

Alexithymia and schizophrenic psychopathology

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Abstract. This research is an attempt to gain a comprehensive insight into alexithymia in schizophrenia. Previous studies offered clinically-descriptive and phenomenologically oriented suggestions regarding alexithymia putative contribution in shaping schizophrenic psychopathology. However, the factorial structure of the scales used to assess alexithymia had never been applied to a schizophrenic sample as a preliminary step to interpret results, thus assuming the purported dimensions of the alexithymia construct (i.e. difficulties identifying feelings, difficulties describing feelings, and externally oriented thinking) to be transnosographically stable. In order to explore the psychopathologic meaning and interrelations with other schizophrenic symptoms, we evaluated 76 chronic schizophrenic outpatients using the 20-item Toronto Alexithymia Scale, standardized measures of positive, negative, disorganized and depressive symptoms, social and physical anhedonia scales, and the Bonn Scale for the Assessment of Basic Symptoms. The principal component analysis of TAS-20 items revealed a 4-factor structure with multiple correlations with psychotic, disorganized, depressive, anhedonic dimensions and basic symptoms. The data suggest that alexithymia in schizophrenia is more heterogeneous than was previously recognized, and has several components, some of which are more state-related, and others of which are more like trait features. Those components are specifically correlated with both overt and subjective dimensions of schizophrenic psychopathology.

Key words: Alexithymia, schizophrenia, basic symptoms, subjective experience, morbid objectivization, hyperreflexivity

Introduction

Alexithymia, a “cognitive-affective disturbance characterized by difficulties in differentiating one’s feelings and expressing them in words”, has been considered a putative risk factor for a variety of medical and psychiatric disorders (1).

In spite of the large amount of studies (2) performed in many psychiatric populations, there is a relative lack of empirical data on alexithymia in schizophrenia. To our knowledge, alexithymia in schizophrenia has been explored from both a clinically-descriptive (3, 4) and a phenomenologically oriented perspective (5).

However, those studies suffer from an undue transposition of alexithymia construct in schizophre-

nic psychopathology. Haviland (6) suggested, in fact, that the factorial structure of the alexithymia scales is different in the various psychiatric populations.

Nkam et al (3) observed that negative schizophrenics had significantly higher total scores in alexithymia, and suggested that alexithymia is a trait characteristic in deficit patients, and a state related to many symptoms (flattening of affect, poverty of speech, depression and anxiety) in nondeficit ones (4).

Stanghellini and Ricca (5) assumed alexithymia to be a trait, and on the basis of its positive correlation with the self-experienced language impairments (i.e. a set of basic symptoms coded in the Frankfurter Complaint Questionnaire [FCQ]) suggested that alexithymia and the impairment of the language capacity we-

re “among those personological factors...characterizing the tendency towards the nonparanoid prototype of schizophrenia” (5). Thus, alexithymia and language capacity impairment (5, 7) were both conceived as cognitive traits of the anthropological matrix (i.e. personologic functioning styles). Stanghellini (7), indeed, suggested that “patients who are high in alexithymia do not feel pressed to make sense through language of their basic disorders of experience”.

Such interpretative attempt is inspired to a refined approach to the schizophrenic psychopathology focusing on those anomalous subjective experiences termed basic symptom (BS).

Basic symptoms (BS) are considered the primary phenomenological aspects (i.e. the subjective side) of the schizophrenic disturbances of information processing, related to the neurobiological substrate of the disease (8-12). Several phenomenological *continua* between the subjective experiences and psychotic symptoms have been detailed in the transitional sequences, leading to the emergence of schneiderian first rank symptoms (13, 14)¹.

The transitional phases (i.e. basal irritation, depersonalization, psychotic externalization, content concretization), have been related to process activity and emotional distress that are beyond the tolerance threshold of the information processing capacity of the patient (14). According to the Basic Symptoms Model the “typical schizophrenic end- and superstructure-phenomena [i.e. positive symptoms] ... result from the amalgamation of basic symptoms with the “anthropological matrix” [i.e. the individual, personality-related psychological mechanisms and coping] (10)”.

¹ These phenomenological units (13, 14) are represented by:

- 1) *Basic irritation phase and depersonalization*: cognitive disturbances of perception, thinking, speech, memory, actions and body sensations (cenesthesias) lead to allo-, auto- and somatopsychic depersonalization, paralleled by the increasing cognitive complexity and affective tension of the experiential field;
- 2) *Psychotic externalization phase*: not yet completely concretized delusional perceptions and experiences, associated to the reactualization of a phylo- and ontogenetical older pattern of attributions (i.e. «incongruence attribution»);
- 3) *Psychotic concretization phase*: completely concretized delusional perceptions and experiences of being influenced, corresponding subjectively to the reduction of complexity and affective tension of basal irritation, by explanation.

The hypothesis of the pathoplastic role of alexithymia (as well as of impaired language capacity) in shaping either paranoid or nonparanoid pictures of schizophrenia (5, 7) is suggestive from a speculative viewpoint. However, besides the need for empirical checking, it relies on some conceptual and pragmatic shortcomings.

1. Alexithymia in schizophrenics is axiomatically assumed to be a trait-characteristic;
2. the positive correlation of alexithymia with the Basic Symptoms detailing “impairments of receptive and expressive language” is used to justify the removal of the latter from the subjective schizophrenic psychopathology (i.e. basic symptoms) and its inclusion among the personality functioning styles;
3. the diagnostic Paranoid/Non Paranoid schizophrenic subtypes are conceptually equated to the clinical dichotomy positive/negative schizophrenia, disregarding the coexistence of positive and negative symptoms in each single patient.

The aim of our study is to:

- 1) recontextualize alexithymia in a detailed mapping of schizophrenic subjective psychopathology on the epistemological basis of the jaspersian and schneiderian descriptive phenomenological method (which is the theoretical frame of reference of the Basic Symptoms Model [BSM]);
2. check previous findings regarding the correlation of alexithymia with the “impairment in receptive and expressive language”, as proposed by Stanghellini and Ricca (5), and look for alexithymia possible relation to schizophrenic overt and subjective symptoms.

We studied alexithymia in a sample of 76 patients with chronic schizophrenia, following Haviland's (6) suggestions with regard to the methodological cautions to be considered when dealing with the Toronto Alexithymia Scale.

Thus, in order to attempt an interpretation of the psychopathological meanings of alexithymia components, we performed a principal component analysis to define alexithymia factorial structure in our sample and then looked for the factors correlational profiles with:

- diagnostic symptoms (psychotic, disorganized and negative dimensions),
- eventually co-occurring depressive symptoms,
- basic symptoms,
- physical and social anhedonia.

Materials and methods

Sample

A group of consecutive outpatients with schizophrenia, attending the Psychiatry Section of the Parma University Neuroscience Department (PSPUND) for maintenance treatment, was assessed. Exclusion criteria included substance abuse, marked cognitive deterioration, gross noncompliance and organic mental disorders.

According to DSM-IV criteria (15), forty (52.6%) subjects were diagnosed as Paranoid, eight (10.5%) as Disorganized, three (3.9%) as Catatonic, five (6.6%) as Undifferentiated and twenty (26.3%) as Residual schizophrenia subtype.

Socio-demographic and global psychopathometric data are shown in table 1 (no quantitative differences were found between males and females by means of T-test). Forty-seven (61.8%) of the analyzed patients were men and twenty-nine women (38.2%); only eleven (14.5%) were married and thirty (39.5%) were working during the evaluation time.

All the participants gave their written informed consent to the psychopathologic assessment.

Table 1. Socio-demographic and psychopathological characteristics of the schizophrenic sample (n=76)

	Min	Max	Mean	SD
Age (years)	21	57	36.30	9.39
Length of illness (years)	2	24	11.89	9.06
Education (years)	5	18	10.63	3.44
Psychotic symptoms	0	65	12.22	11.76
Negative symptoms	11	56	31.86	10.38
Disorganized symptoms	0	53	13.94	10.10
Depressive symptoms	0	15	4.40	3.93
Basic symptoms	6	67	36.42	15.20
Physical anhedonia	4	38	19.64	7.98
Social anhedonia	1	31	15.34	6.39
Alexithymia	20	90	55.28	17.42

Symptom Assessment

General psychopathology was assessed with the Scales for the Assessment of Positive and Negative Symptoms (SAPS and SANS) (16, 17) and the Calgary Depression Scale for Schizophrenics (CDSS) (18), in order to obtain a global picture of positive, disorganized and negative dimensions (according to Andreasen factorial tripartition (19)) and depressive symptoms.

Subjective experiences were assessed by means of the Bonn Scale for the Assessment of Basic Symptoms (BSABS) (20). The BSABS is a 98 items semi-structured interview measuring subjective uncharacteristic experiences with disturbing quality, covering five main phenomenological areas:

- A) *Dynamic Deficits with Direct Minus Symptoms*: include complaints about increased physical and mental exhaustion and decreased energy, resilience and perseverance. Patients complain of physical or mental strain they could cope with quite easily before the onset of the illness; disorders take the form of general weakness, weariness and decreased efficiency.
- B) *Dynamic Deficits with Indirect Minus Symptoms*: inner disquiet or tension, obsessional thought patterns, lack of concentration provoked by physical or mental strain. Patients try to avoid situations such as conversations and activities requiring close attention/additional workload. Other items of this category include increased impressionability: everyday events are experienced more frequently and intrusively as exhausting, disparaging or offending than before the onset of the illness.
- C) *Cognitive Thought, Perception and Movement Disturbances*: encompass several disturbances involving thought management and control, qualitative and quantitative changes in perceptual experience, altered motor and automatic skills.
- D) *Cenesthesias*: bodily malsensations, often with a paroxysmic and fluctuating intensity, which are idiosyncratically experienced as new and unusual (such as "Unusual bodily sensations of numbness and stiffness", "Migrating bodily

sensations wandering through the body”, “Kinesthetic sensations, pseudomovements of the body”)

E) *Central Vegetative Disturbances*. include several vague and widespread disturbances connected with neurovegetative parasympathetic and orthosympathetic activation as perceived by the patient in terms of disturbed vasomotory, thermoregulatory and hypnic function .

Two psychopathological indexes derived from BSABS were scored: Basic Depersonalization Score (BDS) and Basic Language Capacity Index (BLCI).

Basic Depersonalization Score (BDS) was obtained adding the 3 BSABS items B3.4, C2.11 and D1.1, explicitly identifying the allo-/auto-/somatopsychic domains of depersonalization, according to Wernicke 's (21) notion of *estrangement from oneself, from the external world and from one's own body*. BDS (elsewhere termed Wernickian Nomothetic Depersonalizing Descriptor (22)), details an important – predelusional – qualitative change of self-experience occurring on the background of the basal irritation.

Basic Language Capacity Index (BLCI) (23) was calculated combining the BSABS items homologous to the FCQ category of 'receptive and expressive speech' (24) in order to compare our data with previous studies based on basic symptom assessment (5, 7, 24).

Anhedonia, was assessed with Chapman & Chapman's Scales (Scales for Physical and Social Anhedonia (PAS and SAS)) (25), which are two true-false self-report instruments measuring the diminished ability to experience physical and sensory pleasures, such as eating, touching, sex, temperature, movement, smell and sound.

Alexithymia was evaluated by means of the Toronto Alexithymia Scale in the 20-item version (TAS-20) (26, 27). Since TAS-20 measured alexithymia appears to be multidimensional and not well-represented by a global severity score (6) we checked the factor structure of the TAS-20 in our sample performing a principal component analysis (factor scores were calculated by the regression method).

All patients were interviewed by clinicians of the PSPUND. Calibration meetings to ensure that ratings remained stable over time and the rater drift did not occur were performed throughout the data collection

phase for each of the interview-based scales (i.e. SA-PS, SANS, CDSS, BSABS).

Data analysis

An initial exploratory factor analysis (EFA) of the 20 items of the scale was performed (principal component method with Varimax rotation), to provide an overview of the item distribution. The Kolmogorov-Smirnov statistic was used to test the normality of distributions of the total symptom scores and of the scores on each factor.

Then, factor scores were calculated by the regression method and Pearson correlations were calculated between TAS factor scores, age, duration of the illness, years of instruction and psychopathologic scores.

Results

A **principal component analysis** (PCA) of the TAS-20 items with Varimax rotation and factor selection based on Eigenvalue over 1.0 resulted in a 6 factor solution that explained the 68.4% of the variance. However, visual inspection of the scree plot (28, 29) revealed that a maximum of 4 factors should be rotated, thus the PCA was repeated specifying four factors.

The 4-factor TAS-20 solution accounted for about 57.5 % of the variance. Item loadings with the greatest absolute values were used to describe the factors (Table 2).

The **first factor** [F1] - *Deficit in the identification of cenesthetic sensations [DICS]* - accounted for most variance (33.1%) and consisted of items referring to difficulties in the identification of cenesthetic information (e.g. TAS3 “I have physical sensations that even doctors don't understand” and TAS7 “I am often puzzled by sensations in my body”).

The **second factor** [F2] - *Communicative-Expressive Impairment [CEI]* - accounted for 10.8% of the variance and was formed by items concerning difficulties in “finding the right words” for one's own feelings (TAS2) and sharing them with others.

The **third factor** [F3] - *Interpersonal distance modulation [IDM]* - accounted for 7.1% of the variance and

Table 2. Factor loadings, percentage of variance and eigenvalues of TAS-20 components

		1	2	3	4
TAS3	I have physical sensations that even doctors don't understand	0.785			
TAS7	I am often puzzled by sensations in my body	0.741			
TAS13	I don't know what's going on inside me	0.644			
TAS14	I often don't know why I am angry	0.632			
TAS9	I have feelings that I can't quite identify	0.622			
TAS1	I am often confused about what emotion I am feeling	0.563			
TAS2	It is difficult for me to find the right words for my feelings		0.736		
TAS11	I find it hard to describe how I feel about people		0.644		
TAS17	It is difficult for me to reveal my innermost feelings. even to close friends		0.636		
TAS4	I am not able to describe my feelings easily (*)		0.623		
TAS12	People tell me to describe my feelings more		0.488		
TAS18	I can't feel close to someone, even in moments of silence (*)			0.768	
TAS16	I prefer to watch 'light' entertainment shows rather than psychological dramas			0.760	
TAS15	I prefer talking to people about their daily activities rather than their feelings			0.705	
TAS5	I prefer to just describe problems rather than analyse them (*)			0.496	
TAS19	I find examination of my feelings useless in solving personal problems (*)			0.475	
TAS10	Being in touch with emotions is not essential (*)			0.468	
TAS20	Looking for hidden meanings in movies or plays distracts from their enjoyment			0.385	
TAS6	When I am upset, I don't know if I am sad, frightened or angry				0.660
TAS8	I prefer to just let things happen rather to understand why they turned out this way				0.633
Variance accounted for (%)		33.1	10.8	7.1	6.5
Eigenvalues		6.6	2.2	1.4	1.3

Factor loadings are indicated only when >0.3; Factors greater than 0.6 are in bold.

(*) those items have been turned into negative form in order to avoid the reverse scoring and simplify the factor interpretation.

TAS-20 items with higher loadings for every factor are in *italics*.

mainly included items focusing on interpersonal distance and emotional sharing (as exemplified by the difficulty to "feel close to someone" (TAS18) and the preference for light entertainment rather than psychological dramas (TAS16) or for "talking to people about their daily activities rather than their feelings" (TAS15)).

Finally, the fourth factor [F4] - *Adaptive Acceptance [AA]*- accounted for 6.5% of the variance and was largely made up of items referring to mood turmoil on the one hand (TAS6 "When I am upset, I don't know if I am sad, frightened or angry") and to a disengaged attitude (TAS8 "I prefer to just let things happen rather to understand why they turned out this way") on the other. The unifying psychological ground of this factor could be recognized in a sort of adaptive and passively accepted, "taking note of" one's own inability to define and comprehend the emotional arousal in acute states (i.e. when one is "upset").

Only one item (TAS 20) had a factor loading lower than 0.4, while the other 4 items with a factor loading lower than 0.5 were TAS 5, 10, 12, 19.

TAS factors correlational profiles. Pearson correlations were calculated between TAS factor scores, age, duration of the illness, years of instruction and psychopathologic scores (Table 3.a, 3.b).

The first factor [F1=DICS] positively correlated with psychotic (specifically delusions score) and disorganization dimension (selectively thought formal disturbances); no correlations were found with the negative and depressive symptoms.

Referring to the delusional and hallucinatory domains, DICS was positively associated to SAPS "Somatic delusions" ($r=0.323$, $P<0.01$ [not shown in Table 2]) and SAPS "Tactile hallucinations" ($r=0.246$, $P<0.05$ [not shown in Table 3a]) subscores.

The relationship with the formal thought disorder component of the disorganized dimension, was specifically with "Circumstantiality" ($r=0.486$; $P<0.001$), "Tangentiality" ($r=0.400$; $P<0.001$), "Illogicality" ($r=0.370$; $P<0.001$), "Derailment" ($r=0.336$; $P<0.01$), "Pressure of speech" ($r=0.264$; $P<0.05$), "Incoherence" ($r=0.251$; $P<0.05$) and "Clanging" sub-

Table 3a. Pearson's correlations of TAS-20 factors with sociodemographic variables and global psychopathology

	F1	F2	F3	F4
<i>Sociodemographic variables</i>				
Age (years)	-0.061	0.041	0.212	0.034
Duration of illness (years)	0.051	0.053	0.260*	-0.009
Education (years)	-0.200	0.025	-0.200	-0.172
<i>Psychopathological variables</i>				
Psychotic dimension	0.242*	0.001	0.117	0.034
1. Hallucinations	0.179	0.017	0.153	0.070
2. Delusions	0.232*	-0.012	0.057	-0.005
Negative dimension	0.077	0.055	0.187	0.071
1. Affective flattening	0.063	0.066	0.016	0.095
2. Avolition-apathy	0.211	0.042	0.258*	0.050
3. Anhedonia-asociality	-0.067	0.006	0.282**	-0.006
4. Attention impairment	0.076	0.101	-0.175	0.081
Disorganised dimension	0.359**	0.053	0.065	0.084
1. Formal Positive Thought Disorder	0.416***	0.031	0.170	-0.077
2. Bizarre behaviour	0.156	0.064	0.134	0.086
3. Alogia	0.038	0.023	-0.075	0.258*
Depressive Dimension (CDSS total score)	0.087	0.359***	-0.031	-0.097

*P (two-tailed) <0.05; **p (two-tailed) <0.01; ***p (two-tailed) <0.001

Table 3b. Pearson's correlations of TAS-20 factors and subjective experience domains

	F1	F2	F3	F4
<i>Subjective experiences</i>				
Basal Irritation (BSABS total score)	0.426***	0.294**	0.157	0.203
A. Dynamic Deficit with Direct Minus Symptoms	0.117	0.395***	0.179	0.201
B. Dynamic Deficit with Indirect Minus Symptoms	0.321**	0.244*	0.069	0.190
C. Cognitive disturbances	0.433***	0.358***	0.146	0.192
D. Cenesthesias	0.475***	0.059	0.102	0.219
E. Central Vegetative Disorders	0.294**	0.007	0.133	0.020
Language Capacity (BLCI)	0.095	0.395***	0.120	-0.080
Depersonalization (BDS)	0.377***	0.151	0.245*	0.136
1. Somatopsychic	0.363***	0.068	0.089	0.110
2. Autopsychic	0.321**	0.174	0.224*	0.502
3. Allopsychic	0.176	0.096	0.239*	0.122
Anhedonia				
1. Physical Anhedonia (PAS total score)	-0.156	-0.016	0.323**	0.088
2. Social Anhedonia (SAS total score)	-0.239*	0.104	0.329**	0.012

*P (two-tailed) <0.05; **p (two-tailed) <0.01; ***p (two-tailed) <0.001

scores ($r=0.241$; $P<0.05$) [data not shown in Table 3a].

As far as subjective experiences were concerned, correlations were obtained with BSABS total and subscores, particularly (in order of Pearson's r values) with "Cenesthesias" (BSABS D category), "Cognitive Thought, Perception and Movement Disturbances" (BSABS C category), "Dynamic Deficits with Indirect Minus Symptoms" (BSABS B category), and

"Central Vegetative Disturbances" (BSABS E category). A strong positive correlation was also found with Depersonalization (BDS).

The second factor [F2=CEI] correlated with depressive symptoms, the whole BSABS score and some categorial subscores, namely (in order of Pearson's r values) "Dynamic deficiencies with Direct Minus Symptoms" (BSABS A category), "Cognitive thought, perception and action disorders" (BSABS C cate-

gory), “Dynamic deficiencies with Indirect Minus Symptoms” (BSABS B category). Finally CEI was strongly associated with BLCI.

Regarding the **third factor** [F3=IDM], Pearson’s correlations reached statistical significance with avolition-apathy and anhedonia-asociality SANS subscores and Chapman’s Physical and Social anhedonia scores. A positive correlation was also found with BDS and the duration of the illness. No significant relationship was obtained with BSABS total or partial scores.

The **fourth factor** [F4=AA] revealed only a positive correlation with SANS alogia score (mainly due to “poverty of speech” item; $r=0.225$, $P<0.05$ [not reported in table 3a]).

No significant relationship was found between TAS factors and either sociodemographic variables (apart from F3 which was associated to the duration of the illness) or negative dimension (except F3 correlation with avolition-apathy and anhedonia-asociality).

Discussion

Alexithymia factors

The present factorial solution implies that four factors are to be considered, taking care to include major psychopathology (i.e. positive, negative, disorganized and depressive symptoms) as well as the subjective experiences (i.e. Basic symptoms scores, Basic Language Capacity Index [BLCI], Basic Depersonalization Score [BDS], and hedonic capacity) in order to allow for clinical and heuristic interpretations.

First factor [F1]: Deficit in the identification of cenesthetic sensations [DICS]

This first factor pertains to two qualitatively different domains of major schizophrenic psychopathology (i.e. psychotic and disorganization components) and is associated with multifold components of basic irritation. Among the latter, the prominent (and F1-specific) correlation regarded Impaired bodily sensations (BSABS-D), whereas Cognitive disturbances (BSABS-C) and increased emotional reactivity (BSABS-B), were shared with CEI (i.e. F2) and thus,

are more likely to be a common subjective experiential platform for both F1 and F2.

Moreover, DICS resulted associated to somato- and autopsychic depersonalization without being affected by communicative abilities either in receptive or in expressive speech (absence of correlation with language capacity (BLCI)).

DICS pivotal association with basic somatoesthetic and vegetative discomfort, tactile hallucinations and somatic delusions, acquires a heuristic-psychopathologic value since its grounding phenomenological axis relies on an increasing vector of perturbed bodily awareness.

This data indeed easily fits the transitional sequence paradigm of the basic symptoms model (14), detailing an experiential continuum between the aural uncharacteristic cenesthetic self-discomfort and the intermediate (infrastructural) conditions of depersonalisation and psychotic superstructures.

Second factor [F2]: Communicative-Expressive Impairment [CEI]

CEI is correlated with a clinically relevant affective change, without being influenced by the other major psychopathologic dimensions. With regard to the subjective experiences, CEI shares with DICS the positive correlation with cognitive and emotional excitability basic symptoms (BSABS C and B category) and is selectively correlated to BS characterized by the lowering of drive and stress tolerance (BSABS A category). Moreover, CEI was the only factor correlated with language capacity, and seems to reflect difficulties in interpersonal communication. The positive association with typical state-like symptoms such as depressive ones, suggest that CEI reflects a state-dependent deficit in which expressive and receptive communication. That is, CEI reflects a *phasic* disconnectedness from the *ability* of sharing emotional experience with others, by means of *verbal language*.

Third factor [F3]: Interpersonal distance modulation [IDM]

This factor (which mainly regards difficulties in “feeling close” to others or in sharing emotional con-

tents) seems to pertain to personological anhedonic traits, and is phenomenologically homologous to social-interpersonal impairment (i.e. Meehl's "interpersonal aversiveness" (30)) as a part of negative schizotypy (31).

From this perspective, negative symptoms subsets like avolition-apathy and anhedonia-asociality (as measured by SANS subscores) in correlation with the IDM alexithymic factor, may reflect the clinical-behavioral expression of schizotypal deficits in interpersonal functioning. IDM positive correlation with the duration of the illness, indicates that the social interactional impairment and the inability to actively manage intersubjective distance grows during the course of the disease, as a feature which is constantly becoming more structured.

In phenomenological terms, such a *tonic* disconnectedness from the *possibility* to share emotional experience by means of empathic and holistic understanding, reflects an impairment in the interpersonal awareness field, and an unstable foundation of intersubjective closeness.

The positive correlation of IDM with depersonalization may be indicative of a possible fluent transition from a situative constraint in the interpersonal field (lack of sharing capacity as a pathology of "interpersonal closeness"), which reflects an impaired empathetic resonance with others, to "micro-productive symptoms', [i.e.] positive symptoms in statu nascendi" (10) as depersonalization is in the context of the transitional sequences. Alternatively, it is possible that a latent allo- and autopsychic lability, acting as a permanent, longitudinally stable irritative core, undermines the foundation of a stable interpersonal anchoring. This depersonalizing vulnerability would be a constantly present constitutive threat, qualitatively different from the emergent estrangement experience which was associated to DICS [F1].

Fourth factor [F4]: Adaptive Acceptance [AA]

AA, pertains to a kind of passive acceptance of contingent internal and external events. Notably, the only correlation with other symptoms is limited to SANS alogia score, and is mainly due to the "poverty of speech" item, describing patients giving short an-

swers in a concrete, unelaborated way. Thus, AA may represent an adaptive protective device against affective-cognitive arousal, where the subject does not feel the need to convey his/her own emotional states, but just tolerates them from a distance.

Conclusive issues and limitations

The present research indicates that alexithymia has a specific structure in schizophrenic samples which is not consistent with its reduction to a unitary pathoplastic personological dimension (5); indeed, alexithymia components may be interpreted as signs of intra- and inter-subjective disturbances of both state and trait quality.

Psychopathologic salience of alexithymia in schizophrenia

Our data indicate that *F1 [DICS]* reflects the feeling of the growing "opacity" of the lived-body, as it becomes the source of disturbing, incomprehensible and worrying signals.

Thus, self-perceived bodily psychopathology, rather than language capacity impairment is the structural core of DICS. This notion is all the more psychopathologically sound if Cutting's (32) concept of "morbid objectivization" is evoked as organizing paradigm. If morbid objectivization intervenes, the increased prominence of the thing-like body overwhelms the lived-body and a prominent body-centered self-auscultation (i.e. hyperreflexive bodily awareness) takes place.

Moreover these data substantiate previous findings (22) regarding possible experiential similarities between alexithymia and depersonalization.

F2 [CEI] reflects a state-like relational deficit which includes expressive and receptive communication skills, describing the *phasic* disconnectedness from the *ability* of sharing emotional experience with others, by means of *verbal language*.

On the contrary *F3 [IDM]*, seems to express a *tonic* disconnectedness from the *possibility* to share emotional experience by means of empathic understanding, and may be considered close to some schizotypal deficits in interpersonal functioning.

Finally, *F4 [AA]* can be regarded as a deliberate attitudinal diaphragm buffering potential stressors:

the subject does not feel urged to convey his/her own emotional states, and is not concerned with actively seeking reactive strategies to deal with experiential derangements.

According to these results, a critical reappraisal of the Stanghellini model (5, 7) regarding alexithymia in schizophrenia should be considered; this model conceives alexithymia as a personological matrix-related impairment in receptive and expressive language (pathoplastically mitigating basic irritation development into full-blown psychotic symptomatology).

Indeed, at least the two greater alexithymic factors (DICS and CEI) correlate with the level of basic irritation and may be a non-psychotic by-product of the growing complexity of the experiential field.

"Alexithymia" notion and current conceptualizations of schizophrenic psychopathology

According to our data, at least the correlation of F1 [DICS] with psychotic and disorganized symptoms suggests that a holistic reframing of alexithymic factors in schizophrenic psychopathological models could be heuristically fertile.

Moreover, the cenesthetic hyperawareness - which seems to be the underlying phenomenologic axis of DICS, cenesthetic and vegetative basic symptoms, somatopsychic depersonalisation, tactile hallucinations and delusions - evokes both Cutting's (32) notion of "Morbid Objectivization" (i.e. a disturbed process of objectivization leading to an increased degree of - self-perceived - 'thingness' of the body) and Sass's (33) concept of "Hyperreflexivity" (i.e. an exaggerated and hyperalerted self-consciousness). Morbid Objectivization as well as Hyperreflexivity substantiate Meehl's (30) seminal conceptualization of the "proprioceptive diathesis" as resulting in an aberrant awareness of the body giving rise to body-image distortions.

Alexithymia F2 [CEI] and F3 [IDM] seem to bridge some aspects of the subjective experience of schizophrenic body psychopathology, encompassed by [F1] DICS, with the interpersonal world psychopathology. Indeed they both involve relational deficit (of pragmatic or empathic kind).

With regard to the Basic Symptoms conceptual framework, the transitional sequences model suggests

a possible integration of at least two of the four TAS-20 factors in the basic symptom paradigm. In fact, both DICS and CEI were related to basal irritation, depersonalisation and basic language impairment, and can be conceived as emergent phenomena, deriving from the growing complexity of the cognitive - affective field (14).

Limit

Even if the present study is cross-sectional in nature, and consequently the stability of the factorial structure must be confirmed using a longitudinal design, it allows some preliminary speculations on alexithymia, which is worthy of further psychopathologic exploration in schizophrenia.

In spite of some methodological limitations, including the fact that the study of psychopathological phenomena in untreated patients is certainly more suitable, the study proposes some schematic suggestions for a tentative reconceptualization of the alexithymic components in the context of schizophrenic psychopathology.

References

1. Taylor GJ, Bagby RM, Parker JDA. Disorders of Affect Regulation: Alexithymia in Medical and Psychiatric Illness. Cambridge (UK): Cambridge University Press; 1997.
2. Bankier B, Aigner M, Bach M. Alexithymia in DSM-IV disorder: comparative evaluation of somatoform disorder, panic disorder, obsessive-compulsive disorder, and depression. *Psychosomatics* 2001; 42: 235-40.
3. Nkam I, Langlois-Thery S, Dollfus S, Petit M. Negative symptoms, depression, anxiety and alexithymia in DSM III-R schizophrenic patients. *Encephale* 1997; 23: 267-72.
4. Nkam I, Langlois-Thery S, Dollfus S, Petit M. Alexithymia in negative symptom and non-negative symptom schizophrenia. *Encephale* 1997; 23: 358-63.
5. Stanghellini G, Ricca V. Alexithymia and schizoprenias. *Psychopathology* 1995; 28: 263-72.
6. Haviland MG, Reise SP. Structure of the twenty-item Toronto Alexithymia Scale. *Journal of Personality Assessment* 1996; 66: 116-25.
7. Stanghellini G. Language capacity in paranoid and non-paranoid schizophrenics: a revision of previous findings through the analysis of a larger sample. *Neurology, Psychiatry and Brain Research* 1995; 3: 229-36.
8. Huber G. Reine Defektsyndrome und Basisstadien endogener Psychosen. *Fortschritte der Neurologie-Psychiatrie* 1966; 34: 409-26.

9. Huber G. Das Konzept substratnaher Basissymptome und seine Bedeutung für Theorie und Therapie schizophrener Erkrankungen. *Nervenarzt* 1983; 54: 23-32.
10. Huber G, Gross G. The concept of basic symptoms and basic stages and its meaning for schizophrenia and schizoaffective psychoses. In: Maggini C, editor. *Psicopatologia e Clinica della Schizofrenia*. Pisa (Italy): ETS; 1995: 41-58.
11. Klosterkoetter J, Gross G, Huber G. The concept of process activity in idiopathic psychoses. *Nervenarzt* 1989; 60: 740-4.
12. Klosterkoetter J, Gross G, Huber G, Gnad M. Basissymptomorientierte Diagnostik schizophrener Vulnerabilität. In: Huber G, editor. *Idiopathische Psychosen: Psychopathologie Neurobiologie-Therapie*. Stuttgart (Germany): Schattauer; 1990.
13. Klosterkoetter J. The meaning of basic symptoms for the development of schizophrenic psychoses. *Neurology, Psychiatry and Brain Research* 1992; 1: 30-41.
14. Klosterkoetter J. The development of Schneiderian first rank symptoms. In: Maggini C, editor. *Psicopatologia e Clinica della Schizofrenia*. Pisa (Italy): ETS; 1995: 75-116.
15. American Psychiatric Association. *DSM IV: Diagnostic and Statistical Manual of Mental Disorders*. Ed. 4. Washington (DC): American Psychiatric Press; 1994.
16. Andreasen NC. *The Scale for the assessment of positive symptoms (SAPS)*. Iowa City (IA): The University of Iowa; 1984.
17. Andreasen NC. *The Scale for the assessment of negative symptoms (SANS)*. Iowa City (IA): The University of Iowa; 1983.
18. Addington D, Addington J, Schissel B. A depression rating scale for schizophrenics. *Schizophrenia Research* 1990; 3: 247-51.
19. Andreasen NC, Arndt S. Symptoms of schizophrenia. Methods, meanings and Mechanisms. *Archives of General Psychiatry* 1995; 52: 341-51
20. Gross G, Huber G, Klosterkoetter J, Linz M. BSABS: Bonner Skala für die Beurteilung von Basissymptomen (Bonn Scale for the Assessment of Basic Symptoms). Berlin (Germany): Springer; 1987. Italian translation: Maggini C, Dalle Luche R, editors. *Scala di Bonn per la valutazione dei sintomi di base*. Pisa (Italy): ETS; 1992.
21. Wernicke C. *Grundriss der Psychiatrie*. Stuttgart (Germany): Thieme; 1900.
22. Maggini C, Raballo A, Salvatore P. Depersonalization and basic symptoms in schizophrenia. *Psychopathology* 2002; 35: 17-24.
23. Maggini C, Raballo A, Pelizza L, Paini M, Croci R, Salvatore P. Subjective experience of language impairment and psychopathology in schizophrenia. *Psychopathology* 2003; 36: 17-22.
24. Stanghellini G, Quercioli L, Ricca V, Strik WK, Cabras P. Basic symptoms and negative symptoms in the light of language impairment. *Comprehensive Psychiatry* 1991; 32: 141-6.
25. Chapman LJ, Chapman JP, Raulin ML. Scales for physical and social anhedonia. *Journal of Abnormal Psychology* 1976; 85: 374-82.
26. Bagby RM, Parker JDA, Taylor GJ. The Twenty-Item Toronto Alexithymia Scale - I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research* 1994; 38: 23-32.
27. Bagby RM, Taylor GJ, Parker JDA. The Twenty-Item Toronto Alexithymia Scale - II. Convergent, discriminant and concurrent validity. *Journal of Psychosomatic Research* 1994; 38: 33-40.
28. Armstrong JS, Soelberg P. On the interpretation of factor analysis. *Psychological Bulletin* 1968; 7: 361-4.
29. Cattell B. The scree test for the number of factors. *Multivariate Behavioural Research* 1966; 1: 245-75.
30. Meehl PE. Schizotaxia, schizotypy and schizophrenia. *American Psychologist* 1962; 17: 827-838.
31. Vollema MG, Van den Bosch RJ. The multidimensionality of schizotypy. *Schizophrenia Bulletin* 1995; 21: 19-31.
32. Cutting J. Morbid objectivization in psychopathology. *Acta Psychiatrica Scandinavica* 1999; Suppl. 395: 30-33
33. Sass LA. *The paradoxes of delusion*. Ithaca (NY): Cornell University Press; 1994.

Received: 12 December 2003

Accepted in original form: 4 March 2004

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