, η²p = .02 (see LinkManagerBM_FIG_jCooorQSTi). Women scoring high on the DAS scored higher on the CAIS (M = 63.74, SD = 11.93) than men scoring high on the DAS, (M = 61.36, SD = 15.15). In contrast, women low on the DAS had lower scores on the CAIS (M = 56.55, SD = 10.64) than men obtaining low scores on the DAS, (M = 59.82, SD = 11.57). The interaction between the three variables (gender, DES, and DAS) was not significant, F(1, 156) = 3.49, p = .06, η²p = .02.

**DISCUSSION**

The Cronbach’s alphas obtained in this study were good as ranked by George and Mallery (2003). No differences significant were found between women and men in dissociative abilities on the DAS. A review indicated that there are no studies measuring gender differences on this scale, but gender differences in dissociative experiences were found on the DES, i.e., women obtained significantly higher scores than men. These results contradict the findings of previous studies (Icarán et al., 1996; Pérez-Fabello & Campos, 2011c); however, it should be noted that in both of the previous studies, the number of women and men was not proportional.

The correlation between the DAS and the DES was significant but moderate (.48, p < .01), indicating these scales do not measure the same, the DAS refers to abilities, and the DES to real-life experiences. Fisher et al. (2013) estimated the correlation between the DAS and the two DAS scales (autopilot and autoscopy). The correlation between DES and the autopilot scale was .63 (p < .001), and the correlation between the DES and the autoscopy scale was .67 (p < .001). The correlation between the AIQ and the CAIS was significant (.61, p < .001), though they measure different aspects, i.e., the AIQ refers to experienced imagery whereas the CAIS refers to sounds and the clarity in hearing them. Campos and Pérez-Fabello (2011) found the CAIS correlated .46 (p < .001) with the Auditory scale of Betts’ Questionnaire Upon Mental Imagery (Betts’ QMI; Sheehan, 1967). Moreover, the AIQ correlated .48 (p < .001) with the Vividness of Visual Imagery Questionnaire (Marks, 1973), a measure of imagery vividness (Hişhitani, 2009).

No significant differences were observed between women and men in auditory imagery, neither on the AIQ, nor on the CAIS. Similar results were found in previous studies (Campos & Pérez-Fabello, 2011; Gissurarson, 1992;
Willander & Baraldi, 2010). Similarly, no significant differences were found in auditory imagery (AIQ) between high or low dissociative experiences (DES). Notwithstanding, undergraduates scoring high on dissociative abilities (DAS) obtained significantly higher scores in auditory imagery (AIQ) than undergraduates scoring low on dissociative abilities. The results of previous studies have also highlighted this apparent contradiction; the relationship between dissociation and imagination appears to be strong, but the experimental results are not so convincing (Lynn & Rhue, 1988; Merckelbach & Jelicic, 2004; Vannucci & Mazzoni, 2006; Wilson & Barber, 1983). A plausible explanation may lie in differences in the contents of the scales measuring dissociation. Although the DES measures real-life dissociative experiences that are actually lived, and the frequency of occurrence, the DAS measures the ability to experience certain situations and scoring them on a five-point Likert type scale.

When auditory imagery was measured on the CAIS, the results were surprisingly unexpected, i.e., significant differences were found in both high and low scores of both dissociative experiences (DES), and dissociative abilities (DAS). Strikingly, participants scoring high on the DES scored low on auditory imagery. Bearing in mind that the high ($M = 36.78$, $SD = 9.42$), and the low DES scores ($M = 15.16$, $SD = 5.91$) in dissociative experiences were considerably different, one would expect that high scores in dissociation to be considerably high, and for performance to be different to performance in low dissociation. It may be hypothesised that there may be a threshold beyond which creative dissociation ceases to be so, and may even have a negative impact, but further studies are required to elucidate these results. Notwithstanding, participants scoring high on the DAS scored significantly higher on auditory imagery (CAIS) than participants scoring low on the DAS. Similar results have been reported with other types of imagery (Parra, 2009; Vannucci & Mazzoni, 2006).

As for the interaction between gender and dissociative ability (DAS), women high in dissociative abilities were significantly higher in auditory imagery (CAIS) than men, but women low in dissociative abilities were significantly lower in auditory imagery than men. Unfortunately, there are no data from previous studies to contrast the results of this study, but the extreme scoring in women meant that the difference in auditory imagery between women scoring high or low in dissociation was considerably higher than in men. Future studies should endeavour to explore creative dissociative experiences, to assess gender differences in dissociation, and to analyse the relationship between dissociation and different modalities of imagery. Furthermore, these relationships should be assessed in other groups different to fine arts undergraduates given that previous studies have shown fine arts undergraduates scored higher on tests measuring dissociative experiences than other types of undergraduates (Pérez-Fabello & Campos, 2011c).

REFERENCES


