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## **ONEIRIC ACTIVITY IN SCHIZOPHRENIA**

This work examines a subject that has always fascinated those in research: the apparent similarity between the dream experience and the experiences related by subjects suffering from schizophrenia. Indeed, what we experience during a dream is very similar to what is felt by the schizophrenic in a waking state, namely, a world made up of absurd images and situations that are incoherent as well as spatially and temporally disjointed. Perception is of an unreal situation that evades critical analysis and acquires a dimension of credibility.

Poets, writers and philosophers had already felt bound to recognize this analogy in the past. To cite but two examples, according to Kant "the madman is a dreamer who is awake" whilst for Schopenhauer "a dream is a brief madness and madness a long dream".

As noted by Hobson (1997), dreams have the following characteristics: visual perception similar to a hallucination, temporal, spatial and situational inconsistency, a representational scenario in which all kinds of disconnected elements are linked together and, lastly, difficulties in mnemonic recall. These are all aspects symptomatic of various psychopathological conditions, including schizophrenia.

Some recent observations on the brain's neurochemical activity in both a waking and a sleeping state further emphasize such a similarity (Gottesmann and Joncas 2000 and Gottesman 2002). During the waking state, the cerebral cortex is activated by ascending stimuli coming from the brain stem and the aminergic neurons create massive inhibitory influences. During the REM phase, the cortex is activated as during the waking state but the inhibitory impulses are all silent apart from the dopaminergic ones i.e. a condition of dopaminergic hyperactivity is realized that brings the neurochemical disposition of the brain during the phase of dream production intriguingly close to that of the schizophrenic subject. The dopamine's increased influence at the level of the prefrontal cortex could explain the almost total absence of schizophrenia's negative symptoms during the dream phase, whilst an increase of the same in the nucleus accumbens could explain the hallucinations and delusions that are normal aspects of mental activity during this phase of sleep.

These affinities suggest intriguing possibilities but face a paucity of data in the publications on this subject: probably tied to the difficulty of gathering dream material from such difficult subjects. Indeed, schizophrenics are less disposed than control subjects to refer to their dreams in the morning and report 25% fewer dreams upon awakening during the REM period.

The most recent data appear rather contradictory but the various authors seem to agree on some common traits: The dreams are less numerous, less rich and shorter. the typical dream is characterized by two characters other than the dreamer, it has an indoors setting, the action is more passive than active, more hostile than friendly and more unpleasant than pleasant: the dream environment and the people often connote a threat (Carrington, 1997)

They are full of aggression and sadism, emotionally neutral and openly hostile with the hostility directed at the dreamer. They contain less strikingly sexual content than in the waking state and show the action being suffered by the dreamer who finds him/herself interacting with strangers more often than not (Schnetzler and Charbonnel, 1976).

Furthermore, in Kramer's view (1970), the dream content correlates to the clinical condition: indeed, as the latter improves, the dreams become more complicated, frequent and emotionally charged.

Taking these few but concordant data as a starting point, it seems interesting to look at the study carried out at the Psychiatric Unit of the Tor Vergata University.

The study observed 123 schizophrenic patients (60 men and 63 women) aged between 17 and 53 and 123 compatible healthy subjects aged between 18 and 50.

The research team gave out some general information about the aim of our research and people 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. All subjects were asked to recount the last dream they could remember and this was tape-recorded and faithfully transcribed as an accurate working copy.

In order to analyse the dreams according to the Jungian vision (which looks at the dream as a text produced by the dreamer's unconscious while he/she sleeps; Jung, 1945) we used processing techniques deriving from textual analysis (Gigliozzi, 1997).

If we consider the dream as a text (that is to say, as a well-knit whole or "something woven", to go back to the etymology of the term), then a fortiori we can consider the dream that is reported verbally as a particular form of text which transforms the oneiric experience into an objective product. The dream while it is being dreamed is experience, not text. Our memory of that experience, whether we report it or not, is the text of the dream. So the dream becomes a text the moment the initial experience of it has

ended, just as a waking experience can become a text as soon as we are able to reflect on it as "something that happened" to us (Killroe, 2000).

A verbal account of the oneiric datum is the only means we have at our disposal for representing the oneiric experience. We could not produce an account of the dream if the dream itself were not already a textual unity. If, following Danesi (1998), we consider the text a "weaving together of elements taken from a specific code and ordered together so as to communicate something", we are in fact constructing a text when we remember a dream, whether or not we recount it. That the reported dream is a text seems clear from the fact that it has a beginning, a middle and an end. Formally speaking, it has spatio-temporal limits in the sense of a consistent narratological structure (Killroe, *ibidem*).

The reported dream is also a text that, like a description, will reflect the narrative structure of the oneiric experience. The term "narration" refers, according to Toolan's definition, to "a perceived sequence of events that are linked between themselves in a non-casual manner". The fundamental elements of a narrative have been proposed by Chatman (1978). He divides narrative into two fundamental parts: the "story" and the "discourse". The story is the content or chain of events (i.e. the actions and occurrences) and excludes those elements that could be described as contextual variables (i.e. the characters and setting). The discourse is the form of expression or the means by which the content is communicated. In simple terms, the story represents "what" is described in a narrative and the discourse is concerned with "how" (Chatman, *ibid.*). In this work we studied the "Discourse" of the dream.

There are numerous studies supporting the belief that reported dreams are a faithful representation of the dream itself. Jung seems to presuppose the adequacy of the dream report as a valid object of textual inquiry, (Jung, *ibidem*). Numerous studies that have analysed the contents of dreams show that oneiric content is, in general, analogous to waking thoughts (Kramer et al., 1975). Experiments in which stimuli administered during sleep were shown to have been incorporated into the dreams confirm the existence of a relationship between the oneiric experience and the reported dream. (Kramer et al. 1983). Other experimental research has confirmed that there is a significant similarity between oneiric experience and the reported dream (Roffwarg et al., 1962; Taub et al., 1978). More recently Kramer (1993) hypothesizes that verbal accounts accurately represent the original oneiric event.

Proceeding from such a starting point, we used some of the textual analysis techniques developed in relation to the analysis of literary texts for an analysis of our material (Gigliozzi, *ibidem*). In particular, the oneiric text was evaluated bearing the following aspects in mind:

1. The composition of the text and its character definition
2. The speech's temporal organisation: i.e. the tenses used in the dream report. The narrator of a story or episode can choose between two alternatives: he/she can either state the facts by following the order in which they occurred within a referential (or pseudo-referential) universe or manipulate the narrative's temporal sequences. The latter option has a considerable impact on the organisation of the text insofar as the fabula's sender alters its chronological order as he/she composes his/her speech ("anacronia", in Greek). Indeed, the fabula only exists as an abstraction that cannot be reconstructed empirically, in the sense that it cannot be reduced to a perfect mono-dimensionality whereas speech is, by its very nature, linear.
3. The emotional organisation: the narrative text does not set out a story in an objective and linear fashion but is, in some way, organised by the sender to fit the receiver. The sender programmes the moments and ways in which the data can be received and the story reconstructed by the receiver, as well as the latter's emotional responses. To this end, he/ she can choose how to represent the story and make use of certain artifices: the use of 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 total 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 understood in two different ways: in the broad sense, as the global analysis of the text's formal organisation seen in a "seiemic" perspective or, in the narrower sense, as the analysis of the speech's emotional unities or "seiems".

In particular, the following parameters were examined :

" The presence or absence of an observation that defined the place in which the oneiric scene took place and, in the case of such a presence, the further specification of the type of space defined (open or enclosed).

" The definition of the narrative's context or of what could be defined the setting for the oneiric narrative, paying particular attention (in the case of a well-characterised context) to the descriptive or emotional quality of such a definition.

" The presence or absence of chronological observations contributing to a setting of the scene in which

the action takes place.

" Linearity or lack of it in the narrative sequence (eg. the presence or absence of flashbacks or of tearing in the narrative texts's continuity and consistency etc).

" The narrative speech's structure or the prevalence of direct or indirect speech or of descriptions given from a position outside the narrative sequence.

" The cast of characters or definition of the dreamer's position as well as that of other possible actors in the oneiric scene.

" Clarification or lack of it regarding the dreamer's emotional state (fear, anger, anguish etc).

" A definition of the situation represented as fantastical or realistic.

" Uniformity or lack of it in the narrative's verb tenses and, where they are uniform, the temporal allocation of the action (present or past).

" The number of words used to compose the narrative was, moreover, counted for every dream.

The frequency distributions for the dream's descriptive variables were analysed and studied both individually and in their correlations. A two-dimensional Contingency table was created for every pair of variables and the absolute frequencies for each line/column intersection were entered.

The two-dimensional distributions were processed using the Chi2 test in order to evaluate the characteristic distributions.

The length of the dreams' texts (both for schizophrenic subjects and control subjects) was compared under the various sub-headings created by the descriptive variables. The comparison test was conducted by analysing the variance from a chosen classification criterion (the ANOVA test).

The T-Test was used to analyse the difference between the number of words in the schizophrenic subjects' dreams and that in the control group dreams.

As far as the effect of neuroleptic treatment is concerned, the influence of drugs on dream production has not taken into consideration. This is both because suspension of the treatment could not be propounded and because neuroleptics only seem to show a global inhibitory effect on dream production (both directly on the dream-genesis and indirectly on the ability to remember or recount) without, however, having qualitative effects capable of proof.

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An analysis of the data revealed the following points:

" An interesting difference in the dramatis personae was highlighted, in the sense that the dream's protagonist was less frequently the dreamer in the schizophrenics' dreams than in the dreams belonging to the control group.

" Another particularly noteworthy fact comes from an analysis of the "Emotivity" variable variance: emotivity is less represented in the schizophrenic than in the normal subject. The interpretation of these data offers much food for thought.

The correlation between two variables within the groups examined was then analysed.

" The other correlation concerns the "Emotivity" and "Words" variables. The dreams without emotional connotations were the longest, showing the highest number of words. In this case also, no correlation between the two variables was highlighted in the control subjects' dreams.

The data gathered lend themselves to certain considerations.

The first datum to emerge from a summary analysis of the results is the presence of significant associations between the descriptive variables examined in their mutual association. This appears to confirm the theory of a narrative principle at work in the dream-forming process that would organise it as "a perceived sequence of events that are connected (a "running" construction) in a non casual manner". In other words, a careful analysis focussing on the dream text's connecting constituents, reveals it to be structured in the form of a narrative.

Turning to the specific data, the interesting observation regarding the dramatis personae may form the basis for a preliminary hypothesis.

Our data are only preliminary and therefore require further, in-depth studies. They do, however, show how schizophrenics' dreams tend to represent the Dreamer as the dream's direct protagonist less frequently.

Such datum is probably to be traced back to that fragility of the Ego's structure that is pathognomonic of the psychotic condition and therefore represented in the dream's "Speech" in the form of a tendency to less frequent self-reference or direct representation of the dreamer. Such an observation appears to confirm previous observations (Zanasi, 1999) which highlighted how a mechanism compensating for aspects of the Ego's fragility was at work in the dreams of psychotic subjects.

The second interesting datum concerns the reduction in directly expressed emotivity.

This datum must be set in a broader context. As already suggested by Kramer (1970), it is important to consider the factors correlating to the process of verbal reference and therefore the use of language when analysing dream reports. In particular, the reduced expression of emotivity could reflect the verbal impoverishment that may be observed in schizophrenia.

Such a possible explanation does not appear to be confirmed by the data contained in publications, however. Indeed, these highlight a series of specific alterations in psychotic language, namely:

" A reduced use of clausal linking (clausal embedding) and a greater clausal complexity (De Lisi, 2001);

" Reduced attention to the listener's needs (Wiemer et al, 2001);

" Impoverishment of verbal fluency (Chen et al); and

" A reduced use of the linguistic context (Kuperberg et al, 2000).

" They do not seem to report any alterations in reference to affectivity, however.

In other words, if the patient does not seem emotionally involved when recounting his/her dream, it would appear that this fact is to be correlated to the original dream experience rather than to an incapacity to describe his/her emotions. This datum is therefore probably to be referred to the surfacing, in the dream, of the observable, specific, emotional alterations of schizophrenia. Such alterations seem to represent a specific indicator of such manifestations.

We intend to take the study of these specific alterations further, with the particular aim of pointing out their possible predictive value in relation to the illness's subsequent development.

This possible interpretation also seems capable of accounting for the last datum we highlighted, i.e. the significant and inversely proportionate correlation between emotivity and the number of words used in the account.

The dream report's brevity in this case, too, is probably attributable to the patient's inability to access his/her own emotions directly so that the latter are therefore "offloaded" without further elaboration.

Our results, albeit clearly of a preliminary nature, seem to confirm the usefulness of our experimental approach to the dream.

Textual analysis allows a series of items of information regarding the profound mechanisms of dream genesis to be extracted from oneiric material. These confirm the Jungian hypothesis of the dream as a "symbolic self-portrayal of the dreamer's internal state".

Over and above its possible clinical application in the diagnostic field, we consider that the use of this method will help to deepen our understanding of the mechanisms and purposes of dream activity.

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