ORIGINAL ARTICLES

Oneiric Activity in Anorexia

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This work evaluated the structure of dreams in people affected by anorexia. The verbal reports of 252 anorexic patients were compared with 252 dream reports from a control group. In accordance with the Jungian conceptualization of, dreams as texts, dream reports were assessed using textual analysis processing techniques.

Significant differences were found in several measured parameters, such as Places, Context of the narration, Verb Tenses, Sequences, Speech, Characters, Emotivity and Semantic Fields.

These data demonstrate that the dream reports of anorexic patients differ from those of the control group. It is thus possible that anorexia probably underlies changes in the oneiric production and dream reports. This work confirms the value of textual analysis in the study of oneiric material. **(Sleep and Hypnosis 2010;12(1-2):1-12)**

Key words: Anorexia, dreams, textual analysis

INTRODUCTION

The existing literature on dreams relating to eating disorder is scarce, revealing less than a dozen published articles on the topic. Despite the extensive literature on the subject of eating disorder of women diagnosed either as bulimic or anorexic not much focus has been placed on their unconscious life as revealed by their dreams.

Patients with anorexia nervosa have been described as being inhibited, as having problems expressing feelings and fantasizing. These characteristics are accompanied by a repression of feelings of gratification, sexuality and aggression. Other psychological traits often present in patients with an eating disorder are: self hate, a sense of ineffectiveness the presence of negative emotions, inability to nurture, an obsession with weight, and senses of anger (image of dreamer attacking someone else, images of violent event) (1), grandiosity, omnipotence and fear of being left out (2).

Woodman (3) found the mothers of anorexic women to be negative inducing the pre–anorexic female to grow disconnected from the feminine instinct; dreams cited in her study depict collapsing underground tunnels and disintegrating foundations and images portraying frailty that he explained as the expression of self hate originated in a disconnection from the Great Mother.

Weizsäcker (4) found in dreams of his sample study a "quality of floating between life and death".

A study made by Jackson (5) showed differences between dreams that preceded a

restrictive period and those that preceded a bulimic period: "upon a path to death follows bulimia, upon blissful feelings follows another life threatening denial of food".

In other researches, food images were perceived as not accessible, not sufficient or gigantic (6–9).

All the previous papers that dealt with this issue showed a general consensus on some common features: reports of eating disorder women's dreams show the presence of ethereal and very thin beings and unfold themes of violence, chocking and suicidal wishes. They show a sense of impending doom at the end of the dream, an attitude of defeat, images of the dreamer being attacked or being watched, feelings of guilt and inadequacy, self hate, negative reactions to weight gain, feelings of vulnerability. Anorexics frequently saw themselves in their dreams as having a distorted body (especially an enlarged belly), a younger appearance and experienced food and hunger dysphoria (10). When dreams are reported, there is no correlation between their major themes and the disorder stage (11).

Individuals with eating disorders are preoccupied with food and eating and therefore would have dreams filled with food imagery (11). The same can be said for dreams that focus on the size and shape of the body. As for death–related imagery some authors theorize that dream content reflects either a wish for death or alternatively a theme of rejecting life. In the latter regard, for example, Bachar et al. (12) argue that rather than flirting with death, eating disordered patients struggle to restrict their existence to the narrowest possible parameters.

In a recent study that differentiates between dreams of anorexics and bulimics, Schredl and Montasser (13) provide a more subtle analysis. Their data suggest that anorexics' dreams show themes of food rejection, absence of interpersonal relationships, as well as rejection of the feminine role.

Touyz (14) demonstrated in his study themes of death related ideation not dissimilar to those reported by other authors (1,4,9).

The above data derive mainly from the analysis of dream content and report frequency.

The data we present derive from the analysis of both dream content and report frequency in anorexic patients, the so–called textual analysis approach.

This method represents a way to unify the qualitative and quantitative analytical methods, diminishing the historical incompatibility between the two. Textual analysis in fact includes both aspects of traditional content analysis, be it quantitative or qualitative, and a linguistic analysis of the verbal expressions.

For example content analysis would not allow to clarify the differences between the sentences below: "I was carrying a big red apple", "I was carrying a fragrant red apple" and "I was carrying a smooth red apple".

The chosen adjective holds a strong meaning because it specifies the sensorial modes involved which are vision in the first case, sight and smell in the second and sight and touch in the third. Traditional content analysis would not detect such differences while textual analysis defines the semantic of the text structure (dimensions, occurrences, prevalent grammatical structures), but also allows a continuous comparison with the original text enriching the proposed interpretations, to view the analytical pathway as a whole (15).

We employed a textual analysis derived technique (16–19) to analyze dreams according to Jungian vision that looks at the dream as a text produced by the dreamer's unconscious while he/she sleeps.

Based on this considerations we can even more view a verbally reported dream as a peculiar form of text that transforms the oneiric experience into something more objectivable.

So while the dream itself is an experience, the memory of it is the text, independently from it being reported or not.

We all know that there are other ways that effectively portray the dream experience, as drawing or selecting visual pictures, but verbal report is the only one that permits a quantitative

data analysis and, specifically in our study, a textual analysis. The elements are weaved together in order to communicate something (20) and the subject slowly constructs a text every time a dream is remembered, with a specific narratological structure (21) and well defined spatio–temporal limits (22). Chatman (23) stated the fundamental elements of narrative dividing them into the "story" and the "discourse". The story is the content or the events that take place apart from the contextual variables such as the characters or the setting. The discourse is the form of communication employed. To better explain it, the story concerns with "what" is described and the discourse with "how". In our work we focused on the latter.

Schredl and Erlacher (24) noticed that, in verbal reports, the ratings of bizarreness or positive/negative emotions judged by an external reader may not correspond to those of the dreamer. This was also experimentally demostrated by Kramer, Kinney, & Scharf (25) who administered stimuli during sleep and then found them incorporated into the dreams, and later by other experimental researches that confirmed the significant similarity between oneiric experience and the reported dream (26) (27,28). Finally in 1993 Kramer (29) hypothesized that verbal accounts accurately represent the original oneiric event. Our study purpose is to find possible correlations between linguistics and the psychological status of the dreamer, assessing the inference of psychopathology on the oneiric structure.

We aim to clarify which aspects of dream activity may be affected by anorexia and, according to the hypothesis of a "Continuity Principle" in dreams (30–32), we also predict that when compared to controls' dream reports, patients with anorexia would report findings that support continuity between waking mentation and dream content.

MATERIAL AND METHODS

The study observed 252 consecutive anorexic outpatients (from 1998 to 2010, all females) at Cattedra di Psichiatria, Dipartimento di Neuroscienze of Tor Vergata University of Rome between the age of 17 and 26 (M age 22.8 years, SD 4.2 years) and 252 control participants (all females) between the ages of 18 and 25 (M age=22.45 years, SD=3.23).

The patients had to meet the DSM–IV TR criteria for the diagnosis of Anorexia Nervosa. Clinical evaluations were carried out by two expert psychiatrists using SCID–1 (Structured Clinical Interview for DSM–IV–TR).

Patients who presented a history of drug or alcohol abuse in the previous 6 months were excluded. All patients received a SSRI treatment: 55 (20.9%) citalopram, 91 (34.6%) fluoxetine, 47 (17.9%) paroxetine, 70 (26.6%) sertraline.

The mean assessed Body Mass Index (BMI) was: = 15,72 DS 1,85.

The research team distributed some general information about the aim of our research and participants showing interest in the experiment were contacted a week later. All participants were asked to sign an informed consent form approved by the Ethical Committee of the "Tor Vergata" University, Rome.

Every morning, a member of the research team asked the patients if they had dreamed and if they could remember their dream. If the answer was yes, the dream was tape–recorded and faithfully transcribed as an accurate working copy.

To verify the presence or absence, in our study, of a certain way with which a specific feature may present itself, we employed two judges that blindly, separately, analyzed the reports of each single subject enrolled in the two distinct groups: "anorexics" and "controls".

From the data analysis emerged that the judges agreed on the presence of a specific trait in 96.05% of all reports; as for the other 3.95% a third judge, independently, as stated above, proceeded to a new exam and decided whether to include or exclude each case from our study.

In this study we employed tape–recorded dream recount, that we considered more direct and first–hand than written text. To partially

overcome external judgment we chose variables, such as number of characters, speech or time setting, that are more definite and independent from external judgment than emotions or bizarreness, and Schredl and Doll (33) admit that in some cases such as "self–ratings (i.e., those made by the dreamer himself/herself), the ratio was balanced".

Proceeding from such acquisitions, we used some of the textual analysis techniques developed in relation to the analysis of literary texts for an analysis of our material (16–19).

In particular, the oneiric text was evaluated bearing the following aspects in mind:

1. Composition of the text and its character definition

2. Speech's temporal organisation: i.e. the tenses used in the dream report. The narrator of a story or episode chooses between two alternatives: he/she can either state the facts following the order in which they occurred or manipulate the narrative's temporal sequences. The latter has a considerable impact on the organisation of the text as long as the fabula's sender alters its chronological order as he/she composes his/her speech ("anacronia", in Greek). The fabula actually cannot be reduced to a perfect mono–dimensionality whereas speech is, by its very nature, linear.

3. Emotional organisation: the narrative text does not define a story in a linear way but is somewhat organised by the sender to fit the receiver. The sender programs the timing and ways in which the data can be received and the story decoded by the receiver, as well as his/her emotional responses. In order to obtain this, he/she can choose how to represent the story and make use of certain devices such as anacronia, particular ways of using quantitative elucidation, "coup de théâtre", narrative paralipsis (passing to one side) and ellipsis (the omission of information) and the attribution of an emotional charge to determinate syntagms. The sum of such artifices constitutes the speech's emotional

aspect or "seiemic" narrative level, just as we can define the narrative unities belonging to that level as the "seiem", from the Greek verb seío, meaning "I upset" or "I excite". An analysis of the speech's "seiemic" level can be viewed in two different ways: in a broad sense, as the global analysis of the text's formal organisation seen in a "seiemic" perspective or, in a narrower sense, as the analysis of the speech's emotional unities or "seiems".

4. Semantic Fields: In this study we also evaluated the Semantic Fields: groups of words (nouns, verbs, adjectives or adverbs) that are used to describe a particular situation, environment or body of objects, which belong to everyday life and create precise associations in our minds. A semantic field is the area of meaning for a body of words belonging to a given topic.

In particular, the oneiric text was evaluated as follows:

Composition of text (Place and Context)
- **Place,** the physical setting of the oneiric scene; if defined a distinction was made whether the setting was in an open (P1.1) closed (P1.2) or mixed environment (P1.3) or if not defined (P2)
- **Context** of the narration, also defined as the setting for the oneiric narrative, paying particular attention (in the case of a well–characterized context) to its descriptive (CON1) or emotional (CON2) quality of or if there was no contextualization (CON3)

Temporal Organization (Chronology, Narrative Sequence and Verb Tenses)
- **Chronological reference,** the presence (T1) or not (T2) of a temporal observation which could contribute to the setting of the scene in which the action takes place
- **Narrative sequence,** if linear (SEQ1) or not (SEQ2), i.e., the presence or absence of flashbacks or the tearing in the narrative text's continuity and consistency
- **Verbal Tenses,** the uniformity or not (VT3)

of the temporal allocation was assessed as consistently in the past tense (VT1) or in the present tense (VT2).

Emotional Organization (Speech, Characters, Situation and Emotivity)

- **Speech,** the dream recount could contain different forms of speech structure such as direct (SP1), indirect (SP2) or both (SP3), or the dreamer could describe the scene form a position outside the narrative sequence (SP4).
- **Characters,** the dream cast as well as the dreamer's position in regards to the other actors was classified: dreamer as the only actor (CH1), presence co–actors (CH2), presence of side–characters (CH3), no characters (CH4)
- **Situation,** whether the scene describes was realistic (S1) or fantastic (S2).
- **Emotional state** was assessed in order to determine whether the dream contained (E1) or not (E2) a clarification of the dreamer's emotions, be it fear, anger, anguish, etc.

The **number of words** used to compose the narrative was counted for every dream.

Semantic fields were evaluated by assessing all the lemmas relating to the senses (sight, hearing, smell, touch and taste). These particular semantic fields were studied to investigate the features of the various sensory models in the dreams of patients and controls.

Dreaming is an overwhelmingly visual experience for sighted people. About half of all dreams also have auditory sensations, but in two large–scale studies less than one percent had gustatory, olfactory, or tactual sensory references (34,35).

Cognitive linguistics continues to provide evidence regarding the close relation between the expression and use of language, and the perception of the physical world; in other words, cognitive thinkers see language as another function embedded among the other cognitive functions and as strongly embodied

(36–42).

We studied these particular semantic fields to investigate the modification (if it occurred) of the various sensory modes in dreams in anorexia and to measure the frequency of their occurrence in the dreams of the two groups. We also evaluated all the food related lemmas, because of the central role food has in anorexic subjects' mentalization and behavior.

A study of semantic fields faces the problem of polysemy [the ambiguity of an individual word or phrase that can be used (in different contexts) to express two or more different meanings]. The computer is only able to supply a list of the frequency with which the lemmas potentially linked to the semantic field arise in the text. It is not able to assess ambiguity linked to polysemy and the fact that words often have multiple meanings depending on the context. For example, in Italian (which was the language spoken by the study's subjects), the term Sentire and its related lemmas can refer to the auditory semantic field (Sento una voce = "I can hear a voice"), the olfactory one (Sento un odore = "I can smell something"), the emotional one (Mi sento male = "I'm not feeling well"), etc. To overcome this problem, it is necessary to make use of a clarification process by a human examiner. Studies carried out by Fortier and Keen (43) confirm that the use of human examiners in studying semantic fields or literary themes is a justifiable procedure from a statistical perspective. To achieve this goal, the various lemmas were assessed separately by two examiners using the Key Word In Context (KWIC) version of the software Textual Analysis Computing Tools (TACT), an interactive full–text retrieval system with a number of analytical tools. Like others of its kind, TACT retrieves segments of text according to specified word forms. In addition, it finds words or character strings that match criteria the user specifies. It was initially used only in the field of literary criticism, as an objective method of studying the works of different authors without being bound to the personal approach of individual researchers. The application of this software to

a text allows identification of single individual words as well as the meaning of the word in particular contexts via the statistical processing of meaningful correlations between different key words. With TACT it is possible to obtain the list of KWIC concordance which is made up of lists of symbol–words or key–words (i.e., the most meaningful words amongst those which appear most frequently) inserted in their original context. The method described above permits the underlining of the hierarchical position that symbol–words occupy in dream material in reference to their absolute and relative frequency of occurrence.

Statistic

Data were arranged through the construction of contingency tables (2 x 2) where on the rows we put the two communities: anorexics and controls and on the two columns a selected condition of feature (first column) and the complex of complementary manners of the same feature; at the intersection of rows and columns we have put the rate of the respective combinations. This arrangement allows to carry out not only descriptive statistical surveys, but also to draw inferences on the statistic significance of the results.

The tables thus elaborated are suitable for several inferential analysis such as the one leading to the statistic of Odds Ratio (analysis that we chose), where, as preferred hypothesis (null hypothesis) we consider it to assume a value equal to the unit (1 = independence), against the alternative hypothesis that the considered value assumes instead, as absolute value, an entity greater than the unit itself (–1 = dependence).

For the rejection area of the null hypothesis, as establishes (according to convention) we close an interval corresponding with the area (probability) of its theoretical density curve (Gauss curve) equal or less than .05 (p value 6.05).

As it was demonstrated by Haldane J.B.S., it is well known Odds Ratio converge to the normal curve (Gauss Curve) with a mean value equal to the natural logarithm of the Odds Ratio and variance equal to the sum of the reciprocal value of the corresponding frequencies.

Given the great numbers of hypothesis the levels of statistical significance underlined by the Odds Ratio statistics need to be reinterpreted taking into account all the stated hypothesis; in simpler terms we need to get to global significance (obtained through progressive composite hypothesis) from the significance of the hypothesis stated on the single–character modality (minimal hypothesis significance) to mark that the minimal hypothesis is significative to a global level not by itself, but with a p value that equals the global one. The chosen method for this reinterpretation is the one leading to the Bonferroni Holm correction which is one of the main chapters of the closed testing theory.

The t–test was used to analyze the difference between the number of words in the anorexic subjects' dreams and that in the controls' dreams.

The analysis of Semantic Fields was performed using the t–test, comparing the frequencies of the lemmas related to the senses and food between anorexic and controls.

RESULTS

Significant differences between groups were found in several measured parameters, such as Places, Context of the narration, Verb Tenses, Sequences, Speech, Characters, Emotivity (Table 1).

Among the lemmas, food references showed a significant prevalence in the anorexia group when compared to the subjects with control group (Table 2).

In clinical group, BMI and type of SSRI did not show any influence on dream reports. In fact every logistic regression models were not significant (Table 3).

A difference regarding the length of the dream reports was found, between the two examined groups (mean number of words: Anorexic 62,33, SD 61,8; Controls 133,5 SD 128,65; p 0.001)

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Table 1. Anorexics And Controls

	P1.1(Place)	Others	TOT	ODDS RATIO	Variance	Z	P-VALUE minimale	P-VALUE closed testing
Anorexics	115	137	252					
Controls	99	153	252					
TOT	214	290	504	1,299	0,032	1,46	n.s.	n.s.
	P1.2(Place)	Others	TOT					
Anorexics	8	246	252					
Controls	56	196	252					
TOT	64	442	504	0,195	0,098	-5,21	0,00001	0,001
	P1.3(Place)	Others	TOT					
Anorexics	33	219	252					
Controls	55	197	252					
TOT	88	416	504	0,618	0,053	-2,08	0,019	n.s
	P2(Place)	Others	TOT					
Anorexics	85	167	252					
Controls	42	210	252					
TOT	126	377	504	2,615	0,045	4,52	0,0001	0,01
	CON 1(Context)	Others	TOT					
Anorexics	189	63	252					
Controls	216	36	252					
TOT	405	99	504	0,464	0,052	-3,37	0,0001	0,01
	CON 2(Context)	Others	TOT					
Anorexics	9	243	252					
Controls	30	222	252					
TOT	39	465	504	0,444	0,109	-2,46	0,007	n.s.
	CON3(Context)	Others	TOT					
Anorexics	49	203	252					
Controls	6	246	252					
TOT	55	449	504	10,738	0,194	5,39	0,0001	0,01
	T1(Time)	T2(Time)	TOT					
Anorexics	10	242	252					
Controls	72	180	252					
TOT	82	422	504	0,161	0,086	-6,24	0,00001	0,001
	SEQ1(Sequence)	SEQ2(Sequence)	TOT					
Anorexics	153	99	252					
Controls	228	24	252					
TOT	381	123	504	0,158	0,062	-7,43	0,000001	0,001
	SP1(Speech)	Others	TOT					
Anorexics	40	212	252					
Controls	38	214	252					
TOT	78	426	504	1,183	0,057	0,70	n.s.	n.s.
	SP2(Speech)	Others	TOT					
Anorexics	38	214	252					
Controls	76	176	252					
TOT	114	390	504	0,461	0,046	-3,61	0,0001	0,01
	SP3(Speech)	Others	TOT					
Anorexics	44	208	252					
Controls	28	224	252					
TOT	72	432	504	1,860	0,065	2,44	0,007	n.s.
	SP4(Speech)	Others	TOT					
Anorexics	119	133	252					
Controls	110	142	252					
TOT	229	275	504	1,153	0,031	0,80	n.s.	n.s.
	CH1(Characters)	Others	TOT					
Anorexics	35	217	252					
Controls	54	198	252					
TOT	89	415	504	0,671	0,052	-1,74	0,041	n.s
	CH2(Characters)	Others	TOT					
Anorexics	64	188	252					
Controls	47	205	252					
TOT	111	393	504	1,566	0,046	2,10	0,018	n.s.
	CH3(Characters)	Others	TOT					
Anorexics	145	107	252					
Controls	147	105	252					
TOT	292	212	504	0,946	0,032	-0,31	n.s.	n.s.
	CH4(Characters)	Others	TOT					
Anorexics	1	251	252					
Controls	4	248	252					
TOT	5	499	504	0,710	0,591	-0,45	n.s.	n.s.
	S1(Situation)	S2(Situation)	TOT					
Anorexics	52	199	252					
Controls	172	80	252					
TOT	224	279	504	0,131	0,040	-10,11	0,000001	0,001
	E1(Emotivity)	E2(Emotivity)	TOT					
Anorexics	102	150	252					
Controls	155	97	252					
TOT	257	247	504	0,430	0,032	-4,68	0,0001	0,01
	VT1(Tenses)	Others	TOT					
Anorexics	88	166	252					
Controls	41	211	252					
TOT	129	377	504	2,829	0,046	4,87	0,0001	0,01
	VT2(Tenses)	Others	TOT					
Anorexics	39	213	252					
Controls	67	185	252					
TOT	106	398	504	0,565	0,047	-2,63	0,004	0,05
	VT3(Tenses)	Others	TOT					
Anorexics	120	132	252					
Controls	144	108	252					
TOT	264	240	504	0,680	0,031	-2,18	0,015	n.s.

* ''Other'' (second column) refers to the set, belonging to the same trait, of the modes that are complementary to the one examined (for instance the modes of the trait ''Place'' are L1.1., L1.2., L1.3, L2.0 so the complementary modes to L1.2 are the whole set of L1.1, L1.3 e L2.0).

Table 2. Anorexics and Control groups: frequencies of sensory and food statements in dream text

| | Semantic Field | | | | | |
	Sight	Hearing	Touch	Smell	Taste	Food
Control	231	17	8	2	0	42
Anorexics	99	20	44	0	10	171
p-value	n.s.*	n.s.*	n.s.*	n.a.**	n.a.**	< .001

* n.s,= not significant

** na = not available due to few or no cases.

Table 3. Results of logistic regression models

	χ2	Df
Place	17.651	12
Context	4.190	4
Temporal organization	7.163	4
Narrative sequence	6.726	4
Speech	7.618	8
Characters	9.491	12
Situations	7.953	4
Emotivity	3.724	4
Verbal tense	10.191	8

DISCUSSION

The main finding is the significant association amongst the descriptive textual parameters. Our results are in accordance with the theory that views dream structure as a form of a narrative, which, according to Toolan (21), organizes the dream as "a perceived sequence of events that are connected in a non–casual manner".

In other words, a careful analysis focusing on the dream text's connecting constituents indicates that it is structured in the form of a narrative.

A limitation of our study, that we aim to overcome in our future works, is that is not possible to define whether the linguistic differences that emerged in our work were specifically related to dream reports and, therefore, to the original oneiric experience.

Language disturbances are not reported in literature as typical features in eating disorders, so we could ascribe the differences that stood out to oneiric activity itself more than to peculiar aspects linked to the psychopathology of anorexic subjects. We soon plan, anyhow, to collect reports during the wake and compare them with dream reports to assess any possible interference of the psychopathology.

A datum deals with the verbal tenses used in dream reports: usually anorexic subjects report their dreams in present tense. Time location is part of the so–called reporting devices. The past, present, future reference is a deictic category. Deictic signs, within the text, have the purpose of setting up and orientate the communication process, just like instructions that the reader has to follow to correctly acknowledge the communicator's message. (44)

Narrations have their own internal structure which is relevant for temporal interpretation. Tense denotes the viewpoint aspect that conveys information about the way in which the speaker views the situation (45). The imperfective viewpoint is the information that the sentence refers to stages of an event. The situation is not perceived as complete, with definite endpoints, the focus being on an internal stage which lack both the initial and the final boundary. The situation is perceived as open. The use of past tense is seen in perfective viewpoint that perceives the situation as closed: the event is presented as having an initial and final point. The use of present characterizes the situation as the action is occurring in real time, rather than reflecting back on the story.

A present tense of narration keeps its original meaning from its own context, while taking on meaning from the narrative context — it is thus inherently ambiguous (46).

This tense, known as the "historical present", is more common in spontaneous conversational narratives than in written mode. In linguistics and rhetoric, the historical present (also called dramatic present or narrative present) refers to the employment of the present tense when narrating past events. Present tense can give a kind of urgency to a narrative: we don't know

what's going to happen next, everything is contingent.

The use of the present tense makes it difficult to convey the deeper emotions of the supporting characters (46). This is why a present declined narration stands for a preselection of the world where the dreamer is not aware of the subject deep world, ratifying a strong difficulty in the subject empathetic capacities.

Other distinctive features in the dream reports of anorexic subjects as opposed to controls are the lack of context indicators such as the definition of the physical setting of the oneiric scene (P2), of the Context of the narration, (CON3) and of the Chronological reference (T)

These components constitute the narrative indicators, elements that allow to recognize and identify the single, interconnected, parts that make up the text and that are part of the deictic function: In linguistics, deixis refers to the phenomenon wherein understanding the meaning of certain words and phrases in an utterance requires to locate a statement within a situation in space and time, that is to connect text to context.

Usually the requested contextual informations regard the identities of the people taking part into the conversation and their temporo–spatial location.

A text lacking narrative indicators is a text not defined from a temporo–spatial perspective, poor of informations, inaccurate from a descriptive and defining perspective. The main character is not firmly grounded in an established context, but has an uncertain and floating representation of his/her place in the world. These data, according to us, reflect the fragility of the Self of the anorexic subjects, determining a constant feeling of doubt and inadequacy thus not allowing a steady representation of the world (47,48).

We can ascribe to the same root the prevalence of nonlinear narrative sequences (SEQ2) in dream reports of anorexic patients. Nonlinear narrative, disjointed narrative or disrupted narrative is one that does not proceed in a straight–line, step–by–step fashion, such as where an author creates a story's ending before the middle is finished. It is a narrative technique, sometimes used in literature, film, hypertext websites and other narratives, wherein events are portrayed out of chronological order. It is often used to mimic the structure and recall of human memory. This element might also reflect, according to our view, the unsteady representation of the outer and inner world distinctive of the anorexic subjects.

Further results show that a reduced expression of emotivity is a characteristic of anorexics' dream reports, regarding both the dream's context and the dreamer's expression of emotions. As we know, anorexia involves profound disturbances of affective and emotional life. Specifically, anorexia is characterized by the frequent association with alexithymia, that is the difficulty to identify and describe one's own feelings and to discriminate emotional states from physiological perceptions (49).

Alexithymia is considered as a personal trait, which is prevalent not only among general healthy people, but also in broad spectrum of psychiatric and psychosomatic patients, and involved in onset and aggravation of these disorders, especially anorexia (50–55).

Alexithymic patients show a tendency towards some dream perceptual deficits similar to aspects detected in anorexic people, such as the diminished capacity to recall dreams in colour.

A correlated disorder is emotion avoidance: patients with anorexia nervosa endorsed levels of emotion avoidance that were comparable to or higher than other psychiatric populations and exceeded community controls (56). Emotion avoidance can be defined here as the desire to avoid experiencing or expressing physical sensations, thoughts, urges, and behaviors related to intense emotional states. Indeed, several clinical scholars have articulated that anorexic symptoms function, in part, to help individuals cope with or avoid aversive emotions.

All these findings seem to support continuity

between waking mentation and dream content, confirming the hypothesis of a "Continuity Principle" in dreams (57–63). Content analysis has yielded longitudinal information about individuals, including the observations that an adult's dreams remain strikingly similar over time and are strongly linked to the mentations of waking life, a phenomenon known as the continuity principle.

Another finding of great interest is the difference between the anorexic persons and controls in the semantic fields of Food: anorexic subjects show a greater amount of lemmas related to food compared to controls.

This result seems to reflect the well acknowledged ideational fixation of anorexic subjects with food, central element in their thoughts. According to this view, this finding, that also confirms the existing data in literature, is a further evidence of the continuity principle.

Textual analysis allows researchers to collect quantitative data and proves to be an useful method to evaluate oneiric activity. We think also that would be of great importance to compare content analysis and textual analysis of dream reports, this will allow a direct comparison of the present data with previous studies, and it will be the aim of our future studies.

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