# The Dissociation Questionnaire (DIS-Q): Development and Characteristics of a new Self-Report Questionnaire

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A new self-report instrument for the screening of dissociative symptoms, the Dissociation Questionnaire (DIS-Q), has been administered to a representative sample of the Dutch and Flemish population on two occasions (N=374 and N=378). Four subscales were found, which together accounted for 77% of the common variance: (1) identity confusion; (2) loss of control over behaviour, thoughts and emotions; (3) amnesia; and (4) absorption. The DIS-Q shows good to excellent internal consistency and test–retest reliability together with good construct and congruent validity. The authors conclude that the DIS-Q might be of great help in the assessment of dissociative symptoms.

#### DISSOCIATION AND ITS ASSESSMENT

Dissociation is supposed to play an important role in many mental disorders. It is a descriptive concept introduced by Pierre Janet around the turn of the century (1889). The core of the dissociation concept is always a lack of integration of consciousness, often as a result of a traumatic experience. Recently, Janet's conceptions and ideas and herewith also the dissociation concept have received new attention (van der Kolk and van der Hart, 1989). The recognition of dissociative disorders in DSM-III

(American Psychiatric Association, 1980) has most certainly supplied a considerable stimulus. The dissociative disorders are described in DSM-III-R (American Psychiatric Association, 1987) as a 'disturbance or alteration of the normal integrational functions of identity, memory and consciousness'. It is revealed in the following basic characteristics: Memory lacunae (amnesia), identity disturbances (disturbed self-perception) and disturbances or alterations in consciousness (depersonalization, derealization). Besides the five different categories of dissociative disorders described in DSM-III-R (American Psychiatric Association, 1987), dissociative phenomena can also play an important role in other mental disorders among which are the

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borderline personality disorder (Herman *et al.*, 1989), post-traumatic stress disorder (Spiegel, 1988) and eating disorders (Vanderlinden *et al.*, 1992a).

Recent research has demonstrated that these dissociative symptoms often appear to be related to experiences of sexual abuse, physical violence and/or serious emotional neglect (van der Kolk, 1987; Chu and Dill, 1990; Terr, 1991). It is assumed that dissociation is a kind of mental avoidance or escape activity, when physical avoidance of—or actual escape from—highly threatening stimuli is impossible. The dissociation of a traumatic experience is reinforced by the resulting reduction of anxiety, tension and pain.

In view of the increased interest in these phenomena, instruments have been developed which aim at screening several dissociative symptoms and experiences: The Perceptual Alteration Scale (PAS) of Sanders (1986), the Questionnaire of Experiences of Dissociation (QED) of Riley (1988), and the Dissociative Experiences Scale (DES) of Bernstein and Putnam (1986). Psychometric studies of these questionnaires show that the DES is the only instrument with satisfactory reliability and validity (e.g. Bernstein and Putnam, 1986; Ensink and Van Otterloo, 1989; Fischer and Elnitsky, 1990; Frischholz et al., 1990, 1991; Ross et al., 1988, 1991). Since a European dissociation questionnaire was lacking (socio-cultural factors may play an important role in the experience of dissociative phenomena), and since we planned to cover a broad spectrum of dissociative experiences, we decided to construct a new dissociation questionnaire.

#### **METHOD**

# Development of the Dissociation Questionnaire (DIS-O)

The item-pool has been based, firstly, on statements by patients with dissociative disorders and, secondly, on a selection of items of the three existing dissociation questionnaires (DES, PAS and QED). After translation into Dutch, the latter items have also been reformulated and modified, in order to obtain a consistent format with respect to the sociocultural situation in Belgium and the Netherlands. In this way a pool of 95 items were composed. These items were submitted to five clinicians (psychologists and psychiatrists) who had experience in dealing with dissociative disorders. They were requested to evaluate each item separately, to which extent the item concerned reflected something about a dissociative experience. In this manner, 26 items

were eliminated and 69 items were retained. The eliminated items concerned mostly experiences that everyone has at times (e.g. 'It occurs that I want to do several things at the same time'). Five different answer categories were chosen: The subjects had to circle one of the five numbers, indicating to what extent that item or statement is applicable to that particular subject (1 = not at all; 2 = a little bit; 3 = moderately; 4 = quite a bit; 5 = extremely).

## Subjects

In the first phase the DIS-Q was sent to a representative sample of the general population. Since we assumed that dissociative experiences exist on a continuum, this procedure made it possible to study the presence of dissociative experiences in the general population (one of the goals of our study, see Vanderlinden et al., 1991) and next to develop standard scores. Hence, the DIS-Q was sent to 500 subjects in the Netherlands and to 300 Flemish subjects in Belgium. The Dutch sample was obtained through random sampling from the central population register. The Flemish sample was obtained through the cooperation of psychology students (Catholic University of Leuven), who were requested to distribute a series of questionnaires—according to a previously determined procedure—to a group of subjects who were representative of the Flemish population. In all, 374 questionnaires were collected (235 Dutch and 139 Flemish subjects), showing an almost perfect male/female ratio: 119 (50.6%) men versus 116 (49.6%) women in the Dutch sample and 69 (49.6%) men versus 70 (50.4%) women in the Flemish sample. The data further showed that our sample was representative of the Flemish and Dutch population in terms of age distribution and marital status.

### **RESULTS**

#### Factor Analysis

A factor analysis was performed on the scores of the total sample (374 subjects). In the final selection of the number of factors, the following criteria were applied: (1) Each factor should explain a minimum of 5% of variance and have an eigenvalue of greater than one, (2) the factor structure must be psychologically meaningful, (3) the factor structure should be replicable.

Four factors were extracted which together explained 77% of the common variance. The factors were then rotated using the varimax method. Five items were eliminated, since they obtained a

Pearson r value lower than 0.30 on the four factors. One of the items ('It occurs that I am surprised by the clothes that I am wearing without being able to remember having put these on') was answered by 95% of the subjects with 'not at all applicable'. Because of the resulting lack of distribution, this one item was also eliminated. For a description of the items and their Pearson r value per subscale separately (all loadings are positive), see the Appendix.

The first factor (eigenvalue of 17.96) accounts for 57.4% of the common variance and consists of 25 items. This subscale was named identity confusion and fragmentation, as described by Steinberg et al. (1990). Most of the items refer the fact that the person involved is aware of influences of dissociated alterpersonalities. Some items refer to experiences of derealization and depersonalization, which often accompany states of identity confusion. the second factor (eigenvalue of 2.60), accounts for 8.34 of the common variance and consists of 18 items. This subscale is named loss of control. These items are relating to experiences of losing control over behaviours, thoughts and feelings, and in that sense this subscale refers also to impulsiveness. The third factor (eigenvalue of 2.33), accounts for 6.0% of the common variance and consists of 14 items referring all to experiences of amnesia and memory lacuna. Therefore this subscale is named amnesia. The fourth factor (eigenvalue of 1.56) accounts for 5.40% of the common variance and was denominated absorption. This subscale consists of six items referring to experiences of enhanced concentration or socalled absorption.

The average item result (all scores are obtained by dividing the total score by the number of items and can vary between 1 and 5) for the total scale is  $1.5 \pm$ 0.4. The average score for each factor is as follows: Identity confusion  $1.4 \pm 0.4$ ; loss of control  $1.7 \pm 0.5$ ; amnesia,  $1.4 \pm 0.4$  and absorption  $1.9 \pm 0.6$ . Subscales 1 (identity confusion) and 3 (amnesia) show the lowest frequency in the population which probably suggests that they refer to more clearly pathological experiences. The intercorrelation matrix (Pearson *r*) for the four subscales and total DIS-Q score (see Table 1) shows high intercorrelations between the subscales identity confusion, loss of control and amnesia, and to lesser extent the factor absorption. These intercorrelations suggest that, along with subscale scores, a total scale result may be employed.

On the basis of a congruence rotation, wherein the results of the respective Dutch subjects were rotated toward the factor structure of the Flemish subjects and *vice versa*, high congruence coefficients have been detected: For the first factor 0.99 and 0.96 re-

Table 1. Intercorrelations (Pearson r) between total DIS-Q score and the four subscale scores (N = 374)

	Loss of Control	Amnesia	Absorption	Total DIS-Q
Identity confusion Loss of control Amnesia Absorption	0.75	0.67	0.48	0.92
		0.72	0.36 0.38	0.91 0.83 0.57

spectively, for the second factor 0.98 and 0.93, for the third factor 0.97 and 0.90, and for the fourth factor 0.97 and 0.90.

Meanwhile, several other factor analytic studies have been carried out on different subject samples (Vanderlinden et al., 1993). On a second subject sample from the Dutch population (N = 378) and on a group of psychiatric patients with mixed diagnoses (N=261). After rotation, again the four-factor solution turned out to be the most adequate, representing the underlying latent structure in the DIS-Q data of both samples. High congruence coefficients were detected (except for the fourth factor) when comparing the factor structure of the second Dutch sample and the patient sample with the original four-factor solution: For the first factor 0.94 and 0.95 respectively, for the second factor 0.95 and 0.94, for the third factor 0.92 and 0.90, and for the fourth factor 0.70 and 0.70.

# Internal Consistency and Test-Retest Reliability

An iterative Gulliksen item analysis (Verhelst and Vander Steen, 1972), has been performed on the items with a Pearson r of more than 0.30, and not a single item has been eliminated. The Cronbach's alpha coefficients show that the DIS-Q had good internal consistency: 0.96 for the total scale and 0.94, 0.93, 0.88 and 0.67 for the four subscales. The lower alpha coefficient for the last subscale (absorption) is probably due to the small number of items.

Test–retest reliability was measured by giving the DIS-Q to a group of 50 subjects randomly selected from the general population (25 adolescents and 25 adults) on two occasions with an interval of 3 to 4 weeks. The DIS-Q test–retest reliability coefficient is 0.94 (p < 0.0001) for the total score and respectively 0.92, 0.92, 0.93 and 0.75 for the four subscales. Reliability coefficients of the separate items range from 0.42 to 0.99, with 61 of the 63 items yielding coefficients reaching a significance level of p < 0.0001,

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			S-Q otal	1	2	3	
	N	X	S.D.	+	+	+_	
Normals	378	1.5	0.4	+	_ +	+	***************************************
OCD	1 <i>7</i>	1.7	0.4	+	+	+	
Schizophr.	31	2.0	0.6	+	12	+	
Eat. dis.	98	2.2	0.5	+	+	+_	
PTSD	12	2.7	0.5	+	+		
DDNOS	23	2.9	0.6	+	+		
MPD	30	3.5	0.4	+	+	<u>.</u> +	

Table 2. Average scores and S.D. of total DIS-Q score among several patient groups

OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder; DDNOS = dissociative disorder not otherwise specified; MPD = multiple personality disorder.

one item reaching a level of p < 0.001 and one item a level of p < 0.005. According to these results, the DIS-Q scores appear to be stable over time.

#### Construct Validity: First Findings

A first indication of construct validity was obtained through a survey in which our dissociation questionnaire was filled out by a group of 98 eating disorder patients. Compared with the DIS-Q scores of a sample of the general population (an analysis of variance and Scheffe's t-test), patients showed higher scores on the four subscales identity confusion, loss of control, absorption (p<0.001) and amnesia (p<0.05). When comparing several subgroups of eating disorders, bulimic and atypical eating disorder patients appeared to have a significantly higher score on the DIS-Q than restricting anorexics. These higher scores were found to be related to the presence of traumatic experiences (Vanderlinden et al., 1992b,c).

The DIS-Q was then administered to several other psychiatric patient samples (all diagnosed according to DSM-III-R criteria): Multiple personality disorder (MPD, N=30), dissociative disorders not otherwise specified (DDNOS, N = 29); post-traumatic stress disorder (PTSD, N = 12); schizophrenia (N=31); eating disorder (N=98); and obsessive compulsive disorder (N = 17). The patients with dissociative disorder (MPS and DDNOS) were selected with the help of several colleagues (in Belgium and the Netherlands) who specialized in the treatment of trauma-related disorders. This patient group was carefully diagnosed using questionnaires (e.g. DES; Bernstein and Putnam, 1986) and a standardized clinical interview for dissociative disorders (SCID-D; Steinberg et al., 1990) in a Dutch translation (Boon and Draijer, 1991). The sample consisted of 51 females and two men, the mean age of this group

was 33.5 (SD = 10.8). The subjects had different demographic backgrounds (26 unmarried, 11 married, three living together, 11 divorced and two widowed) and educational levels. Ninety-six % (N=51) of the subjects in this patient group reported severe child abuse, either sexual or physical or a combination of both. The mean total DIS-Q scores and standard deviations for each patient group are presented in Table 2. A one-way analysis of variance (ANOVA) on the scores of the different groups yielded highly significant differences between the groups for the total DIS-Q scores (df = 6,588; F = 149.77; p < 0.0001) and subscale scores (p < 0.0001). T-tests were conducted whenever the ANOVA was significant and to avoid type I errors, the Bonferroni procedure for multiple comparisons was used (Alpha was set at p < 0.05). The results are showing that the patients with dissociative disorders obtain a significantly higher score on the DIS-Q (total score and subscales) compared with the other patient samples (except for patients with PTSD). Moreover, MPD patients earned significantly higher DIS-Q scores than DDNOS patients. After statistically correcting the scores for the possible influence of age (see Vanderlinden et al., 1993), all difference remained significant.

## Congruent Validity

To further expand the construct validity of the DIS-Q, we decided to study its congruent validity by administering both the DIS-Q and the DES to a group of psychiatric patients (N=101). Next, Pearson-r correlations between the two questionnaires, which are supposed to measure 'dissociative experiences', were calculated. The results (see Table 3) support the congruent validity of both the DIS-Q and the DES (r=0.85 for the total score). As we assumed, high correlations are found between the

Table 3. Intercorrelations (Pearson r) between DIS-Q and DES (N = 101)

	DIS-Q Total	DIS-Q1	DIS-Q2	DIS-Q3	DIS-Q4	
DES total DES amnesia	$0.85^{1}$ $0.71^{1}$	$0.80^{1}$ $0.62^{1}$	$0.75^{1}$ $0.64^{1}$	$0.80^{1}$ $0.78^{1}$	$0.46^{1}$ $0.30^{2}$	
DES deperson./derealization DES absorption	0.79 <sup>1</sup> 0.81 <sup>1</sup>	$0.82^{1}$ $0.74^{1}$	$0.65^{1}$ $0.74^{1}$	$0.65^{1}$ $0.76^{1}$	$0.45^{1}$ $0.49^{1}$	

DIS-Q1 = identity confusion; DIS-Q2 = loss of control; DIS-Q3 = amnesia: DIS-Q4 = absorption.  $^{1}$  p < 0.0001 (two-tailed);  $^{2}$  p < 0.002 (two-tailed).

DIS-Q subscale identity confusion and the DES depersonalization/derealization subscale (r = 0.82) and between the amnesia subscales of both questionnaires (r = 0.78).

#### DISCUSSION

This study describes the construction of a new selfreport instrument for the assessment of dissociative experiences. On the basis of an item and factor analysis on different subject samples, four factors, accounting for 77% of the common variance, have been identified: Identity confusion and fragmentation, loss of control, amnesia, and absorption. When we compare this factor structure with the DSM-III-R definition of dissociation, including five prominent clinical characteristics (amnesia, depersonalization, derealization, identity confusion and identity alteration), it is striking that the DIS-Q does not include any separate dimensions for depersonalization and derealization. However, one important factor was identified very clearly, namely, identity confusion and fragmentation, which moreover accounts for 57.5% of the variance. This subscale consists of various items referring to experiences of depersonalization and derealization. The experiences of identity confusion and fragmentation on the one hand and depersonalization and derealization on the other, appear to represent one large cluster in our factor structure. Similarly, in clinical practice it is often difficult to make a distinction between these different dissociative aspects since they occur in combination with one another. Apart from that, two other subscales have been identified in our factor structure, which are always mentioned as basic characteristics of dissociative disorders: Loss of control and amnesia. The results further show that the DIS-Q reliability rates are good to excellent, that the scores are stable over time and that the DIS-Q differentiates between patients with dissociative disorders and other subjects.

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# APPENDIX: THE FOUR SUBSCALES OF THE DIS-Q (PEARSON *r* VALUE)

# Factor 1: Identity Confusion and Fragmentation

- Item 30: 'I have the feeling that my body is not (really) mine (0.77)
- Item 59: 'I have the feeling that I am made up of two (or more) people (0.75)
- Item 57: 'It happens that I have the feeling that my mind is split up (0.72)
- Item 34: 'At times it seems as if someone else inside me decides what I do (0.70)
- Item 20: 'In particular situations I experience myself as a split personality (0.65)
- Item 7: 'It happens that I have the feeling that I am somebody else (0.62)

- Item 27: 'It happens that I look in the mirror without recognizing myself (0.61)
- Item 61: 'It happens that I hear voices in my head telling me what I am doing or making comment on what I am doing (0.53)
- Item 16: 'It happens that I am determined to do something, but my body acts quite differently against my own will (0.53)
- Item 11: 'At times I feel a great distance between myself and the things I think and do (0.53)
- Item 12: 'At times I wonder who I am exactly (0.51)
- Item 29: 'It happens that I have the feeling that other people, other things and the world surrounding me, are not real (0.50)
- Item 3: 'At times it seems that I have lost contact with my body (0.50)
- Item 28: 'It happens that I get the feeling that my body undergoes an alteration (0.49)
- Item 39: 'Sometimes I find myself in a well-known place that appears strange and unknown to me
- Item 50: 'I wish I had more control of myself (0.47)
- Item 41: 'Sometimes I think or do something against my liking in a way that does not suit me at all (0.46)
- Item 62: 'I see myself differently from the way other people see me (0.46)
- Item 40: I have the feeling that I do certain things without knowing why (0.44)
- Item 22: 'It happens that I am about to say something but something quite different crosses my lips (0.44)
- Item 36: 'I wonder how I can prevent myself from doing certain things (0.43)
- Item 63: It happens that I am looking at the world through a haze, so that the people and things surrounding me appear remote or vague (0.42)
- Item 2: 'I regularly have the feeling that everything is unreal (0.41)
- Item 10: 'I get into situations in which I do not want to be (0.38)
- Item 9: When I am tired, it seems as if a strange power from outside takes possession of me and decides for me what to do (0.38)

### Factor 2: Loss of Control

- Item 49: 'It happens that I catch myself day-dreaming (0.62)
- Item 14: 'I regularly feel an urge to eat something, even when I am not hungry (0.60)

- Item 23: 'There can be a sudden, complete change in my mood (0.58)
- Item 1: 'At times I have the feeling that I am dreaming (0.57)
- Item 24: 'It happens that I do something without thinking about it (0.57)
- Item 4: 'I gorge myself with food without thinking about it (0,54)
- Item 8: 'It happens that I am listening to someone and suddenly realize that I have not heard part or the whole of the story (0.53)
- Item 15: 'It happens that I get angry without wanting to be at all (0.52)
- Item 46: 'I find it very hard to resist bad habits (0.51)
- Item 48: When eating, I do so without thinking about it (0.51)
- Item 17: 'It happens that I feel confused (0.51)
- Item 60: 'I often do something without thinking about it (0.48)
- Item 43: 'I can enclose myself in fantasies or daydreaming so much so that it seems to be really happening (0.43)
- Item 5: While driving and/or bicycling, I suddenly realize that I cannot remember what happened on the way (0.41)
- Item 44: 'It happens that I stare aimlessly without thinking about anything (0.41)
- Item 6: 'I can, without reason or without wanting to, burst out laughing or crying (0.40)
- Item 38: 'It happens that I am not sure whether certain memories have really taken place or if I merely dreamed about them (0.40)
- Item 54: 'I lose every notion of time (0.33)

#### Factor 3 : Amnesia

- Item 21: 'It happens that I cannot remember anything about certain important events in my life, such as my final examinations or wedding-day (0.60)
- Item 58: 'It happens that I find notes, drawings or annotations of my own, without remembering having ever made these (0.55)
- Item 18: 'At moments I cannot remember where I was the day (or days) before (0.53)

- Item 25: 'I immediately forget what other people tell me (0.53)
- Item 37: 'Sometimes I suddenly notice that I find myself in a place that is unknown to me, without knowing how I get there (0.50)
- Item 32: 'It happens that entire blocks of time drop out and I cannot remember what I did then (0.50)
- Item 35: 'Sometimes I discover that I have done something without remembering anything about it (0.50)
- Item 13: 'It happens that I find new articles among my things without being able to remember ever having purchased them (0.47)
- Item 26: 'It happens that I am doing something and I am suddenly struck by a blackout (0.44)
- Item 55: 'It happens that I cannot remember whether I have really done something or if I merely planned it (0.42)
- Item 47: 'I sometimes forget where I have put something (0.40)
- Item 19: 'It happens that I am told that I act as if friends or family members were strangers to me (0.40)
- Item 45: 'I often think about nothing (0.32)
- Item 31: 'When I watch television, I do not notice anything that goes on around me (0.32)

## Factor 4: Absorption

- Item 53: 'When eating, I am aware of every bite I take (0.57)
- Item 33: 'I can remember so vividly something that happened formerly, that I have the feeling that I am reliving it (0.43)
- Item 51: When I walk, I am aware of each step I make (0.42)
- Item 52: 'In particular situations, I notice that I am able to do certain things with the greatest ease, that I find hard to do in others (e.g. sports, work, social contacts) (0.35)
- Item 56: 'It happens that I want to do two things at the same time and that I notice that I am arguing with myself the pros and cons (0.35)
- Item 42: 'I notice that I watch myself closely in everything I do (0.32)