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The diagnostic usability of selected narrativity indices in stories about close relationships in the assessment of personality organization

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Summary

Aim. The aim of this study was to test the usability of selected narrativity indices identified from autobiographical accounts of important relationships in an assessment of neurotic (NPO) and borderline personality organization (BPO).

Method. Narrativity indices, both particular and generalized, were used to predict personality organization levels. Indices were derived from two separate layers of analysis: 1) lexical indices were counted with computer assistance; 2) evocative/reception indices dealing with coherence of the story were assessed using the competent judges method.

Results. It was found that the lexical narrativity index—the active "I"—was a good predictor of both BPO and NPO, while the human factor was a good predictor of BPO when low. Moreover, a generalized index was used to describe how stories are saturated with the narrativity indices of intentionality, concreteness, and active "I", but simultaneously deprived of human factor, and was found to be the best predictor of BPO. Furthermore, where the coherence of the story and of its subdimension (integration) rise, the probability of BPO diagnosis decreases.

Conclusions. This research provides support for the thesis that surface narrativity indices may predict deeper personality structure. Its results are justified in the light of Kernberg's theory, and have the potential to become a useful tool in clinical practice as a supplementary source of information in diagnostic and psychotherapeutic processes.

Key words: clinical diagnosis, narrativity, personality organization

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Introduction

Among researchers and theoreticians representing different psychological approaches, there is an agreement that diagnosis of personality pathology level is clinically very useful [1, 2]. Consequently, for example, in DSM-5, a separate stage of diagnosis has been introduced for the personality disorder domain, involving an estimation of personality level prior to the identification of the type of the disorder [3, 4]. Personality level is determined in relation to two main areas considered most important in the diagnosis of personality: 1) impaired sense of self-identity (identity, self-direction) and 2) failure to develop effective interpersonal functioning (empathy, intimacy).

In Kernberg's view, the level of personality pathology is comprehensively encompassed in object relations theory, where the intrapsychic functioning and deep structures of personalities are highlighted [5-9]. This theory emphasizes the process of intrapsychic structure development, during which some fixations or blocks may occur as an effect of the configuration of both constitutional and social factors. Such interruptions, appearing at different developmental moments, result in distinct levels of personality organization (see more about the developmental model in [10-12]). The levels distinguished by Kernberg range from the most severe psychotic level of personality organization (PPO), through borderline personality organization (BPO), to neurotic personality organization (NPO). If the intrapsychic development proceeds without serious disruptions until the seventh year of life, an integrated personality (IPO) is established. This is characterized by features such as a stable sense of identity, the capability of self-reflection, emotional regulation, and close intimate interpersonal relationships [10]. There are three main criteria used to differentiate personality organizations: reality-testing (poor in PPO, fundamentally intact but prone to deterioration in situations of extreme affect in BPO, intact in NPO), defensive mechanisms (which are most primitive in PPO, splitting-based in BPO, and repression-based in NPO), and the identity (the identity is diffused in PPO and BPO, but it is consolidated in NPO and the sense of identity is well established) [7]. The integrated personality level (IPO, so called normal personality) is characterized by mature defensive operations, adequate reality testing, and integrated identity, accompanied by lower intensity of psychological conflicts and lower rigidity than in NPO [9]. According to Laverdiere et al. [13], the model of Kernberg puts an interesting perspective on the relation between personality disorders and personality itself, because: 1) the model is hybrid, being both categorical (the types of disorders are specified) and dimensional (the levels of pathology reflect the severity of personality disorders); 2) the model includes the functioning of normal and disordered personality; 3) the model defines the basic structures and processes that underlie normal and pathological conditions (identity, defensive mechanisms, reality testing). The level of personality pathology, as is depicted here, is conceptually independent from personality features and reflects the range of adaptation failures, derived

from the disturbances in the development of the intrapsychic system which affects the potential development tasks in adulthood [2].

Empirical data suggests that the best predictor of success in psychotherapy is not the type of personality disorder, but the level of pathology [14]. This might be considered as evidence of the clinical importance of the diagnosis of the level of personality pathology. There is a great body of research delivering data on measures based on the literature, as well self-report questionnaires in the form of structured or semi-structured interview methods [15-19]. At the same time, the basic diagnostic tool used by psychologists, psychotherapists, psychiatrists remains the unstructured clinical interview, generating emotional and personally meaningful autobiographical stories on many subjects, but especially on important interpersonal relationships.

The empirical evidence demonstrates that the speech (narrative, story) features produced by people with different levels of personality organization might be useful in clinical practice as a supplementary source of information for analysing transference, countertransference and resistance processes. Moreover, it is also theoretically interesting how, on the surface level of speech, the deep personality structure may manifested [8]. The perspective presented here is also an example of an evidence-based psychological practice approach, defined as a supporting the psychological practice with empirical evidence about the effectiveness of specified practical procedures [20].

Research question

In the present study, attention is paid to the diagnostic usability of selected narrativity indices, which may be detected in autobiographical accounts of close relationships. Diagnostic usability is here defined as the probability of proper classification of people into BPO and NPO groups. Narrativity is a feature of utterances that indicates how well the text fulfils the criteria of a good story (narrative) – that is, the extent to which the text represents a temporal configuration of events, connected causally or intentionally. Moreover, in a speech high in narrativity, the narrator dynamically and with some distance presents the characters' (protagonists') fate, taking place in well-described circumstances (the represented world). Owing to this fact, the unique way in which the narrator interprets the events is brought to light. When the autobiographical account is considered, the narrator's view reveals how the heterogeneous experiences connected to the self are referred to each other and processed [21, 22].

Experiential processing, especially of emotional experiences, is commonly understood to mean the process of transforming experience, beginning with the preverbal, undifferentiated, simple units of experience (e.g., perceptual units) and aimed at more advanced forms which are susceptible to verbalization and which can ultimately be comprehensively processed and consciously reflected upon [23, 24]. When seen in this light, the narrativity indices obtained from speech analysis can be

treated as a means of access to the stages of experiential processing as well as the object relations maturity.

Aim

The aim of the presented study is to test the usability of the selected narrativity indices (derived from two different levels of speech analysis: the lexical level and the evocative/reception level) identified from autobiographical accounts of important relationships, in an assessment of neurotic and borderline personality organization. The question was posed of how well chosen narrativity indices determine the level of personality organization, if the integrated personality organization serves as a point of reference.

Method

Procedure and participants

The sample (N = 105) included voluntary participants both from a clinical sample (psychiatric ambulatory or day units; N = 47) and from a nonclinical sample (students of subjects other than psychology; N = 58), who were selected using a broader screening procedure. In total there were 380 participants, all of whom gave their informed consent. The sample was selected in two steps: 1) the screening procedure allowing classification of the participants into groups with different levels of personality organization (BPO, NPO, and IPO) and 2) a narrative qualitative interview aimed to form a relational autobiographical story in response to the following request: "Please tell a story about an important relationship you were involved in recently". In the nonclinical sample, the questionnaires were filled in first, and then the participants were requested to take part in an interview at the university research centre. The clinical sample participated in the questionnaire survey and in the interview during the same session, which took place at health care centres, such as hospitals and clinics. The interviewers were trained and instructed to remain in the background. The participants freely choose which relationship to report on (self-narrative theme), and their answer was audio-recorded and transcribed verbatim using chosen notations (covering nonverbal behaviour, paralinguistic vocalizations, and pauses). The self-narratives were then extracted from the transcripts of the whole interview and the content was analysed. The average narrative was 800 words in length (the minimum was 137 and the maximum was 9440), and the tokens here were counted without maze words.

Participants were selected intentionally with regard to their scores in a combination of two self-report measures: The Borderline Personality Inventory (BPI) of Leichsenring [25] in the polish adaptation of Cierpiałkowska [26] and the Neuroticism subscale from the Eysenck Personality Questionnaire (EPQ-R) [27] in the polish adaptation by

Brzozowski and Drwal [28]. Both measures are highly reliable and valid self-reporting methods [26, 28].

BPO was diagnosed when the score on the BPI was above 20, consistent with the suggestion of the authors of the test, who recommend the BPI for use in both borderline personality organization (BPO) screening and borderline personality classification [5, 25]. It consists of 53 true–false items on four scales: an identity diffusion scale, a primitive defence mechanisms scale, an impaired reality testing scale, and a scale for fear of closeness (fusion). Moreover, on the basis of both clinical and theoretical premises, it was also assumed that in the BPO group, the score on the Neuroticism subscale might range from low to high, but will most probably be high, because neurotic symptoms and emotional instability and dysregulation significantly co-occur with borderline diagnosis [29-31].

NPO was diagnosed when the Neuroticism score was high (according to the normalized scores; high here means 7, 8, 9, 10 sten [28]), but when the BPI score was also below 20. Thus, in classifying participants as NPO, those who self-reported neurotic symptoms were included, while those with symptoms specific to BPO were excluded. This measure configuration results in the presence of nonspecific somatic symptoms, irritability, prolonged emotional arousal and worries, experience nervous breakdowns; and simultaneously, the absence of severe decompensation arising from pathological dissociation and splitting (for similar selection criteria of the NPO group, [32, 17]. In the clinical population, an additional selection criterion was accepted in order to enlarge and even out the NPO group: a medium score on the Neuroticism subscale (5,6 sten) with a low BPI score, and at the same time neurotic, stress-related or somatoform disorders. With respect to this decision sample has increased by six people, the difference in narrativity indices between the two NPO subgroups was tested, and no significant difference was found ($p > 0.10$). The subgroups were thus treated equally in the subsequent stages of analysis. This made it possible to align number in this group to the number of BPO and NPO.

Consequently, low scores in both Neuroticism (1, 2, 3, and 4 sten) and the BPI (lower than 19 points) were recognized as IPO. It was acknowledged that the IPO group does not manifest either emotional instability which may constitute a risk factor for anxiety disorders [33] and borderline personality [34] or primitive defensive functioning connected with splitting or fusion, and 2) has high ego strength and intact reality testing.

Table 1. **Participant characteristics**

Level of personality organization	Nonclinical sample	Clinical sample	Entire sample (W; M)	Age (M; SD)
IPO (integrated)	31	0	31 (26; 5)	21.94 ±1.69
NPO (neurotic)	11	18	29 (24; 5)	25.90 ± 5.25

table continued on the next page

Level of personality organization	Nonclinical sample	Clinical sample	Entire sample (W; M)	Age (M; SD)
BPO (borderline)	9	26	35 (20; 15)	26.09 ± 4.82
Total	51	44	95	24.67 ± 4.60
rejected from intergroup comparison because the selection criteria were not fulfilled clearly	7	3	10	

For sample size: W – women; M – men. For age: M – mean; SD – standard deviation

After thorough screening, ten participants were excluded from the research groups because they did not clearly fulfil the classification criteria. The final BPO group consisted of 35 participants (20 women; age: M = 26; SD = 5), the NPO group of 29 people (24 women; age: M = 26; SD = 5), and the IPO group of 31 individuals (25 women, age: M = 22; SD = 2). The ratio of sex to level of personality organization reflects the availability of patients in health care centres and the epidemiology. The IPO group was recruited from a nonclinical population, but the NPO and BPO groups were recruited from both clinical (BPO: N= 26; NPO: N = 18) and nonclinical populations (BPO: N= 9: NPO; N = 11). In terms of education, 35% had higher education, 60% had secondary education, and 5% had lower than secondary education.

Women (N = 70) and men (N = 25) did not differ according to age ($p > 0.05$), but the IPO, NPO, and BPO groups did significantly differ ($F(2.92) = 9.64$; $p < 0.001$). The post hoc T3 Dunnett's test shows that the IPO group is significally younger than the NPO ($p = 0.001$) and BPO ($p = 0.001$) groups, which may be a limitation in generalizing the results of the study.

Narrativity measurement

The narrativity indices, both particular and generalized, were derived from two separate layers of analysis: the lexical (9 particular and 3 generalized indices) layer and the evocative/reception layer (4 dimensions of narrative coherence and 1 generalized index). These indices were used to predict personality organization levels. Narrativity was assessed through the method of content analysis, which is well known in clinical and general psychology [35, 36]. Lexical indices were counted with automated computer assistance, whereas the evocative/reception indices were counted using the competent judges method.

Lexical narrativity indices

Lexical narrativity indices were developed according to following stages: 1) the overall construction of the text corpus, 2) the construction and adaptation of narrativity indices according to the fundamental definition of narrative and other [21, 37–39]

studies, 3) the elaboration of external vocabulary, that is of the lists of words assigned to defined categories, 4) the computer-assisted coding of transcripts with the use of external vocabularies, 5) the generalizing and calculation of the final index values for each transcript [40]. In word frequency counting, the software CasualConc 1.8.7 (Mac OS X version) and Text Tools (thanks to Tomasz Obrębski, see also [41]) were used (Table 2).

Table 2. **Lexical narrativity indices—definitions and counting formulas**

Index	Definition	Counting formulas based on external vocabularies
Persuasiveness 1.	The extent to which the narrator tries to exert an impact on a listener [42]	Words and expressions which are attempts to exert an impact on a listener / tokens
Human factor 2.	The extent to which the narrative is about other people [43-44]	Words which refer to the other people / tokens
Active "I" 3.	The extent to which the narrator is an actant [43, 44]	First person singular verbs / general number of verbs
Life reflection 4.	The extent to which the narrator is preoccupied with life themes [21, 43, 44]	Words which refer to the issue of life, living, meaning etc. / tokens
Specificity 5.	Degree of detail in descriptions of persons, objects, places, events [37, 45]	Adverbs and adjectives / tokens
Concreteness 6.	The extent to which the narrator is preoccupied with sensory, perceptual, or somatic impressions [37, 45]	Words which refer to the sensory, perceptual, or somatic impressions / tokens
Causality 7.	The extent to which the narrator tries to order events causally [21, 39]	Cause–effect ordering words / tokens
Intentionality 8.	The extent to which the narrator tries to order events according to human intentions [21, 39]	Intention and aim ordering words / tokens
Temporality 9.	The extent to which the narrator tries to order events according to a time dimension [21, 39]	Time-ordering words / tokens

It was expected that particular indices would co-occur with each other, contributing in the end to the highly narrative text as a whole. In order to create the generalized narrative index, exploratory factor analysis was applied. Three factors emerged, explaining 55.63% of the variation (Table 3).

Table 3. **Principal component analysis. Matrix of rotated factor loadings (Varimax with Kaiser's normalization), means, and standard deviations**

Index	M	SD	Factor		
			Narrativity 1	Narrativity 2	Narrativity 3
Persuasiveness	0.080	0.025	0.732		0.387
Temporality	0.083	0.029	0.670		

table continued on the next page

Life reflection	0.008	0.006	0.655		
Specificity	0.114	0.029	0.592		0.504
Intentionality	0.014	0.009		0.734	
Concreteness	0.007	0.004		0.671	
Active "I"	0.288	0.079		0.579	-0.366
Human factor	0.190	0.080		-0.568	
Causality	0.023	0.009			0.858
Percentage of variation explained			21.44	19.1	15.09

Extraction method of principal components factors. Varimax's rotation method with Kaiser's normalization. Rotation reached convergance in six intervals.

When the factor analysis results are taken into account, the generalized narrativity index is recognized as varied or not uniform, and should be treated as triple—that is, manifesting three different aspects of the utterances' narrativity. The first factor explained 21.4% of variance and included persuasiveness, temporality, reflection, and specificity. The utterances high in this factor are detailed, temporally ordered, and refer to the idea of time and reflections on life and living. They also consist of persuasive force elements. If the theme of the stories is taken into consideration (intimate interpersonal relationships) it is found that the texts contain detailed and convincing descriptions of relationships put in a temporal perspective and also personal reflections on the relationship evoked. In short, this kind of narrative might be referred to as "specifically and convincingly about life and the course of events".

The second factor (19.1% of variation explained) consists of intentionality, concreteness, the active "I", and the reversely correlated human factor. The utterances characterized by high rate of this indicator are made up of low reference to other people, but at the same time accent the narrator's activities (the "I" as a hero of the action), employ an intentional ordering of events, and frequently appealing to sensorial, perceptual, and somatic sensations. Considering the narrations' theme, this factor provides the story about the narrator's actions, intentions, and sensations, but not about other people—which may seem curious, but is nonetheless internally consistent. This factor may be described as "my intentions, actions and sensations but not yours".

The third factor (15.09% of variation explained) is composed of causality, specificity (also more significantly present in factor 1), and the reversely correlated acting "I" (more important in factor 2). This factor's parameters are the weakest, both when its values and the consistency are taken into account, so it was treated with some caution. However, the characteristic of narrative may be circumspectly outlined: the narratives are concentrated on the interpersonal events' causal connections.

Every narrative text was described with the use of not only the particular narrativity indices, but also the three generalized factors.

Narrative coherence

In order to determine the coherence of the narrative, the well-known and well-described methods of speech coding was adapted from literature [46, 47]. The term coherence is often understood to describe a complete, convincing story that is meaningfully linked to biography [43]. It is the basic index of the quality or effectiveness of a narrative, especially useful in studying life-story accounts. Baerger and McAdams [46] operationalized coherence along four dimensions: orientation (providing the audience with context), structure (structural elements of an 'episode'), affect (evaluative or reportable point that gives the story emotional significance – the reason why the story was told), and integration (situating the story within the context of the larger life story or identity and making personally meaningful comprehensions). Dimensions are assessed on five-point scale, from 0 (lack of coherence) to 4 (very coherent), and a general score for coherence can be established by calculating mean scores.

The content analysis of the self-narratives adopted the competent judges method. It is important here that the judges were not treated mechanistically, as a separate source of coding for the same material, but as a representative audience and the recipients of the story, who are able to assess the coherence of the story. This approach is consistent with linguistic and psychological discussion in the field; e.g., as Duszak [48] writes, coherence (as opposed to cohesion, determined by the structure of the statement, morphology, syntax, and grammar) comes into being on the basis of contextual knowledge, stimulated by the text itself, but embodied in the knowledge of reality situated outside the language. Concomitantly, McAdams [49] posits that coherence is closely linked to the issue of being understood in society and the commitment of the narrator to such storytelling, which brings the audience a feeling of comprehensively understanding the story.

In the study reported on here, every dimension of the coherence was rated by two independent judges who had been previously trained in the coding coherence on different narratives. The inter-rater reliability, established with the use of the intraclass correlation coefficient (ICC, based on the variance distribution between raters for the items assessed) is as high as in the previous studies [50]. The ICC for orientation amounts to 0.74, for structure 0.82, for affect 0.72, and for integration 0.81. The measure of the selected component was calculated as a mean of the two raters' assessments, whereas the generalized coherence index was developed as a sum of four dimensions, and fell in the range 1–16 ($M = 9.13$; $SD = 3.38$).

Results

In order to examine to what extent each narrativity index (when treated individually) can predict personality organization diagnosis, logistic stepwise regression was applied. The reference group was the IPO group and the analyses were conducted separately

for the borderline and neurotic levels of personality organization. The NPO and BPO groups consisted of clinical and non-clinical samples and therefore were tested for the homogeneity. In the majority of narrativity indices no differences among groups were found, so they were treated as homogeneous. However, in several cases where Student's t test showed significant difference ($p < 0,05$) between clinical and non-clinical subsamples in BPO as well as NPO group, logistic regression was proceeded in stages – apparently for the clinical and non-clinical subsamples. The results obtained in the clinical sub-sample of NPO and BPO were presented in the tables with use of the superscripts „a", „b" and „c". On that occasion the clinical versus non-clinical membership was tested as a predictor of the borderline and neurotic level of personality organization and the results showed no such a prediction ($p > 0.99$). The results obtained made it possible to distinguish among the set of lexical indices of these that have a significant probability of determining the level of personality organization as neurotic or borderline.

Table 4. **Odds ratio in logistic regression for the lexical narrativity indices**

	NPO ($chi^2(9)= 15.13$; $p = 0.087$)		BPO ($chi^2(9)= 25.04$; $p = 0.003$)	
	M (SD)	OR (95% CI)	M (SD)	OR (95% CI)
Human factor	0.195 (0.078)	0.531 (0.253-1.116)	0.161 (0.072)	0.371* (0.155-0.889)
Active "I"	0.284 (0.079)	2.197* (1.041-4.636) [a]	0.318 (0.079)	2.243* (1.100-4.571)
Life reflection	0.008 (0.005)	1.140 (0.588-2.211)	0.008 (0.005)	1.091 (0.561-2.122)
Persuasiveness	0.074 (0.023)	0.449 (0.197-1.022) [b]	0.078 (0.022)	1.480 (0.576-3.803)
Specificity	0.121 (0.024)	1.250 (0.632-2.474)	0.104 (0.024)	0.503 (0.220-1.151) [c]
Concreteness	0.005 (0.004)	0.489 (0.233-1.026)	0.008 (0.004)	1.133 (0.561-2.288)
Causality	0.022 (0.011)	1.071 (0.590-1.945)	0.022 (0.009)	0.909 (0.442-1.871)
Intentionality	0.090 (0.026)	1.408 (0.737-2.690)	0.078 (0.025)	0.691 (0.332-1.438)
Temporality	0.013 (0.009)	0.803 (0.416-1.550)	0.017 (0.009)	0.970 (0.490-1.923)
R^2 Nagelkerke	0.297		0.421	

[a] – for clinical sub-sample in NPO group: OR = 3.875 (1.24-12.14)
[b] – for clinical sub-sample in NPO group: OR = 0.271 (0.082-0.893)
[c] – for clinical sub-sample in BPO group: OR = 0.340 (0.121-0.957)

* p-value < 0.05; Percentage of proper classifications for NPO came to 11.6%. and for BPO to 21.2%.

In borderline personality organization prediction, two narrativity indices were worth attention, namely the human factor and the active "I". In neurotic personality prediction, the active "I" is also noticeable. With an increase of the latter (active „I") by one standard deviation, the probability of NPO diagnosis rises by 119.7% (for clinical subsample rises by 287,5%), and of BPO diagnosis by 124.3%. From the above results, it follows that higher accuracy is observed in BPO diagnosis than in NPO, but at the same time it should be observed that the IPO group is character-

ized by a low intensity of active "I". The utterances of the NPO and BPO groups in dealing with the important relationship are therefore marked by a focus on the narrator's activity. When the human factor is considered, it can be seen that an increase by one standard deviation causes the probability of BPO diagnosis to decrease by 63%. The utterances in the BPO group are not focused on other people; more specifically, the narrator in his or her story does not use personal nouns that refer to the other peoples' identity. Metaphorically speaking, such narratives about relations with important others, contrary to the obvious expectations, do not talk about people. In clinical sub-group of NPO there is significantly lower chance to predict NPO group on the basis of the persuasiveness (by 72,9%), and in clinical sub-group of BPO the specificity is such an index – the higher specificity index, the lower the probability of BPO diagnosis by 64%. From the presented data, it can be observed that other particular lexical narrativity indices turn out not to be the predictors of any personality organization.

The next regression analysis was applied with three generalized lexical narrativity indices. The results indicate that narrativity 2 is the best predictor of BPO. With the rise of this index by one standard deviation, the probability of BPO diagnosis increases substantially by 493.5% (and for the clinical sub-group by 614,3%).

Table 5. **Odds ratio in logistic regression for generalized lexical narrativity indices**

	NPO ($chi^2(3)= 1.95$; $p = 0.584$)		BPO ($chi^2(9)= 20.02$; $p < 0.001$)	
	M (SD)	OR (95% CI)	M (SD)	OR (95%CI)
Narrativity 1	0.037 (0.412)	0.724 (0.343-1.527)	-0.163 (0.540)	0.551 (0.245-1.240)
Narrativity 2	-0.165 (0.522)	1.461 (0.618-3.455)	0.359 (0.534)	5.935* (2.094-16.817) [a]
Narrativity 3	-0.051 (1.198)	0.840 (0.513-1.377)	-0.040 (0.944)	0.731 (0.386-1.383)
[a] – for clinical sub-sample in BPO group: OR = 7.143 (2.188-23.317)				
R^2 Nagelkerke	0.043		0.349	

* p-value < 0.05; Percentage of proper classifications for NPO came to 8.3%. and for BPO to 22.8%.

From this data, we conclude that BPO can be recognized by stories which are saturated with the following features: intentionality, concreteness, and the active "I", but which are simultaneously lacking the human factor. That is, the utterances people with BPO contain very few references to other people, are highly focused on the narrator's activities with events' ordered according to human intentions, and show high intensity of sensorial, perceptual, and somatic sensations.

Table 6. **Odds ratio in logistic regression for four coherence dimensions and generalized coherence**

	NPO (chi²(3)= 10.10; p = 0.001)				BPO (chi²(5)= 11.83; p < 0.001)			
	M (SD)		OR (95% CI)		M (SD)		OR (95%CI)	
Coherence	9.707	-2.868	0.223	(0.020-2.521)	7.614	-3.056	0.02*	(0.001-0.754)
Orientation	2.793	-0.773	1.845	(0.579-5.878)	2.229	-0.826	1.779	(0.544-5.816)
Structure	2.500	-1.026	1.946	(0.611-6.199)	1.843	-1.034	3.034	(0.652-14.121)
Affect	2.103	-0.900	1.230	(0.343-4.414)	1.743	-0.869	4.350	(0.686-27.593)
Integration	2.310	-1.081	1		1.800	-0.933	0.43*	(0.247-0.756)
R^2 Nagelkerke	0.142				0.219			

* p-value < 0.05; Percentage of proper classifications for NPO came to 13.5%. and for BPO to 15.2%.

The final regression analysis was applied to the particular dimensions of coherence and to the generalized index of coherence that contributed to the identification of two BPO predictors—that is, the generalized index of coherence and the integration dimension of coherence. The results indicate that if the coherence rises by one standard deviation (3 points), the probability of BPO diagnosis decreases by 97.2%. Moreover, if the integration dimension rises by one standard deviation (0.93 point), the BPO diagnosis is less probable by 57.8%. Low narrative coherence, as detected by the audience (e.g., by the competent judges analysing the speech), may suggest a BPO diagnosis, especially when the deepened reflection on the speaker's own biography is significantly missing from the narrative [9].

Discussion

The sense of the results obtained here should be considered only with regard to the theoretical underpinnings of narrativity indices coming from the links between the indices and psychological processes as well as between indices and self-narratives. These issues are discussed one after the other in this section.

The self-narratives about the important relationship of both NPO and BPO might be recognized in the narrator's focus on his or her own action, rather than on other person's actions. If we observe that the active "I" reflects personal agency, the results presented here are fundamentally counter to expectations, as many studies in clinical and personality psychology report links between personal agency and psychological health [50-52]. Keeping in mind that the topic of the stories is the relationship with a significant other, where it is expected that the narrator will introduce at least two

characters, the "I" and the "other", the index may reflect the unequal attention paid to these two characters. In other words, the narrator will perhaps attribute greater meaning to the actions performed by the "I" than to those undertaken by others, particularly when the interpersonal relationship is evoked. This tendency may be evidence of the overcontrolling of the intimate relationship often present in at least some personality disorders, as empirical studies and clinical observations suggest [53, 54].

It could be reasonably argued that the active "I" index also refers to the general concentration on the self, which is consistent with classical neurotic psychopathology theories (such as egocentrism in neurosis [54] or compulsory self-centred neurotic needs [55]), empirical reports on self-focused attention in many forms of psychopathology [56-58], and the personality pathology noted for relationship disturbances, such as problems with understanding others' mental states (lack of mentalization capacity [57]) or the low quality of relationships [60, 61]. Moreover, a significant body of research using speech content analysis demonstrates that lexically measured concentration on the self is linked to a very broad array of disorders, including depression, suicidal tendencies [62, 63], post-traumatic stress disorder [64], and eating disorders [65]. A high level of focus on the self in speech, considered as a major characteristic of psychopathology, would seem to be nonspecific not only in terms of distinguishing particular forms of disorders but, in the light of present study, even in differentiating levels of personality organization. However, it might be hypothesized that this feature is lower in normal (integrated) personalities, where psychological suffering is slight, transient, or absent, and by contrast, higher where the suffering is experienced intensely (irrespective of whether the suffering is recognized as one's own or externalized), and might be released while storytelling. It may well be that the high intensity of active "I" points to a temporary increase of suffering, activated when talking about a specific emotionally arousing topic.

Furthermore, the results show that high levels of the human factor in self-narratives about important relationship indicate that BPO is a less probable diagnosis. This index may serve as a boundary between both IPO and NPO, in which the focus on other people is higher, and BPO, where it significantly decreases. The utterances in the BPO group contain fewer references to other people. In the face of these results, encompassing the active "I" index and the generalized narrativity index 2, it becomes apparent that BPO prediction is more accurate when a conglomerate of speech features is present: low human factor, high active "I", high concreteness, and high intentionality. From this combination of indices, it transpires that the high intentionality refers rather to the self (to the narrator's vision of self to the self's intentions, motives, and goals, with little involvement in the other character in the story of the relationship (e.g. disturbances in a reflective function [59]).

It is also worth mentioning that while storytelling about a relationship the BPO group tends to focus attention on bodily sensations (somatic, perceptual, and sensorial). This might be explained by theories and interpretations of empirical reports dealing with connections encoding events in forms of images and psychopathological processes [38] and disruptions in the emotional processing of experience in BPO [22]. It emerges that high concreteness indicates that experiences connected with important relationships are insufficiently processed, which results in problems with adequate symbolization of the experience. The concreteness detected in the self-narratives may reflect the poorly differentiated representations of the object relations, with splitting dominating over more mature defences, causing fragmented self-experience and impoverished relationships as consequences [8] or serve as a defensive operation against severely conflicted relational experiences [66].

The results showing that integration and general narrative coherence do not characterize the self-narratives of important relationships in borderline personality organization are complementary to the previous findings reported here. Autobiographical narrative accounts that give the impression of being consistent, complete, and convincing, especially when reflection on the influence of life experiences on the self and the life course is present, may show a healthy ego identity. Coherent and thoughtful self-narratives on the discussed topic may emerge only when the differentiation of the self and the object representations is complete and the process of integration of good and bad object representations has been attained. This is only possible when the ego integrity and the superego consolidation phase of intrapsychic development has been at least reached [8-11]. The results referred to here are consistent with the reports of the positive associations of psychological health and bio-psycho-social wellbeing with narrative coherence [46].

In the literature, we generally find two broad groups of the narrative disruptions in psychopathology – the impoverished narratives (e.g. narratives with affective deficits, problems with psychological description of others in narrative or narrow area of experience which could be encompassed with the story) and deficits in narrative integration ,especially lacks in the connections between bodily feelings and its meaningful articulation [23, 67]. The results obtained here, especially those referred to the importance of high narrativity 2 index and low coherence index in the BPO diagnosis – show both impoverished as well as disintegrated narratives in BPO group. Precisely, the NPO group was not so clearly depicted in this results, so we consider mostly the BPO group here. The impoverishment of the self-narratives about important relationships in BPO group deals with the inability to tell a story focused on the other person, but at the same time there is an overproduction of narrative about own actions and bodily feelings. We observe also deficits in integration – the stories are low in coherence and integration, implying the existence of the connections among personal experiences and the reflection upon own life. The narrative disruptions may

come from the structural inability (splitted object relations representations) of people with BPO to process the important interpersonal experience in a way which would allow them to fully comprehend this experience and form the coherent story. Besides that problem of impoverishment, there appears also a phenomenon of the overdose of some narrativity indices in psychopathology, what is not a common issue in the literature, particularly in the area of personality disorders [68]. A demanding problem remains the meaning of the narrative elaboration and narrative processing of the experience and its implications in psychopathology and the research as well as theoretical consideration is still needed.

Conclusion

In summary, the content analysis of surface speech characteristics-specifically, the identification of chosen narrativity indices in autobiographical accounts of an important relationship delivers some information about the probable level of personality organization. Speech analysis may indicate deep personality structures. On the basis of the selected narrativity indices, BPO cab be predicted with better accuracy than can NPO. However, the prediction should not be used automatically or mechanically on account of at least the following reasons. First, storytelling is probably an image or an expression of a relatively stable intrapsychic personality structure, but which at the same time serves many temporary psychological functions connected with creating or maintaining psychological reality, emerging in the process of narrative construction (see the narrative approach to psychopathology [69]). Second, the characteristics of the utterances should be referred to the processes which determine or outline the development of a narrative with specific qualities. The results obtained here contribute to the knowledge about the disturbances in the narrative processing of the experience in psychopathology, highlighting impoverishments (in other peoples' portraying), overdoses (in own bodily sensations and actions) and integration deficits (mainly connecting experiences with the sense of identity and possible reflection upon own life). Third, it should be expected that the psychological functions are activated temporarily and restricted to selected areas of experience, and so speech characteristics may indicate a specific stage of the process of experiential processing [22]. Fourth, indices of narrativity, even when very good predictors of level of personality organization, should be treated as supplementary, additional, hypothetical sources of information, and never as unambiguous or unquestionable. This is because speech indices are valid in the reasonably recognized context of both broad biographical information and psychological theory.

It should also be noticed that the usability of narrativity indices may become more legitimate and helpful in specific conditions in the clinical setting, especially when the most common ways of diagnosing or understanding the patient are hindered, such as when the diagnostic or psychotherapeutic contact is disturbed, e.g. in difficult transfer-

ence or countertransference conditions, or when there is resistance to certain areas of experience. In such circumstances, the clinician may have a temporary, transitory need to draw on indices unrelated to his or her personal involvement (provided that his or her perception is not seriously disturbed), such as the narrativity indices mentioned here. The narrativity indices, though in some ways superficial, may direct attention to the more precise analysis of narrative experiential processing.

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