



Relating College Students' Dissociative Experiences to Their Self-concepts Using the Twenty Statements Test

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Abstract

Background and objectives: Previous research suggests that dissociation proneness may be a precursor to dissociation on a clinical level, specifically to the development of identity symptoms, thus it is important to find out more about the relationship between the self-concept and dissociative experiences. This thesis aims to examine this relationship, and builds on earlier research by using different measures than previously done. Additionally, dissociative experiences are distinguished into two subcategories (compartmentalization and detachment). There are two hypotheses: 1) Participants who score high on compartmentalization have a more differentiated self-concept; 2) Participants who score high on detachment have a more negatively valenced self-concept.

Method: In a sample of 377 college students, the Twenty Statements Test was used to assess the self-concept structure, and the Detachment and Compartmentalization Inventory was used to assess the two categories of dissociation. A correlational design is used.

Results: Self-concept differentiation was not significantly associated with either detachment or compartmentalization. Both detachment and compartmentalization were found to be significantly negatively associated with self-concept valence, though more so for detachment.

Limitations: Among the limitations were a power below .80 for small effect sizes, and a sample of only college students.

Conclusion: Findings are mostly in line with previous research, though a new finding is that the relationship between detachment and self-concept valence was stronger than for compartmentalization and self-concept valence. Further research could explore this relationship in clinical settings, using the same instruments or using others. Suggestions are the Five-Factor Self-Concept Questionnaire, the Dissociative Experiences Scale, the Somatoform Dissociation Questionnaire and the Traumatic Dissociation Scale.

Relating College Students' Dissociative Experiences to Their Self-concepts Using the Twenty Statements Test

In the book *What's wrong with me: Faces of the DSM* (Busato & Valckx, 2018), people living with mental disorders tell their story. One of these stories is the one of Robin Plücken, who has PTSD and a dissociative disorder, though it is not yet clear which dissociative disorder she has specifically. Her account focuses mostly on her dissociative experiences. For example, she describes feeling like she is looking at herself from a distance, and losing control of her actions. She recounts an instance where, while dissociating, she drove her car to a gas station to buy razor blades and painkillers to harm herself with. She says the angry part of her personality takes over during these dissociative episodes, and that these experiences make it difficult for her to know who she really is. In her words: "Who am I? That question is very difficult to answer" (Busato & Valckx, 2018, p. 158). This thesis will take a closer look at the relationship between dissociative experiences and the self. The research question is: do people scoring high on dissociative experiences differ in the structure of their self-concept?

The self-concept consists of information about the self, such as traits or values. Information gathered throughout life is integrated into the self-concept, eventually leading to a complex but clear sense of self (Campbell et al., 1996). As we have seen in the case of Robin, defining one's self-concept may be difficult for individuals living with dissociative experiences. In the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5), dissociation is defined as "a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior" (American Psychiatric Association, 2013; Chapter Dissociative Disorders). Though dissociation mostly occurs in clinical populations, the broader term of

dissociative experiences also refers to the experiences that are found in the general population, such as daydreaming, for example (Ross et al., 1990).

A study by Chiu et al. (2017) examined the relationship between self-concept structure and dissociation proneness in a sample of 90 college students. Dissociation proneness was used to refer to how likely (or prone) someone is to have dissociative experiences. The sample was divided into three groups: high, medium and low dissociation proneness, based on the Dissociative Experiences Scale (DES). Self-concept differentiation and the proportion of negative versus positive attributes (valence) of the self-concept were examined for each group. Differentiation refers to having many aspects of the self, and includes distinctiveness of each of those aspects. For example, someone describes themselves as both a kindergarten teacher and honest. This person uses an occupational identity and a trait to describe themselves, which are two different aspects, making this person's self-concept more differentiated than when only mentioning traits for example. In addition, naming specific aspects, such as only being honest to your partner, adds to the distinctiveness of a self-concept. In Chiu et al. (2017), self-concept differentiation was measured by the self-descriptive card-sorting task. In this task, participants nominated self-aspects that represent the self in different roles or circumstances. They then received a deck of 40 cards with positive or negative attributes on them, which they sorted by matching them to their previously nominated self-aspects. A high amount of self-aspects with non-overlapping valence attributes represented a more differentiated self-concept. The proportion of negative versus positive attributes chosen represented the valence of the self-concept. The results were that people high in dissociation proneness had a more differentiated self-concept, and also reported more negative attributes than people lower in dissociation proneness.

Recent research has suggested that two specific categories of dissociation can be distinguished: detachment and compartmentalization (Holmes et al., 2005). Detachment can

be described as an alteration in consciousness where someone feels disconnected from reality, or from the self, as seen in depersonalization/derealization disorder. In compartmentalization, certain mental processes are not consciously accessible for a time. They are compartmentalized away from conscious control, essentially fragmenting the self. An example of compartmentalization is dissociative identity disorder, where the self is fragmented into multiple selves (Butler et al., 2019; Holmes et al., 2005). Chiu et al. (2017) included the Somatoform Dissociation Questionnaire (SDQ) and Traumatic Dissociation Scale (TDS), which measure symptoms that approximately fit into the compartmentalization and detachment subcategories, respectively (Butler et al., 2019; Chiu et al., 2017). However, the means for the low, medium and high group of dissociation proneness were not different enough to be able to draw conclusions, as the standard deviations for the SDQ and TDS were quite high. It is possible that the relationship with the self-concept for the two dissociation subcategories is different than for dissociative experiences as a whole. Because compartmentalization is characterized by fragmentation of the self, it is expected that those high in compartmentalization have a more differentiated self-concept, more so than those high in detachment. For those high in detachment, key symptoms are experiencing events without emotion, and seeing the outside world as lifeless or two-dimensional (Butler et al., 2019). Dull or absent emotions may amplify the weight of any negative emotions, according to negativity bias (Norris & Wu, 2021). Hence, it is expected that those high in detachment have a more negatively valenced self-concept.

This thesis will build on the Chiu et al. (2017) study, examining the relationship between dissociative experiences and the structure of the self-concept. Specifically, differentiation and valence of the self-concept will be examined. Additionally, this thesis will distinguish between two subtypes of dissociation: compartmentalization and detachment. Different measures for the concepts of self-concept differentiation and valence will be used

than in Chiu et al. (2017), as well as a different measure for dissociative experiences. If there is indeed a relationship between dissociative experiences and the structure of the self-concept, then this relationship should still hold when different measures are used. Chiu et al. (2017) suggest that dissociation proneness may be a precursor to dissociation on a clinical level, specifically to the development of identity symptoms, thus it is important to find out more about the relationship between the self-concept and dissociative experiences. The current thesis examines two hypotheses: 1) Participants who score high on compartmentalization have a more differentiated self-concept; 2) Participants who score high on detachment have a more negatively valenced self-concept.

Method

Participants

The sample consisted of 456 first-year students at the University of Groningen, who participated in the study in return for study credits. The data was collected prior to the start of this thesis. Of the total sample, 79 participants indicated they did not respond truthfully or were deemed invalid responders based on the Chapman Infrequency Scale (Chapman & Chapman, 1986; cited in Roivainen, Veijola, & Miettunen, 2016). After exclusion of these participants, 377 remained. Of the total valid sample ($N = 377$), 71.6% was female ($N = 270$), 21.8% was male ($N = 82$). As for age, 87.8% was between 18 and 24 years old ($N = 331$), 1.3% was under 18 ($N = 5$), 3.7% was between 25 and 34 ($N = 14$), and 0.5% was over 35 years old ($N = 2$). Participants were also asked about their native language; 10.3% indicated English was their native language ($N = 39$), while 83% had a native language other than English ($N = 313$). 83.3% of participants had a western, or individualistic culture ($N = 314$), while 5.8% had an eastern, or collectivistic culture ($N = 22$). It should be mentioned that this study had a power lower than .80 for effect sizes under .15 with a two-sided significance level at $\alpha = .05$, calculated using a priori analysis in G*Power (Faul et al., 2007). Cohen (1992) recommends a power of at least .80 to be able to reliably detect effects.

Materials

Detachment and Compartmentalization Inventory (DCI; Butler et al., 2019)

The DCI consisted of 22 items that measure dissociative experiences, of which 10 items assessed detachment symptoms and 10 further items assessed compartmentalization symptoms. The remaining two items assessed validity. These items described an occurrence to which a score of 0 (never) would be highly unlikely, and a score of 1 or higher (at least once or twice in my life) on both items was required for the responses to be counted as valid. An example of a validity item is “I tell a small lie to stop someone being disappointed or cross

with me”. All items were answered on a Likert scale, ranging from 0 (never) to 7 (daily). An example of a compartmentalization item is “For no medical or physical reason I cannot feel all or parts of my body”. An example of a detachment item is “What I see looks ‘flat’ or ‘lifeless’, as if I am looking at a picture”. According to Tavakol and Dennick (2011), a good internal reliability has at least a Cronbach’s α of .70. The authors (Butler et al., 2019) reported a Cronbach’s $\alpha = .97$ for the 20-item questionnaire, as well as $\alpha = .93$ for the detachment section and $\alpha = .96$ for the compartmentalization section. The internal reliability of the current sample DCI was slightly lower (overall Cronbach’s $\alpha = .91$, compartmentalization subscale $\alpha = .85$, detachment subscale $\alpha = .87$), but all still above .70.

Twenty Statements Test (TST; Kuhn & McPartland, 1954)

The TST is a measure of self-concept structure. In the TST, participants were asked to come up with twenty “I am...” statements to the question “who am I?”. Respondents were then asked to choose four statements that they deem the most important, and to rate their valence from 0 (very negative) to 100 (very positive). All statements were coded based on the existing coding system by Rhee et al. (1995), with the addition of two new subcategories (trauma and psychological for self-ascribed identities). Additionally, the subcategories ethnicity/race/nationality and origin were grouped together. In total, there were eight categories and 34 subcategories. The entire coding system used in this study can be found in Appendix A. Additionally, each statement was coded as active or passive and trauma-related or not trauma-related, though these values are not discussed further because they are not relevant to this thesis. Statements were coded as invalid if they appeared to be nonsensical (e.g. I am piano, I am food). If a person repeated a statement, it was coded as repetitive. Invalid or repetitive statements were then excluded from analysis.

Three aspects of the self-concept were calculated: quality, complexity, and valence, which is based on previous studies that have used the Twenty Statements Task to assess self-

concept (Bennouna-Greene et al., 2012; Kuhn & McPartland, 1954; Rhee et al., 1995).

Differentiation of the self-concept was operationalized by the quality and complexity aspects, which taken together should give an idea of someone's self-concept differentiation. *Quality* refers to how specific a self-concept is. Self-concept quality was determined by coding statements as abstract (0) or specific (1) and taking the average value (excluding invalid or repetitive statements). A *complex* self-concept is one that consists of many different aspects. Complexity of the self-concept was calculated by the number of different subcategories used per person (excluding invalid or repetitive statements). Self-concept *valence* was assessed in two different ways. Participants judged the valence of their four most important statements with a rating from 0 to 100 (0 being negative, 100 being positive), of which the average was taken, which will be called *self-rated valence* henceforth. In addition, the valence of each statement was given a rating of positive (1), negative (-1) or neutral (0) by the researchers (the author and thesis supervisor), following ratings given in an article by Scott et al. (2019). The average of the ratings was then taken. This value will be referred to as *researcher valence*. Overall interrater reliability (IRR) for the coding of the TST statements was good, with a score of .87. According to Hartmann (1977), an IRR based on joint probability of agreement should be at least .75 to be acceptable. Table 1 displays the remaining IRR values (based on percent agreement) for the TST. More information on the coding process can be found in the design and procedure section.

Table 1

Interrater Reliabilities (Percent Agreement) for the TST

	IRR
Major categories	.87
Subcategories	.83
Quality	.91

Design and Procedure

The current study used a correlational design with questionnaire data. Dissociative experiences were distinguished into detachment and compartmentalization based on the DCI. Differentiation and valence of the self-concept were measured with the TST. There were three self-concept variables based on the TST (quality, complexity and valence). Apart from the DCI and TST, participants also answered questions on other measures of identity not relevant to the current thesis.

The TST was coded by the thesis author and supervisor. The coding process for the TST began by coding the first 10% of all valid TST responses according to the codebook to get an idea of the interrater reliability. The IRR values for the first 10% were above .80, with the exception of valence (IRR = .69). Initially, valence was rated according to personal judgment. Because of the low IRR, the valence rating for the entire sample (including the first 10%) was instead coded according to an article by Scott et al. (2019), in which 5500 words were rated on their valence. Whenever a word was not present in the article, or the rating seemed inconclusive, we based our coding on synonyms or semantically related words (e.g. hardworking and hard worker). All coding was done in MAXQDA (VERBI Software, 2019), after which it was exported to an excel sheet.

Results

Preliminary Analysis

In Table 2 is descriptive information for compartmentalization, detachment, quality, complexity, and the two valence variables. The most common subcategories used by participants in the TST were pure traits (46.70%; “I am funny”, “I am kind”), social self-ascribed identities (7.87%; “I am a feminist”, “I am sporty”) and family information (6.13%; “I am a friend”, “I am a sister”). A full overview of the distribution of subcategories can be found in Appendix C.

Table 2

Descriptive Statistics for the Main Variables

	N	Minimum	Maximum	M	SD
Compartmentalization	244	0.00	3.70	0.78	0.87
Detachment	244	0.00	5.80	2.22	1.19
Quality	305	0.05	0.95	0.46	0.19
Complexity	305	3.00	15.00	7.71	2.36
Researcher Valence	305	-0.80	0.80	0.30	0.22
Self-rated Valence	305	25.00	100.00	78.96	15.20

Assumption Checks

The assumptions for correlation have been met. All values were measured at least at interval level. There was a linear relationship between the variables, as there was no curved line in scatterplots between variables, but rather a straight one. When plotted in histograms, the distributions for all variables were relatively normal, though it should be mentioned that for compartmentalization the distribution was skewed towards the right (skewness = 1.44). According to Kendall and Stuart (1958), a skewness under 2 is still acceptable for

correlational analysis. In Appendix B, a histogram of the compartmentalization variable can be found.

Outliers and missing values

When a value lies more than two standard deviations from the mean, it is considered an outlier (Jones, 2019). There were two values for the researcher valence variable that were under $-.50$, which was more than two standard deviations from the mean. However, these values were not invalid when looking at the original statements. Results also remained largely the same when removing the outliers, therefore this did not warrant removing both values from the analysis.

From the total valid sample of 377 participants, there were 72 cases of missing values in the TST, which meant that all 20 statements were left empty, thus 305 valid responses remained for the TST. For the DCI, 133 participants of the total 377 had missing values or had invalid responses according to the validity items for the DCI, leaving 244 valid responses.

Correlational Analysis

All hypotheses were evaluated using Pearson correlations. In Table 3, all correlations between variables are displayed.

Table 3

Pearson Correlations Between the Main Variables

	Valence (SR)	Valence (R)	Quality	Complexity	Detachment	Compartmentalization
Valence (SR)	-					
Valence (R)	.43**	-				
Quality	-.05	-.31**	-			
Complexity	-.05	-.32**	.72**	-		
Detachment	-.20**	-.14*	-.05	-.04	-	
Compartmentalization	-.15*	-.10	-.06	-.03	.70**	-

Note: Valence (SR) refers to self-rated valence, Valence (R) refers to researcher valence.

* $p < .05$. ** $p < .01$.

The first hypothesis was not supported: neither complexity nor quality were significantly correlated with detachment or compartmentalization. However, detachment showed a weak (according to the guidelines of Cohen, 1988), but significant correlation ($p < .05$) with researcher valence, providing support for the second hypothesis. This means that on average, people with a higher detachment score have a more negative self-concept (or a more positive self-concept for lower detachment). Interestingly, this correlation was stronger and more significant ($p < .01$) for the self-rated valence, being small to medium in size (Cohen, 1988). Compartmentalization also had a small negative significant correlation with the self-rated valence ($p < .05$). Persons with higher compartmentalization may thus also have a more negative self-concept on average. Both valences also showed a significant medium positive correlation ($p < .01$) to each other according to Cohen (1988). This means they are definitely related to each other, but researcher valence is not the same as self-rated valence. There was a large positive significant correlation ($p < .01$) according to Cohen (1988) between compartmentalization and detachment, which is not surprising as there is also a large correlation ($r [192] = .93$) between the two subscales in the original article for the DCI questionnaire (Butler et al., 2019). The high correlation was also expected by Butler et al. (2019) as “all DCI items assess different facets of dissociation” (p. 533).

Discussion

This thesis examined whether college students who score high on dissociative experiences differ in the structure of their self-concept. Two hypotheses were tested: 1) Participants who score high on compartmentalization have a more differentiated self-concept; 2) Participants who score high on detachment have a more negatively valenced self-concept. Results showed that neither quality nor complexity were correlated with detachment or compartmentalization. There were small significant correlations for researcher valence and self-rated valence with detachment and compartmentalization.

The first hypothesis was not supported, as there appeared to be no significant association between self-concept quality and detachment or compartmentalization, or self-concept complexity and detachment or compartmentalization. This is surprising, as previous research indicates that there is a relationship between dissociation and differentiation of the self-concept (Chiu et al., 2017). A possible cause is that the sample consisted of college students, who may not experience enough dissociation to be able to make conclusions on the relationship with self-concept. However, Chiu et al. (2017) also used college students, though they used different measures for dissociative experiences. The current sample also did not differ much from the nonclinical sample in the original DCI article, though they did (as expected) score lower than the clinical sample (Butler et al., 2019). It is possible that the DCI was not able to capture dissociative experiences in the same way that Chiu et al. (2017) did with the DES. The DES may be better suited for measuring variations in low levels of dissociation.

Another possible cause may be that quality and complexity do not reflect the same concept of differentiation as described in Chiu et al. (2017). Quality and complexity were both based on the twenty statements given by participants in the TST. Chiu et al. (2017) used the self-descriptive card sorting task. A major difference between the card sorting task and the

TST, is that the TST (in our case) asks for twenty statements, while the card sorting task leaves it up to the participant to decide the number of self-aspect nominations. The attribute cards the participant then sorts to the self-aspects are also not bound to any limits, the participant decides how many self-aspect fit an attribute card. Even though the participants are free to make any “I am...” statement in the TST, they do have to come up with twenty statements. This may have played a part in how well the self-concept is represented. Perhaps the later statements are not as meaningful as the earlier statements the participant comes up with. Additionally, the TST was done through an online survey, while the card sorting task in Chiu et al. (2017) was done in person. This difference may have several effects on the responses. In an online survey, the participant may not be in an ideal environment to complete the questionnaire. They might be distracted, for example, and as a result be less serious. The card sorting task was done in (approximately) the same environment for all participants, and they were likely not in a hurry to finish the task. However, it is possible that participants do not feel comfortable being completely honest in front of a stranger, while an online survey is more anonymous and participants might thus be more honest.

The second hypothesis may be partly supported. Both detachment and compartmentalization had a small significant correlation with self-rated valence. The relationship was negative for both, but stronger for detachment. Detachment was also significantly positively correlated with researcher valence. This means that especially people with higher detachment had a more negative self-concept. In Chiu et al. (2017), it was also found that people high in dissociation proneness had a higher proportion of negative attributes in the self-descriptive card sorting task. To measure dissociation proneness, Chiu et al. (2017) used the DES, but also the SDQ and TDS, which may approximately represent the concepts of compartmentalization and detachment (Butler et al., 2019). However, high standard deviations made it difficult to draw conclusions for these two questionnaires based on the

three groups of high, medium and low dissociation. The DES did yield clearly differentiated groups. It is thus interesting that in the current study, the relationship with the self-concept valence was stronger for detachment than for compartmentalization. The negative correlation between dissociative experiences and self-concept valence was also stronger for the self-rated valence than for researcher valence. This may be because for self-rated valence, participants picked only four statements they found most important to their self-concept, and rated those. These four statements may better represent their self-concept than the twenty statements as a whole, because participants can filter out less meaningful responses.

Strengths and Limitations

A major strength of the current study is the high agreement for the coding system. The descriptions and examples for each category were clear enough that both researchers made largely the same decisions during the coding process.

There were also some limitations. Firstly, the DCI may not be very sensitive to variations in low dissociation levels. The current study used college students instead of a clinical population, and did score much lower than the clinical sample in Butler et al. (2019). Secondly, the power of the current study was below .80 for small effect sizes. A power of .80 is the minimum value recommended by Cohen (1992). This means that, for small effects, the chance of a false negative finding is higher, i.e. the chance of not finding an effect, when in reality there is an effect. Thirdly, parts of the coding system may have been unbalanced. Most categories of the coding system were coded as specific, with only four coded as abstract (pure traits, autonomous emotional states/psychological problems, and universal/oceanic and existential descriptions). In addition, almost half of the statements were pure traits. This may have had consequences for the quality variable, which depended on the proportion of specific versus abstract codes. Fourth, despite the high IRR for the researcher valence, some words could not be found in the Scott (2019) article and were based on synonyms or semantically

related words. The difference in means for researcher valence and self-rated valence may show that researcher valence is not the same concept. Notable is also the stronger link between dissociative experiences and self-rated valence (as opposed to the link with researcher valence). It may be preferable to use the self-rated valence, as they are also based on the four most important statements according to the participants. On a related note, more weight could be added to the four most important statements across all self-concept variables. As mentioned earlier, it may be that these four statements are more meaningful to participants than all twenty statements together, and thus better represent their self-concept. Finally, a disadvantage of correlational analysis is that causation cannot be tested. It might be that dissociative experiences do not necessarily affect self-concept structure, but rather that a different self-concept structure may cause more dissociative experiences.

Clinical Relevance and Future Directions

The major finding in this study was that dissociative symptoms are associated with the structure of the self-concept. People with higher detachment had a more negative self-concept valence. This is something that may need to be addressed when treating these persons. People with higher detachment may have more a negative self-concept, or those with a more negative self-concept may have more detachment symptoms. More research is needed on this relationship, as the current sample used only students, which may not be representable for those in psychological treatment. This study may also add some suggestions for coding the TST. The coding system by Rhee et al. (1995) has been used by several studies. Though it is quite comprehensive, it may benefit from further subdividing the traits category. In the current study, almost half of the statements fell under the pure traits category.

Future studies on the relationship between dissociative experiences and the self-concept could use different ways of measuring both concepts. For example, The SDQ and TDS could be used in a continuous form, rather than creating groups as in Chiu et al. (2017).

These questionnaires may differentiate better between low levels of dissociation, and also approximately measure the dissociation subcategories of compartmentalization and detachment. The DES could also be used, as it is a well-known questionnaire that appears to measure both low dissociation and high dissociation very well (Butler et al., 2019; Chiu et al., 2017). The DCI may also be used to test the relationship with the self-concept for dissociation on a clinical level. A possibility for a self-concept measure is the Five-Factor Self-Concept Questionnaire (see Garcia et al., 2018). This questionnaire assesses five dimensions of the self-concept, namely academic, social, emotional, family, and physical. It may be interesting to know whether some dimensions of the self-concept differ more with higher dissociation levels.

In summary, this study presents evidence that dissociative symptoms are related to the structure of the self-concept, specifically its valence. This relationship is especially strong for detachment symptoms. The more dissociative experiences a person has, the more negative the self-concept and vice versa.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Bennouna-Greene, M., Berna, F., Conway, M. A., Rathbone, C. J., Vidailhet, P., & Danion, J.-M. (2012). Self-images and related autobiographical memories in schizophrenia. *Consciousness and Cognition: An International Journal*, *21*(1), 247–257. doi:10.1016/j.concog.2011.10.006
- Butler, C., Dorahy, M. J., & Middleton, W. (2019). The Detachment and Compartmentalization Inventory (DCI): An assessment tool for two potentially distinct forms of dissociation. *Journal of Trauma & Dissociation*, *20*(5), 526–547. doi:10.1080/15299732.2019.1597809
- Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavalley, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology*, *70*(1), 141–156. doi:10.1037/0022-3514.70.1.141
- Chiu, C.-D., Chang, J.-H., & Hui, C. M. (2017). Self-concept integration and differentiation in subclinical individuals with dissociation proneness. *Self and Identity*, *16*(6), 664–683. doi:10.1080/15298868.2017.1296491
- Cohen, J.W. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. doi:10.1037/0033-2909.112.1.155
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. doi.org/10.3758/BF03193146

- Garcia, F., Martínez, I., Balluerka, N., Cruise, E., Garcia, O. F., & Serra, E. (2018). Validation of the five-factor self-concept questionnaire AF5 in Brazil: Testing factor structure and measurement invariance across language (Brazilian and Spanish), gender, and age. *Frontiers in Psychology, 9*. doi:10.3389/fpsyg.2018.02250
- Hartmann D. P. (1977). Considerations in the choice of interobserver reliability estimates. *Journal of applied behavior analysis, 10*(1), 103–116. doi:10.1901/jaba.1977.10-103
- Holmes, E. A., Brown, R. J., Mansell, W., Fearon, R. P., Hunter, E. C. M., Frasquilho, F., & Oakley, D. A. (2005). Are there two qualitatively distinct forms of dissociation? A review and some clinical implications. *Clinical Psychology Review, 25*(1), 1–23. doi:10.1016/j.cpr.2004.08.006
- Jones P. R. (2019). A note on detecting statistical outliers in psychophysical data. *Attention, perception & psychophysics, 81*(5), 1189–1196. doi:10.3758/s13414-019-01726-3
- Kendall, M. G., & Stuart, A. (1958). *The advanced theory of statistics*. New York: Hafner.
- Kuhn, M. H., & McPartland, T. S. (1954). An empirical investigation of self-attitudes. *American Sociological Review, 19*, 68–76. doi:10.2307/2088175
- Norris, C. J., & Wu, E. (2021). Accentuate the positive, eliminate the negative: Reducing ambivalence through instructed emotion regulation. *Emotion, 21*(3), 499–512. doi:10.1037/emo0000716.supp (Supplemental)
- Roivainen, E., Veijola, J., & Miettunen, J. (2016). Careless responses in survey data and the validity of a screening instrument. *Nordic Psychology, 68*, 114–123. doi:10.1080/19012276.2015.1071202
- Ross, C. A., Joshi, S., & Currie, R. (1990). Dissociative experiences in the general population. *American Journal of Psychiatry, 147*, 1547–1552. doi:10.1176/ajp.147.11.1547

- Rhee, E., Uleman, J. S., Lee, H. K., & Roman, R. J. (1995). Spontaneous self-descriptions and ethnic identities in individualistic and collectivistic cultures. *Journal of Personality and Social Psychology*, *69*(1), 142–152. doi:10.1037/0022-3514.69.1.142
- Scott, G. G., Keitel, A., Becirspahic, M., Yao, B., & Sereno, S. C. (2019). The Glasgow Norms: Ratings of 5,500 words on nine scales. *Behavior Research Methods*, *51*(3), 1258–1270. doi:10.3758/s13428-018-1099-3
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, *2*, 53–55. doi:10.5116/ijme.4dfb.8dfd
- VERBI Software. (2019). *MAXQDA 2020* (Version 20.4.0) [Computer software]. Berlin, Germany: VERBI Software. Available from maxqda.com.

Appendix A

Coding system for the Twenty Statements Test

Table A

Coding system

Category	Abstract/ specific	Explanation	Example
Traits			
Pure	Abstract	A constantly present trait	I am shy, I am hardworking
<i>Qualified</i>			
Contextualized	Specific	A trait that is present in a specific situation	I am bored when by myself, I am funny when I am with my partner
Temporal	Specific	A trait that is present in a specified time period	I am easily bored, I am sometimes annoying, I am a little hyperactive
Social identities			
Role-status	Specific	A social identity that is generally imposed by society	I am a student, I am a teenager
Family information	Specific	A social identity bound to a family role	I am sister, I am a boyfriend/girlfriend
	Specific	A social identity centred on	I am Dutch, I am

Ethnicity/race/nationality/origin		someone's (cultural) origins	Black/White, I am from [city], I am a Groninger
Gender	Specific	A social identity that is about someone's sex or gender	I am a girl, I am bisexual
Religion	Specific	A social identity tied to religious features	I am Muslim, I am spiritual
Occupation	Specific	A social identity based on what someone does for a job	I am a cashier, I am a psychologist
Negation	Specific	A social identity that someone is not	I am not a Christian, I am not Dutch, I am not a daughter
Name	Specific	Someone's name	I am [name]
<i>Self-ascribed Identity</i>			
Social	Specific	A social identity that is assigned based on a person's hobbies or likes/dislikes	I am a dog-lover, I am sporty
Psychological	Specific	An identity that is assigned based on someone's psychological state/problems	I am a patient
Trauma	Specific	An identity tied to one's history of trauma	I am a trauma survivor, I am a victim of abuse

Specific attributes

Preferences

Autonomous	Specific	A statement about the person's preferences, e.g. likes or dislikes, not related to others	I am interested in languages, I am into painting, I am a fan of beans
Social	Specific	A statement about the person's preferences, e.g. likes or dislikes, specifically related to others	I am interested in different cultures, I am fond of children, I am not in favor of communities

Aspirations

Autonomous	Specific	Something that the person desires to be, not in relation to others	I am a future psychologist, I am going to be successful
Social	Specific	Something that the person desires to be, specifically in relation to others	I am going to help a lot of people, I am going to be a great parent

Activities

Autonomous	Specific	Something that the person is doing, not related to others	I am studying, I am listening to music
Social	Specific	Something that the person is doing, specifically related to others	I am visiting friends, I am playing games with my association

Evaluative descriptions

Autonomous	Specific	An personal evaluation, unrelated to others	I am good at cooking, I am bad at most sports
Social	Specific	A personal evaluation that is in relation to others	I am a good friend, I am a good listener

Physical descriptions

Descriptive	Specific	A general statement about a person's physical appearance	I am tall, I am pretty, I am slim
Age	Specific	A statement about someone's age	I am 19, I am old/young
Factual	Specific	A statement that can be fact-checked	I am blond(e), I am [weight] heavy, I am [height] tall
Physical condition	Specific	A statement concerning a physical condition someone may	I am nearsighted

have

Emotional states/

Psychological Problems

Autonomous	Abstract	An emotional state that is unrelated to others	I am depressed, I am happy, I am excited, I am hyperactive
Social	Specific	An emotional state that is related to others	I am in love, I am proud of my sister, I am hated by my parents

Peripheral information

Immediate situations, states	Specific	A situation or state that is happening right now	I am cold, I am tired
Present residence	Specific	Where someone lives	I am living alone, I am living abroad
Others' descriptions	Specific	What others have said about someone	I am described as friendly
Possessions	Specific	Something the person owns	A flat owner, a dog owner

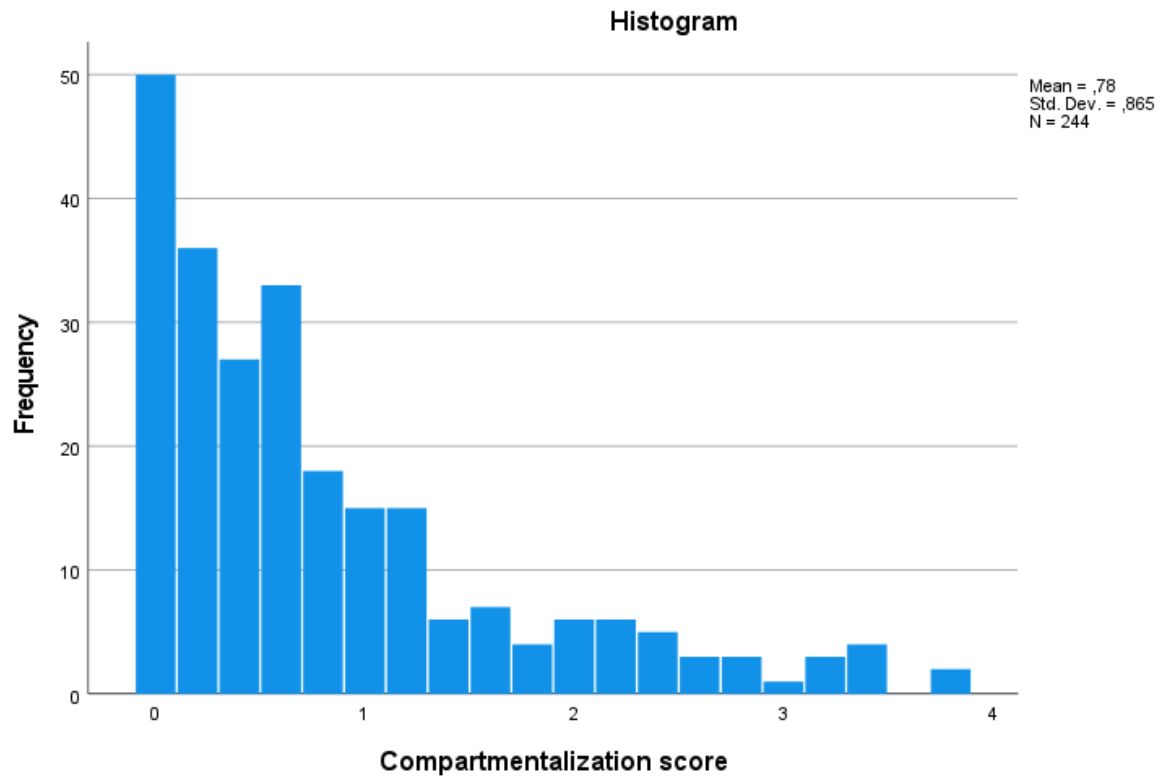
Global descriptions

Universal - oceanic	Abstract	A statement about someone's	I am a human, I am
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		place in the world/universe	an earthling
Existential	Abstract	An existential statement about someone's identity	I am myself, I am me

Appendix B

Histogram of Compartmentalization Scores



Appendix C

Overview of distributions of subcategories for the Twenty Statements Test

Table B

Distributions of subcategories

Subcategories	Frequency	Example statement
Emotional States/Psychological Problems - Autonomous	5.46%	I am stressed; I am happy
Emotional States/Psychological Problems - Social	1.00%	I am in love; I am heartbroken
Evaluative Descriptions - Autonomous	2.18%	I am a good cook; I am too lazy
Evaluative Descriptions - Social	1.28%	I am a good friend; I am better than others
Global descriptions - Existential	0.48%	I am myself; I am an individual
Global descriptions - Universal-oceanic	0.51%	I am alive; I am a part of society
INVALID STATEMENT	0.84%	I am hands; I am a rock
Periphiral Information - Immediate situations, states	3.87%	I am broke; I am fine

Peripheral Information - Other's descriptions	0.03%	I am known to hold grudges; I am rejected by girls
Peripheral Information - Possessions	0.13%	I am a pet owner; I am indebted
Peripheral Information - Present residence	0.43%	I am a roommate; I am living alone
Physical Descriptions - Age	1.21%	I am 20 years old; I am the youngest sibling
Physical Descriptions - Descriptive	1.77%	I am beautiful; I am short
Physical Descriptions - Factual	0.56%	I am a redhead; I am blue-eyed
Physical Descriptions - Physical condition	0.39%	I am healthy; I am lactose intolerant
REPETITIVE STATEMENT	0.31%	-
Social Identities - Ethnicity/race/nationality/origin	2.70%	I am a foreigner; I am multicultural
Social Identities - Family Information	6.13%	I am a friend; I am a sister

Social Identities - Gender	2.32%	I am gay; I am a woman
Social Identities - Name	0.07%	I am [name]
Social Identities - Negation	0.20%	I am not a party goer; I am not a morning person
Social Identities - Occupation	0.61%	I am a waitress; I am a volunteer
Social Identities - Religion	0.25%	I am agnostic; I am a believer
Social Identities - Role-status	4.80%	I am a student; I am single
Social Identities - Self-ascribed Identity - Psychological	0.33%	I am an insomniac; I am autistic
Social Identities - Self-ascribed Identity - Social	7.87%	I am a feminist; I am sporty
Social Identities - Self-ascribed Identity - Trauma	0.02%	I am traumatized
Specific Attributes - Activities - Autonomous	2.03%	I am learning; I am working

Specific Attributes - Activities - Social	0.10%	I am connecting people; I am trying to please others
Specific Attributes - Aspirations - Autonomous	0.15%	I am a future psychologist; I am going to be successful
Specific Attributes - Aspirations - Social	0.08%	I am a future father; I am a future wife
Specific Attributes - Preferences - Autonomous	0.95%	I am a music fan; I am loving coffee
Specific Attributes - Preferences - Social	0.23%	I am interested in the world around me; I am interested in children's rights
Traits - Pure	46.70%	I am funny; I am kind
Traits - Qualified - Contextualized	1.36%	I am excited for the future; I am fearful of death
Traits - Qualified - Temporal	2.66%	I am bored sometimes; I am tired a lot
