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Dream content analysis: methodological and theoretical approaches

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Abstract In studies with focus on the phenomenon of dreaming a variety of methodologies have been used. Besides the classical techniques of collecting dreams in dream diaries also a variety of questionnaires and database systems are in use. As an example, we present here the multidimensional dream questionnaire "Dreamland". With these techniques, and depending on the research question, different aspects of dreaming are assessed and analyzed. Nevertheless, the heterogeneity of these techniques hinders objectivity and reproducibility of the results of dream content analysis. In addition, also the diversity of interpretations and theoretical concepts about the origin or the meaning of dreams and dreaming contributes to these limitations. Future research on dream content analysis should be more focused on questions about the combination and integration of these diverse methodological approaches and techniques. Moreover, linguistic approaches offer new possibilities in dream content analysis.

Keyword Dream content analysis · Dream research · Dream-questionnaire · Linguistic approaches

This article is part of the main topic "dream".

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Trauminhaltsanalyse – methodische und theoretische Ansätze

Zusammenfassung Bei der wissenschaftlichen Beschäftigung mit dem Phänomen Traum kommen eine Reihe sehr unterschiedlicher Methoden zur Anwendung. Neben dem klassischen Aufschreiben eines Traumes z.B. in Form von Traumtagebüchern werden auch speziell konstruierte Fragebögen und Datenbankprogramme verwendet. Ein Beispiel dafür ist der multidimensionale Traumfragebogen „Dreamland", der hier kurz vorgestellt wird. Je nach angewendeter Methode können so unterschiedliche Aspekte des Traumgeschehens und der Traumarbeit erfasst und untersucht werden. Allerdings bringt diese Methodenvielfalt auch Limitierungen mit sich, die letztendlich die Vergleichs- und Reproduzierbarkeit von Trauminhaltsanalysen erschweren. Zusätzliche Probleme ergeben sich noch durch die unterschiedlichen theoretischen Konzepte zur Traumentstehung und der Bedeutung von Träumen. Aufgabe der empirische Traumforschung wird es sein, bei zukünftigen Forschungsvorhaben sich vermehrt mit Fragen der Kombinierbarkeit und Integration der unterschiedlichen theoretischen und methodischen Zugänge der Trauminhaltsanalyse auseinanderzusetzen. Darüber hinaus eröffnen linguistische Ansätze neue Möglichkeiten zur Trauminhaltsanalyse.

Schlüsselwörter Trauminhaltsanalyse · Traumforschung · Traumfragebogen · Linguistische Ansätze

Introduction

Dream experiences are short-lasting phenomena and are forgotten very quickly after waking up. To capture a dream, various methods are applied, each of which has its advantages and limitations. Winget and Kramer

(1979) pointed out that it is not possible to isolate the dream experience per se, because it is influenced by a number of factors and there are various interactions. Up to now there is no systematic meta-analysis available, which enables us to examine how different dream recording techniques influence the content or length of dreams or other aspects of dream reports. Therefore, many statements on the advantages or disadvantages of the different reporting techniques remain somewhat speculative (for an overview see Schredl 2010a). Nevertheless, there is a need for appropriate methods to collect dream reports in a standardised way, in the home environment as well as in laboratory settings. The applied methods should be easy-to-use, guarantee adequate methodological standards (e.g. reliability and validity) and should cover both clinical trials and basic research. This article gives a brief overview on different methods of collecting dreams and analysing written dream reports. In the last section, we present an easy-to-use questionnaire ("Dreamland") which has proven its usefulness in studies with patients as well as healthy subjects (Klösch et al. 1999, 2003; Holzinger et al. 2001).

Methods of collecting dreams

Written dream reports are the most important source of information about dream characteristics. Almost all scientists in the field of dream research use dream diaries as a major instrument for collecting and analysing dreams. Surprisingly, basic literature on how to use and organize dream diaries is rare (Schredl 1999; Strauch et al. 1992). There is also a lack of standardized procedures on how to analyse dream reports and dream content.

Dream reports depend on the place in which the dream is experienced. Reports obtained at the sleep lab differ markedly from those collected in a private setting. Several studies (for an overview see: Foulkes 1996; Schredl et al. 2003) have focused on this problem and most of them concluded that reports from different settings cannot be compared (Domhoff and Schneider 1998). Lloyd and Cartwright (1995), however, recently argued that these differences could be reduced by using more sophisticated techniques to wake the subject.

Without any doubt, *the method of awakening* influences the dream report dramatically. Some authors suggest that reports after spontaneous awakening are longer (Stickgold et al. 2001) than after forced awakening. But also the kind of stimulus by which the dreamer is awakened determines the dream report. Tactile stimuli presented during sleep, for example, are more often incorporated into dreams than visual ones (Dement and Wolpert 1958).

The content of dream reports and dream recall frequency strongly depend on the sleep stage prior to awakening, whose influence may be twofold: dream reports from REM sleep are more bizarre than those from Non-REM sleep episodes (e.g. Foulkes 1962). Moreover, the subjective feeling of being fully awake and alert also depends on the sleep stage from which the dreamer is awakened (e.g. Amrein et al. 2000). Quick awakening (e.g. from "light sleep" such as sleep stage 1 or 2 and REM) facilitates recall of mental activity. But more than that, emotionality is also influenced by sleep stages: being awakened from deep sleep often induces disorientation, feelings of discomfort and bad mood.

Apart from numerous other environmental influences, personality traits, motivation and the interpersonal situation (absence or presence of the dream collector, etc.), as well as the method of collecting dream reports (prospective versus retrospective methods) also determine their quality and quantity (e.g. Schredl 1999; Watson 2003; Zadra et al. 2012).

In experimental settings, most *dream reports are recorded on tape* and are retyped afterwards (e.g. Foulkes 1979; Hurovitz et al. 1999). This method offers the advantage of accuracy and spontaneous talking gives the speaker less time for correcting or revising. In 2009, Simard and Nielsen introduced a new method of collecting dream reports via automated phone answering systems.

Verbal dream reports are based on at least two cognitive transformations. Since most mental activity during sleep is supposed to be visual, pictures are encoded into verbal descriptions, which are then reorganized into a story. In contrast to visual experiences, stories have a definite structure: the beginning (which also includes the introduction), the main part with the "plot" and the ending.

As an alternative to verbal dream reports, subjects are sometimes asked to *draw their dreams*. This method has certain advantages over verbal reports but might interfere with the dreamer's lack of skill in drawing. Moreover, several methodological shortcomings (e.g. how to interpret pictures objectively) might be one reason why this technique is not frequently used in scientific dream research. As early as in 1917, Pötzl was the first to carry out several experiments using pre-sleep visual stimuli to test whether subliminal perception influences dreaming. More recently, Leuschner et al. (1994) continued Pötzl's approach, utilizing more elaborated techniques of stimulus presentation by tachistoscope (for an overview see Schredl 1999). This is, however, not the case in psychotherapy. Among other techniques, drawing or acting out a dream is frequently used in therapeutic settings (Uslar 1993).

In addition to verbal reports, *dream diaries* are one of the most frequently used dream collection methods. Written protocols are not as spontaneous as verbal reports and tend to be briefer and more logical. They are also limited by the dreamer's vocabulary and writing abilities. But despite these limitations they also have major advantages: dream diaries can be kept over a very long period of time and do not require "sophisticated" technical equipment. Once a dream diary has been started, the subjects get used to it and soon a highly individual way of reporting/writing will be established. There is also evidence that subjects do not wish to confide their

dreams to anyone else than themselves and thus dream diaries guarantee a high level of privacy. Re-reading of written dream reports is supposed to be easier than listening to tape recordings of one's own voice, which also influences motivation and compliance.

One of the major limitations of written dream reports is the lack of standardized procedures to collect and analyze written protocols. The need for standardization is often addressed (e.g. Smith 1984), but most researchers fail to provide any details on how dream diaries are utilized. Is the diary re-written by the investigator and is this procedure checked by others? How are "formal" aspects of the text (e.g. marking oft grammar mistakes, abbreviations, etc.) dealt with? In written reports it is sometimes rather difficult to distinguish between the dream reports *per se* and comments and/or interpretations given by the writer, but this problem seems to be completely neglected in the relevant literature.

The easiest way of determining the characteristics of dreams is by means of *questionnaires*, standardized protocols and scales or rating systems to analyse the dream content. In their book "Dimensions of Dreams", published in 1979, Winget and Kramer already reviewed and described about 132 dream content scales and rating systems. After more than 20 years it is time to rewrite and repeat such a meta-analysis, but there is evidence that the number of scales has doubled or even tripled. But as a matter of fact hardly any of these scales are standardized and they only address a few aspects of dream characteristics (e.g. Hauri et al. 1967; Kallmeyer et al. 1997; Schredl 1999, 2004).

Although dream questionnaires are very helpful in collecting dream reports, like any other questionnaire, they also have their limitations. First, they can only include a limited set of questions, which allows only a very rough and sometimes vague description of the dream. Second, questions might be misunderstood by the dreamer, which leads to wrong assumptions. Third, the structure of the questionnaire influences the dream content retrospectively. This might not be a disadvantage by itself because it sometimes helps reorganize vague and vanished memories of the dream. Nevertheless, one must be aware of these kinds of interactions.

Methodological considerations

Collecting dream reports is not a simple task and a variety of methodological issues have to be considered beforehand. The decision of using sleep logs or questionnaires influences dream report frequency as well as the dreamer's motivation and, consequently, the attitude towards dreams. In some studies, significantly fewer dreams per week were reported by sleep logs as compared to questionnaires or checklist logs (e.g. Beaulieu-Prévost et al. 2005; Zadra et al. 2012). This is the case in healthy subjects but collecting dreams in patients is even more complex. In own studies with different patient groups, besides the above-mentioned and well-documented methodological effects, we observed also other determinants which may be triggered by the underlying pathology. In patient with various psychiatric disorders we also found a continuous decline in the number of dreams reported over the entire study period (see Figs. 1 and 2).
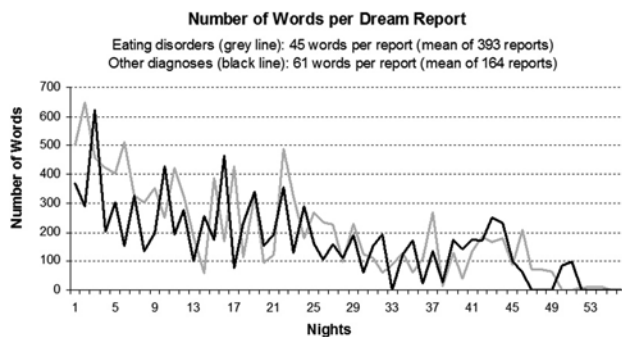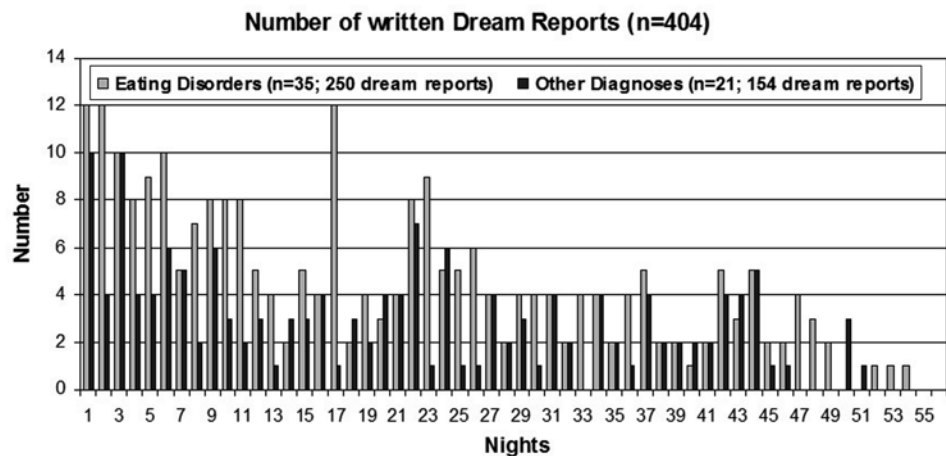
This decline may be primarily caused by a lack of motivation and is present in both methods: dream questionnaires as well as dream diaries (Fig. 2) but may also be a therapeutic side-effect. In a sleep and dream study in patients with eating disorders in a clinical setting (Holzinger et al. 2001; Klösch et al. 2003) we also found a trend towards shorter written dream reports during therapeutic intervention (see Fig. 3).

This effect was more pronounced in patients with eating disorders as compared to other psychiatric patient groups. Obviously, patients with eating disorders prefer filling in dream questionnaires to writing extensive dream reports. To conclude, we found evidence that formal criteria of a dream (e.g. the dream length, determined by the number of words per dream) and the preference for dream logs or dream questionnaires are triggered also by the diagnosis.

Fig. 1 Number of completed "Dreamland" questionnaires in patients with various psychiatric diagnoses. The dream questionnaires were filled in daily during a stationary psychotherapy over the same time period. During the eight week study period a decline in the number of returned dream questionnaires was observed in both patient groups. Nevertheless, the number of returned questionnaires was higher in patients with eating disorders
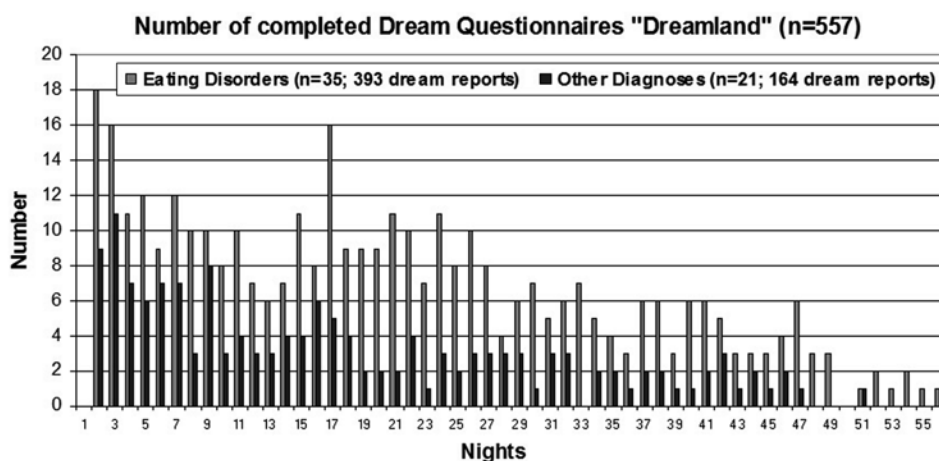
Fig. 2 Number of written dream reports in patients with various psychiatric diagnoses. Dream reports were collected daily during a stationary psychotherapy over the same time period. During the eight week study period a decline in the number of written dream reports (collected by logs) was observed in both patient groups. This decline was not affected by the different diagnoses

Number of written Dream Reports (n=404)

☐ Eating Disorders (n=35; 250 dream reports)   ■ Other Diagnoses (n=21; 154 dream reports)

Number of Words per Dream Report

Eating disorders (grey line): 45 words per report (mean of 393 reports)
Other diagnoses (black line): 61 words per report (mean of 164 reports)

Fig. 3 Number of words per dream in patients with various psychiatric diagnoses. Dream reports were collected daily during a stationary psychotherapy within the same time period. Over the eight week study period a marked decline in dream length (as determined by word counts) could be observed in both patient groups. In patients with eating disorders, however, the mean length of a written dream report was shorter (45 words) than in patients with other psychiatric disorders (61 words)

Nevertheless, reporting dreams daily by logs is considered to be a more valid indicator for the quality and quantity of dreams (e.g. Levin et al. 2007). According to Zadra et al. (2012) checklist dream logs are more reliable, since they are less affected by attentional or emotional factors. In our opinion, personal likes or dislikes should be considered as well: some persons prefer filling in questionnaires to keeping a dream log, which positively influences dream recall frequency (e.g. Cory et al. 1975; Schredl 2002).

As already mentioned, one of the major drawbacks of dream questionnaires is the lack of standardisation, validation and reliability. Many questionnaires have their focus on specific topics such as dream motifs (e.g. Yu 2012; Malinowsky et al. 2014), nightmares (e.g. Belicki 1992), impactful events and traumas (e.g. Orsillo et al. 2007), emotionality (e.g. Rezzonico et al. 2004; Zadra et al. 2006; Yu 2007), lucid dreaming (e.g. Voss et al. 2013), REM sleep behaviour disorders (e.g. Boeve et al. 2011), or assess dreaming in general with rather complex instruments (e.g. Kallmeyer et al. 1997; Aumann et al.

2012). Cross validation studies (comparisons between questionnaires measuring the same dimensions) are still missing (e.g. Schredl 2004). On the other hand several questionnaires refer to personal constructs or traits which are difficult to evaluate by other instruments (e.g. Hartmann's concept of thick and thin boundaries, Hartmann et al. 1998).

What is needed are easy-to-use instruments, which can be completed in patients as well as in healthy subjects over longer time periods. These instruments should provide some basic information about the formal criteria of dreaming (dream frequency, time of dreaming, dream lengths, etc) as well as the content of the dream (themes, sources, the emotional impact, the dreamer's involvement in the dream etc.).

Methods of analysing the dream content

In contrast to the physiology of dreaming, which is widely accepted and whose impact on human science is regarded as important, the significance of dream content analysis remains controversial. Some researchers believe that dreams (and their content) are nothing but random noise without any meaning (e.g. Hobson 1997), while others argue that dream content is highly significant and has a very complex and meaningful structure (e.g. Revonsuo 2000). Dream analysis has a long-standing tradition. In ancient times (Mesopotamia, Egypt, Greece, Rome) dream content analysis played an important role in public life (for an overview see: Walde 2001) and books on dream interpretation became very popular (e.g. "*Oneirokritika*" by Artemidor and "*Hieroi logoi*" by Aelius Aristide). For many centuries, these books served as guidelines, were republished and translated into many languages and plagiarized by numerous "experts".

The "psychoanalytic approach": dream-work

One of Freud's basic ideas about dreaming was the distinction between the *manifest* and *latent* dream con-

tent. The manifest dream is always a censored version of the "unknown" latent dream, which is assembled by wishes and motives from the sub-consciousness. Dream work and interpretation is to look behind this censored version of the dream by using a technique called "free association". According to Freud, dreams are the hallucinating expression of a repressed wish and, therefore, the full meaning of dreams cannot be understood by the dreamer himself: Dream analysis requires the assistance of trained analysts.

The psychoanalytic concept of dream interpretation incorporates two aspects: First, a theory about the generation of dreams: Like many other elements of mental activity, they are the result of an interplay between id, ego and superego. Therefore, dreams are always multiply determined and have many different meanings. Second, a theory about the interpretation of dreams: Dream analysis is always a confrontation with the dreamer's unconscious fantasies and infantile wishes. Since they are censored and symbolized, they have to be interpreted by trained experts.

In summary, working with dreams in a psychoanalytic framework is highly theoretically determined, and the meaning of a dream is embedded in a theoretical concept rather than based on empirical observations.

The "empirical approach": the Hall and Van de Castle system (1966)

Hall and Van de Castle tried to establish a set of empirical categories by reading hundreds of dreams. Analysing the data, they set up a system of categories, which is based on a nominal level of scaling. Since there are no ranks or weights, various discrete categories can be considered equal and compared. Moreover, comparison with normative data is also possible.

The system consists of ten general categories, many of which are divided into subcategories: (1) Characters; (2) Social Interactions; (3) Activities; (4) Striving: Success and Failure; (5) Misfortune and Good Fortunes; (6) Emotions; (7) Physical Surroundings, Settings and Objects; (8) Descriptive Elements; (9) Food and Eating; (10) Elements of the Past.

Studies on the interrater reliability between scores revealed different percentages of perfect agreement, depending on the categories. The lowest percentage of perfect agreement was found for the category "Social Interactions", with an agreement of only 54–64 %.

The Hall and Van de Castle system is one of the best empirically proved scales but has the limitation that short (less than 50 words) and long dreams (more than 300 words) cannot be analysed. Other disadvantages are that learning how to use the coding categories and analysing big samples of dream reports is very time-consuming. This problem, however, has partly been solved by *DreamSAT*, a spreadsheet developed by Schneider and Domhoff (1998), which is also available on the internet, where it is called *DreamBank.net*.

With this web-based tool it is possible to create a large database for dream analysis. Utilizing search engines it is possible to locate individual words and identify expressions associated with them. For example, the system can create word strings such as *kiss|hug|intercourse|made_love|had_sex* and is able to recognize erotic or sexual scenes in dreams. On the basis of this analysis, it is possible to compare a series of individual dreams with those of a normative population (e.g. age- and sex-matched controls).

The "linguistic approach": dreaming and story telling

As already mentioned, depending on the different methods of collecting dream reports, the "structure" and content of a dream may vary. If a subject is awakened directly out of a dream state, the report may not be very well elaborated and verbally incomprehensible. Here, the most adequate way to collect dreams is to audio-tape the report and to transcribe it afterwards. Without any doubt, these first-hand oral accounts are the most direct and authentic representation of the original dream experience (Gackenbach et al. 2013) but specific tools are necessary to analyse the report (e.g. Casagrande et al. 2008). At first glance, written dream reports have many similarities with conventional stories because they are "constructed" by largely the same semantic and syntactic rules as stories generated during the wake state. Like story-telling, writing down or talking about dreams is a way of both re-constructing and constructing what is commonly defined by the term "reality". However, in contrast to stories of the "real world", which always have to follow the rules of continuity and real-word experiences, dreams do not have any reference to reality. They cannot be judged in the sense of being "true" or "false" because they are not part of a framework we share with others.

There are several linguistic theories on how to characterize a story or a literary text and how these approaches have to be adapted for dream reports (e.g. Hanke 2001; Zanasi et al. 2011). According to Mandler and Johnson (1977), a story or report is typically composed of the "introduction part", followed by the "story itself", which culminates in a plot and finally the "ending". Apparently, in written dream reports or oral representations of the dream, this structure might not always be visible and even unconnected fragments of the dream narrative may coexist without any temporal or logic connections. Because of the complexity of dream reports, linguistic analysis techniques have to consider also other dimensions, related to

- the *composition of the text* (e.g. a dream report may include a short summary of the dream),
- the *temporal aspects* (when and where the story happened),

- the *emotional organisation* and the *composition of the text* (place, context, complications, additional situations, etc.), and
- the way how problems were solved (e.g. the ending or the plot of the dream).

Methodological considerations

Applying specific scales to characterise the content of a dream has some limitations since only a few aspects of the dream are covered by questionnaires. Since the "empirical approach" has its focus on the formal and semantic structure of dreams, other aspects are neglected (e.g. the interactive aspect: almost all written dream reports address a "reader"). In our opinion these comments or explanations are also part of the dream report and have to be considered as well which is in contrast to Schredl's suggestion (2010b), "All information not reflecting the dream experience .... should be removed ... (p. 66)". Psychoanalytic and (psycho-) linguistic approaches overcome these shortcomings by using a more complex and interactive way of analysing the structure of the dream narrative. Nevertheless, this approach has some pitfalls and methodological limitations. First of all, psychoanalytic and linguistic approaches can only be applied by well trained and experienced personnel. Secondly, to guarantee reliability and validity, the methods applied have to be defined accurately beforehand to ensure a high correspondence between different judges. This is mostly not the case in psychoanalytic approaches and partly also not possible in linguistic methods. Validity problems may also occur, because expert judgements might not always reflect the dreamer's personal view, especially when emotional aspects of the dream are concerned. We asked patients with various psychiatric diagnoses to characterise the emotionality in their written dreams utilizing the "Dreamland" questionnaire.
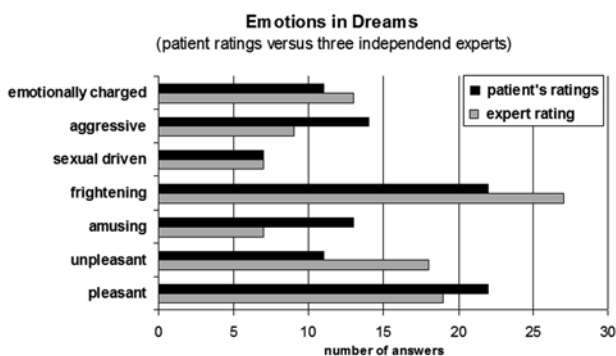
Fig. 4 Emotions in dreams of patients with various psychiatric diagnoses (*n* = 23; eating disorders = 12). Patients rated their written dreams reports utilizing the "Dreamland"- questionnaire. Patients dream reports were then rated in the same way by three independent and trained "dream experts". Patients found their dreams to be more aggressive, amusing and pleasant, whereas "experts" scored the patients dreams to be more frightening and unpleasant

Afterwards, the patients' dreams were scored in the same way by three independent and trained "dream experts" (see Fig. 4). Experts characterised the patient's dreams to be much more frightening and unpleasant, whereas the patients found their dreams to be more aggressive, amusing and pleasant. This example illustrates that ratings of the dreamer should always be considered as well when analysing the content of a dream.

The "Dreamland" questionnaire: a easy-to-use questionnaire to assess dream recall frequency and dream content

The lack of adequate questionnaires to assess both dream recall frequencies and some characteristics of the dream led to the creation of the "Dreamland" questionnaire in 1997 (see appendix). This dream questionnaire consists of 10 categories of items pooled into two parts: In the first part, four categories of questions are related to the number, duration and time course of dreams. In the second part, subjects may characterize their most prominent dream by means of a set of given categories related to the dream sources, the main topics of the dream, affectivity as well as sensory and emotional involvement. Items are analysed by transferring the marked questions into MS-Excel™-spreadsheets and may then be analysed with quantitative or descriptive statistics. Moreover, the back side of the questionnaire can be used for a more detailed description of the dream. This allows direct comparisons of the dreamers' ratings of their own dream and the ratings of experts (see Fig. 4). In this sense, the questionnaire reflects our understanding of a multidimensional approach in dream research.

The questionnaire has proven its usefulness in patients in clinical settings as well as in healthy subjects (e.g. Klösch et al. 1999, 2003) and can easily be integrated into a sleep diary. This was the case in various studies with objective sleep measurements as provided by polysomnography or ambulant activity monitoring by actigraphs (Klösch et al. 2001). Within this framework, the "Dreamland" questionnaire has shown its reliability and is currently being validated against other methods for assessing the content of dreams.

Conclusive remarks

Sleep and dream behaviour are closely connected and therefore dream research must always consider sleep as well. Therefore, looking at dreams as an isolated phenomenon without having any knowledge of the dreamer's sleep behaviour, daytime activity and personality traits is incomplete and leads to ambiguous results. It is essential to specify how different settings and life events influence sleep and dream behaviour.

Additional tools such as *sleep polysomnography*, *actigraphy* (movement detectors which are worn on the wrist of the non-dominant hand) or devices to *register eye*

movements (e.g. Nigthcap device by Mamelak et al. 1989; NovaDreamer™ by LaBerge 1985) have proved to be useful in studying dreams within the framework of scientific projects or therapeutic interventions.

Taking all these factors together, it becomes evident that there is a need for a more comprehensive and multidimensional approach to dream research, specifically in dream content analysis. Linguistic approaches offer a variety of new opportunities and techniques that have hardly been considered in dream research. This approach could play an important role in obtaining a more reliable and comprehensive description of dreaming, both in patients with mental disorders and an healthy controls, which might be of interest to both scientists and therapists.

In contemporary dream research, such *multidimensional approaches* are missing, even though a number of studies also consider sleep-related features (subjective sleep quality, etc), polysomnographic or psychological variables. Finally, in our opinion, also the dreamer's opinion and interpretation of his dream should be more integrated in empirical dream content analysis.

Appendix

DREAMLAND - Questionnaire

1. How many dreams of last night do you remember?
a: one ☐
b: two ☐
c: more than two ☐

2. During which part of the night were you dreaming?
a: first part ☐
b: second part ☐
c: third part ☐
d: don't know ☐

3. Approximately how long did your dreams last?
a: some minutes ☐
b: more than 10 minutes ☐
c: don't know ☐

3.1. How would you describe your perception of time while you were dreaming?
a: like in the waking state ☐
b: longer, slowed down ☐
c: shorter, faster ☐
d: don't know ☐

4. How much do you still remember of your dreams?
a: everything in detail/almost everything ☐
b: some episodes ☐
c: nothing ☐

4.1. Did you wake up because of one of your dreams?
a: yes ☐
b: no ☐

4.2. If so, did this dream make it harder for you to go back to sleep?
a: yes ☐
b: no ☐

Please characterise the most prominent dream of last night (more than one answer possible):

5. Did you find the dream content...
a: clear ☐
b: bizarre and unclear ☐
c: familiar ☐
d: strange ☐
e: colourful ☐
If so, which colour was predominant?_____
f: without any colours or black and white ☐
g: pleasant ☐
h: unpleasant or embarrassing ☐
i: amusing ☐
j: frightening ☐
k: sexual /"driven" ☐
l: aggressive ☐
m: emotionally charged ☐

6. Was your dream related to
a: an event that happened during the day ☐
b: an event of the recent past ☐
c: an event of your childhood ☐
d: an event you don't remember at the moment ☐
e: a future event ☐

6.1 What was your dream about?
a: animals ☐
b: strangers ☐
c: friends ☐
d: family members, relatives ☐
e: landscapes ☐
f: buildings, caves ☐
g: objects ☐

7. Please try to characterise the predominant types of sensory impressions (in % of the whole dream content):
a: visual _____ %
b: auditory _____ %
b1: speech _____ %
b2: music, singing _____ %
c: gustatory, olfactory _____ %
d: tactile, dermal (feeling cold/warm, etc...) _____ %
e: kinaesthetic sensations (walking, running, flying, etc...) _____ %

8. How did you participate in the dream?
a: actively ☐
b: passively, not initiating action but being acted upon ☐
c: without acting, only observing ☐

9. Were you aware of the fact that you were dreaming?
a: yes ☐
b: no ☐

10. Did you have the feeling that you were able to voluntarily influence your dream?
a: yes ☐
b: no ☐

For a detailed description of a dream or dream fragment, please use the back side.

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