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Dreamland—a dream content questionnaire in German based on the English version

Severin Ableidinger¹ · Gerhard Klösch^{1,2,3} · Brigitte Holzinger^{1,3}

¹ Institut für Bewusstseins- und Traumforschung, Vienna, Austria

² Universitätsklinik für Neurologie, Universitätskliniken der MedUni Wien/AKH Wien, Vienna, Austria

³ Schlafcoaching, Postgraduate Medizinische Universität Wien, Vienna, Austria

Abstract

In dream research there exists a multitude of dream questionnaires and dream content analysis scales. However, many of them are either limited, not standardized or validated, or require a lot of effort. At the same time there are often divergent or even contradictory results in dream research, and comparability between different studies is often limited. Large sample sizes are rare but would be necessary for representative and compelling findings. For studies analyzing large samples of dreams, short and easy-to-use questionnaires would be of great assistance. As an easy-to-use questionnaire that covers all relevant dream aspects, the Dreamland Questionnaire, was developed in 1997. The questionnaire has since been revised and partially validated. In this paper, we give an overview of the questionnaire and its underlying methodology. The questionnaire is separated into three parts measuring dream quantities and dream qualities as well as lucidity. The questionnaire further encourages the dreamer to write down their dream. In different studies it has already been used to show that dreams sampled in the laboratory and dreams sampled at home differ and that emotionality in dreams differs if rated by the dreamer themselves or by external raters. The questionnaire is also available in German.

Keywords

Dream Content · Dream-Assessment · Lucid Dreaming · Sleep · REM

Supplementary Information

The online version of this article (<https://doi.org/10.1007/s11818-023-00419-2>) contains supplementary material, which is available to authorized users.

The German version has been added as supplementary material, for the English version see [19].



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Introduction

In current dream research there exists a wide range of dream content analysis scales and dream questionnaires [8, 34, 57]. Further, there are different methodologies for dream interpretation, exploration, and documentation. Winget and Kramer reviewed and described 132 dream content scales and rating systems as early as 1979 [56]. Additionally, many different dream questionnaires have been developed (for an overview, see, e.g., [34]). This wide range partly stems from different aims and different research topics [21], but also from restricted or difficult accessibility of different questionnaires, which might compel researchers to generate their own questionnaires and apply their own

methods for dream exploration. However, this makes comparing different studies and results quite difficult, as those questionnaires differ in their sampled dream characteristics or ask about the same dream characteristics differently. At the same time, this can provide reassurance regarding the robustness of findings.

Dream content analysis based on reports and questionnaires

For dream and dream content analysis, written dream reports are the most important source of information. Dream diaries are one of the most frequently used methods for gathering dream reports; however, there is hardly any literature on how to use and organize dream diaries [21].

Another prominent method is asking participants to write down their most recent dream [9], but this suffers from the fact that primarily very prominent dreams are remembered. In dream questionnaires, it has been noted that rating scales are based on the premise that the dream attribute can be rated and ranked [9] and that the dreamer is able to differentiate between the intensities of various attributes such as happiness or sadness.

As noted above, there are many different definitions of dreams. Pagel et al. [30] listed about 20 definitions of dreams and concluded that it might not be possible to create a single definition of a dream. However, they concluded that a definition of dreaming should consider three characteristics: wake/sleep issues, recall, and content. The different theoretical concepts about dreaming, their origin, and their function causes difficulties with respect to the comparability of different dream questionnaires and different dream studies. In Schredl's opinion "a dream or a dream report is the recollection of subjective experiences that occurred during sleep after waking up" [44, p. 1].

However, as this definition makes it clear that dream reports should be used to assess dreams, it excludes the possibility of studying dreams while they are happening. For example, in a recent study, Raduga [31] managed to detect a spoken phrase while the person was in a lucid dream. According to Schredl's definition, it is unclear whether this approach is suitable for studying dreams.

A fundamental issue dream research faces is that dreaming is an almost purely subjective phenomenon, especially dream content, as only the dreamer can directly experience the dream. Even though there are new ways of identifying dreams while the dreamer is still sleeping (e.g., [27, 46]) and insights into dream content can be found due to dream reports, the dream plot, motifs, and impressions are only accessible to the dreamer themselves. An issue hereby is to prove that a dream "really" exists as an experience that one has while sleeping and being otherwise unconscious. Some critics have argued that dreams might as well just be created in the moments of awakening and do not reflect longer processes possibly connected

to REM sleep [9]. However, LaBerge has shown in his research on lucid dreams that at least some dreams do occur while sleeping and not during waking up [27]. He could detect lucid dreams while the participants were asleep via sequences of eye movement. Accepting that dreams do exist, it is still difficult to assess whether dream reports accurately reflect the "true" dream content. Although studies with REM behavior disorder and sleep talking [1, 28] have shown that there is definitely an overlap between dream reports and objective characteristics of sleep, there are arguments that dream content might be changed in the process of remembering and reporting them [25]. Therefore, dream reports might be influenced by various factors. Kramer noted that dreams reported during the night are more fragmentary than dreams reported the next morning [25]. Moreover, verbal samples collected during pre- and post-sleep episodes were more related to each other than dream reports given during the night [25].

Despite all criticism, it is widely accepted that dream reports are a reliable source of information about dreams and dream content [24, 42, 56]. Subjective reports are now widely accepted as a valid source of information. Further, it was shown that reports often match objective characteristics of sleep [27, 28].

Nevertheless, there are still a variety of methodological issues in studying dreams. It is often difficult to get dreams from a representative sample (e.g., [26]). Some subjects may submit many dreams, while others submit none or very few. While some have tried to wait for all subjects of a study to submit a fixed number of dream reports, this can take a very long time (e.g., [6]). On the other hand, when pressuring participants to submit reports, it is likely that some just confabulate reports [52]. There are also statistical concerns regarding how to process data when some participants submit many dreams and others very few. Participants who submit many dreams influence the results much more than others remembering only one dream. This might bias the resulting findings. A possible solution might be to accept only one dream per participant, but this eliminates a lot of useful data. For regression analysis, mixed

effects models may be useful for statistical analysis.

Further, the relationship between the dreamer and the researcher (or therapist) might influence what dreams are reported and how [13, 55].

Given this, recruiting participants to write dream diaries can suffer from a biased sample and statistical problems. Therefore, Domhoff [9] suggests encouraging groups of people to participate by writing down their most recent dreams and submitting them anonymously. However, this also suffers from similar shortcomings: some people might not even remember any dreams or might write down the most prominent dream they remember, which they had quite a long time ago. Some could also feel forced to submit a dream report and confabulate a dream. Furthermore, there are differences in dream characteristics when dreams are collected via dream diaries or the most-recent-dream method [45]. For example, sampling via the latter method results in more bizarre dreams, which suggests that this method favors prominent and extraordinary dreams.

There also seem to be systematic differences between people who usually volunteer to participate in dream studies and people who do not [34]. Those who volunteer seem to have fewer dreams but think that they dream more often than others. They also pay more attention to their dreams and consider their dreams more meaningful and interesting than non-volunteers [32].

Dream questionnaires and scales

Existing dream questionnaires and dream content analysis methods are often limited or not standardized or validated (e.g., [16, 38, 39]). Many existing questionnaires, including the Mannheim Dream Questionnaire [34], the Düsseldorf Dream Inventory [2], the Dream Content Questionnaire [4], and the Frequency and Intensity Lucid Dream Questionnaire [3], assess dreams retrospectively by general questions (e.g., How often do you remember a dream?). This approach cannot be used for the assessment of a single dream. Notable exceptions here are the Dream Property Scale [49], the Memory Experiences and Dreams Questionnaire (MACE; [20]), and the Lucid

and Consciousness in Dreams Scale (LuCiD; [53]). The LuCiD as well as the MACE are only used for assessing lucid dreams.

The Hall and Van de Castle Coding System [15], despite having huge empirical support and being widely used, cannot be used to analyze short or very long dream reports. Moreover, this coding system (like other such systems) needs training and this can be quite time consuming.

However, as was emphasized, quantification of dreams and dreaming is essential [25]. This is also essential as different dream studies often have different and sometimes even contradictory results (e.g., [33]). To resolve this issue, larger sample sizes could clarify such issues and strengthen the representativeness of results. But large samples of participants and of dream reports might be difficult to analyze using methods like the Hall and Van de Castle Coding System [15]. One solution here is using computerized dream analysis techniques [10]. This can be implemented by using the Hall and Van de Castle Coding System [12], but also by other methods [10]. Another solution are questionnaires with self-rating scales, which would make it easier to gather dream data of hundreds and thousands and analyze them statistically. Such a questionnaire should involve formal criteria of dreams such as the frequency with which one dreams, but should also include questions on dream content and themes. This makes the questionnaire more versatile, as it can be used to assess dream recall frequency, overall characteristics of dreaming, and the subjective experiences one has while dreaming.

As such, the Dreamland Questionnaire (DL-Q) was developed in 1997 to create an instrument that comprises all relevant dream aspects but is also short, quick to fill out, and easy to evaluate. The items were derived from clinical observations and previous empirical work but also from other existing questionnaires, and the final pool of items was selected based on expert ratings. Further, different dreamers were asked if items were missing for an adequate and comprehensive description of their dreams. Since then, it has been revised with the help of test theorists, as some items were rephrased and visual analog scales were implemented. The DL-Q was

also partially verified using the Hall and Van de Castle Coding System [19].

In this paper, we want to provide details about the underlying methodology and considerations of the DL-Q, examples of dream content analysis based on this questionnaire, and its limitations.

Methodology of the Dreamland Questionnaire

The DL-Q is meant to be used in the morning to assess the dreams of the previous night. This makes it different from most other dream questionnaires, which assess dream recall frequency and dream properties in retrospect. There have been findings indicating that asking about dreams in general might lead to different results to dream diaries due to recall biases and social desirability [4, 9]. The DL-Q comprises a total of 14 items which are split into three parts. While the first part covers dream quantities, the other two parts cover dream qualities. The first part includes questions regarding the approximate duration of the dream, and number of dreams during the night. This enables the DL-Q to be used in studies with a focus on dream recall frequency and on time estimation while dreaming. The second part asks the dreamer to think about or write down one dream occurring during the previous night in more detail. The dreamer is asked to characterize the dream by the dream content, the dream plot, perceived emotions, and sensory impressions. The third and last part includes several questions about lucid dreams. A person might have more than one dream during the night but is instructed to report only one dream in order to make the questionnaire less demanding. However, this might lead to biases, as dreams with more embarrassing or offensive contents might not be reported.

The DL-Q comprises questions about vivid fantasies, the strangeness of the dream, and their bizarreness. Active control is assessed as both active participation in the dream plot as well as influence over the dream in lucid dreaming. Other items are related to the pleasantness, verbal and physical aggression, sexuality, and whether the dream content is related to present, past, or future events.

It also offers the dreamer the possibility to report the full dream in their own words. This makes it possible to compare self-rated dream characteristics with those of external ratings. The authors consider this feature as a big advantage of the DL-Q in comparison to other dream questionnaires and over coding scales (see reports in [22]). For example, Schredl and Doll [35] have shown that in externally rated dreams, negative emotions outweigh positive ones; however, this is not the case in self-ratings, where the ratio is more balanced. This finding was replicated by Sikka, Valli, Virta, and Revonsuo [47]. The authors of this study concluded that not only the ratio between positive and negative emotions in dreams is more balanced, but also that dreams are characterized to be more emotionally driven when self-ratings are compared to external ratings. It was argued that a dreamer might not explicitly report all emotions that occurred during the dream. As such, self-ratings might be more valid than external ratings, as they give the dreamer a chance to also report emotions that were not explicitly mentioned in the dream report [43].

The DL-Q includes both open- and closed-answer questions in single- or multiple-choice formats. For example, items related to different topics which may occur in a dream are offered in a multiple-choice format, whereas for other items (e.g., awareness in dreams), only a single answer can be given.

The DL-Q also explores activity in dreams and lucid dreaming with two separate questions for the awareness of dreaming and the controllability of the dream. This separation of lucid dreaming has some important aspects. As has been shown, dream control in lucid dreams is actually rare [29]. It has been estimated that only 37% of lucid dreamers can control their dreams [54]. Furthermore, there are arguments about how to define lucid dreaming, as some argue that lucidity is sufficiently defined as being aware of dreaming [14], while others argue that control and complete memory of the waking life is essential for lucid dreaming [50, 51].

Furthermore, the DL-Q incorporated the suggestions made by previous studies. For example, in a study of 124 dream re-

ports assessed on 20 psychological characteristics, Hauri, Sawyer, and Rechtschaffen [16] extracted eight factors that explained the majority of the total variation (vivid fantasy, active control, pleasantness, verbal aggression, physical aggression, heterosexuality, perception, and reference to past experience).

Studies with the Dreamland Questionnaire

The DL-Q has already been used in various studies (e.g., [7, 17, 18, 22, 23]). This section provides an overview of these studies and their results.

In one study, dreaming at home and dreaming in the sleep laboratory were compared using the DL-Q [23]. Twenty participants filled out the DL-Q over a period of 14 days. Within this period, two consecutive nights were spent in the sleep laboratory. The number of reported dreams was about the same at home as in the sleep laboratory. However, the dream characteristics in the sleep laboratory differed to the dreams at home with respect to dream length and the nature of their sensory expressions. Moreover, the dreams from the first and the second nights in the sleep laboratory were different in terms of their length, their content, and their emotionality. This is in accordance with other studies which have found that dreams collected in a laboratory differ from dreams sampled at home, as well that the first night in a sleep laboratory has a special effect on dreams, as participants have to get used to their new sleeping surroundings (e.g., [40]).

Another study compared dreams from inpatients with different eating disorders: 32 patients with either anorexia nervosa, bulimia nervosa, or with bulimic and anorectic episodes volunteered for the study, filled out dream questionnaires, and provided written dream reports. In total, 393 dream questionnaires and 256 written dream reports were completed and analyzed. The number of dream reports decreased during the observation period, but the average number of words per dream report did not. Furthermore, differences between patients with anorexia nervosa and bulimia nervosa were found, as patients with anorexia nervosa provided

shorter dream reports on average (35 vs. 61 words). They were, however, more willing to fill out the dream questionnaire than to write a dream report. Regarding dream content, inpatients more often dreamt of conflicts with family members and friends as well as of scenarios related to food intake and meal preparation. In addition, independent raters categorized the dream reports as more frightening, aggressive, and unpleasant than the patients themselves [22]. The difference between external ratings and self-ratings matches the finding of Schredl and Doll [35] and Sikka, Valli, Virta, and Revonsuo [47].

Another study examined dream characteristics in patients with sleep apnea: 76 participants underwent polysomnography because of suspected sleep apnea. The DL-Q and dream reports were collected immediately in the morning after the first awakening. Dream content analysis was performed on the dream reports, and specific questions were added to the DL-Q to characterize possible breathing-related dream content in detail. Of the participants, 63 were diagnosed with sleep apnea, while the other 13 were included as a control group. There was no significant difference in respiratory-related dream topics between those diagnosed with apnea compared to the control group. In addition, no correlations between respiratory parameters and dream content were detected [7]. Previous studies reported similar results. While some studies found relationships between respiratory events and emotionally negative dreams [11, 48], others found no such connection [37, 41].

Revision of the Dreamland Questionnaire

Due to shortcomings and new insights, the DL-Q has been revised. Additional questions and options to answer them have been added and some answers have been changed. For example, when asked about what the content of the dream was related to, the answer “an event that happened during the day” has been split into the categories “a known situation from everyday life” and “a current event” to get a more delineated picture of what the participants

dreamt about. Moreover, questions about the characteristics of the dream plot have been changed from checkboxes to visual analog scales, to allow more precise descriptions of the dream experience. The predominant types of sensory impressions were also changed from a specification of percentages to a visual analog scale.

The DL-Q was translated into English in order to be validated by the Hall and Van de Castle Coding System [19]. Note that the studies with the DL-Q cited above were performed before the DL-Q was revised. After validation, the DL-Q was retranslated into German. However, not all aspects of the DL-Q had equivalents in the Hall and Van de Castle Coding System and, therefore, only a subsample of questions could be validated. For example, dream figures like animals, friends, and family members fit well with the Hall and Van de Castle Coding System (and showed significant correlations), whereas other questions related to the familiarity of the dream content, visual impressions, and pleasantness did not correlate significantly. However, this could be explained by the fact that all aspects not explicitly asked are often lost in the Hall and Van de Castle Coding System. For example, different colors, emotions, and sensory impressions are less prominent in dreams when analyzed by the Hall and Van de Castle Coding System as compared to other dream analysis techniques [43].

Limitations of the Dreamland Questionnaire

Dream diaries have some shortcomings in general compared to verbal dream reports. They are not as spontaneous and they tend to be briefer and more logical [36]. In addition, they are influenced and limited by the vocabulary and writing ability of the person reporting their dream [21], and different participants might rate the same experience quite differently. External raters might be more objective but they need extensive training to reach a sufficient level of interrater reliability.

The DL-Q only assesses dreams from one night and, predominantly, only one dream. If participants experience more than one dream per night, this might lead to unintended biases towards “harmless” dreams. However, using the DL-Q on mul-

tiple nights might bring a more valid picture of both dream recall frequency and the dream characteristics of the dreamer.

Dream characteristics may be limited by the limited number of categories provided by the DL-Q. Although the most frequent categories (as provided by dream content studies) were included in the DL-Q, subjects may have different experiences and might need other characteristics to fully describe their dream experience.

Another limitation of the DL-Q is that the structure of the questionnaire might influence the dream content retrospectively [21]. The dreamer might rate his dream as more pleasant when previously asked how happy or sad the dream was. Furthermore, answers given to the questions in the DL-Q might be influenced by one's self-concept [5] and not related to the "real" underpinnings and motif behind the dream. For example, people who rate themselves as more agreeable report more people in their dreams [5].

The questionnaire is not yet fully validated, as only some scales have an equivalent in the Hall and Van de Castle Coding System, which was used to validate the questionnaire. Further, as the questionnaire is specific for one night and one dream, it is difficult to reach conclusions about its reliability, as giving it to the same person on two separate days assesses two different nights and dreams. Kahan and Sullivan [20] tried to establish reliability of the MACE by giving the same questionnaire twice with a 10-minute break, while completing two other questionnaires in between. Although they instructed participants to answer it with the dream in mind and not the questionnaire they had already answered, it is difficult to assess whether this second answering is not highly influenced by the first. Voss et al. [53] for LuCiD as well as Takeuchi et al. [49] for the dream property scale used Cronbach's alpha to determine internal reliability. These efforts should also be undertaken in the future with the DL-Q to assess how reliable the questionnaire is. Further validation might be also necessary.

Conclusion

The DL-Q is a multifunctional tool for gathering dream reports and analyzing dream

characteristics. With this questionnaire, the characteristic features of a dream can be assessed in a fast and easy way, and no further scales and rating systems are necessary. With this tool, dream content analysis is easier and faster than using the much more complex Hall and Van de Castle Coding System (which offers 300 different coding options [15]). Compared to this, the DL-Q is shorter, more concise, but also less diverse and lacks in its current form many of the specific topics other dream analysis tools cover. The English version has been partially validated and there is also a German version available. However, it is also not without limitations.

Corresponding address

Dr. Brigitte Holzinger
Schlafcoaching, Postgraduate Medizinische
Universität Wien
Vienna, Austria
office@traum.ac.at

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Declarations

Conflict of interest. S. Ableidinger, G. Klösch, and B. Holzinger declare that they have no competing interests.

For this article no studies with human participants or animals were performed by any of the authors. All studies mentioned were in accordance with the ethical standards indicated in each case.

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Dreamland – Ein Trauminhaltserhebungsfragebogen in deutscher Sprache basierend auf der englischsprachigen Version

In der Traumforschung existiert eine Vielzahl von Traumfragebögen und Skalen zur Inhaltsanalyse. Viele von ihnen haben allerdings nur eingeschränkte Anwendungsgebiete, sind nicht standardisiert bzw. validiert oder erfordern hohen Arbeitsaufwand. Gleichzeitig kommt es in der Traumforschung häufig zu voneinander abweichenden oder sogar widersprüchlichen Ergebnissen, und die Vergleichbarkeit verschiedener Studien ist oft eingeschränkt. Große Stichproben sind nur selten verfügbar, für repräsentative und aussagefähige Forschungsergebnisse wären sie jedoch notwendig. Für Studien, die große Stichproben von Träumen analysieren, wären kurze, einfach zu verwendende Fragebögen eine wesentliche Unterstützung. Als einfach zu verwendender Fragebogen, der alle relevanten Traum Aspekte abdeckt, wurde 1997 der Dreamland Questionnaire entwickelt. Seitdem wurde der Fragebogen überarbeitet und teilweise validiert. In diesem Beitrag werden der Fragebogen und die ihm zugrunde liegende Methodik im Überblick dargestellt. Der Fragebogen ist in 3 Teile gegliedert, gemessen werden quantitative Aspekte, qualitative Aspekte und die Luzidität der Träume. Ferner wird der Träumende im Fragebogen dazu ermutigt, den Traum aufzuschreiben. In verschiedenen Studien wurde er bereits eingesetzt, um zu zeigen, dass sich im Forschungslabor erfasste Träume von zuhause erfassten Träumen unterscheiden und dass die Emotionalität in Träumen je nach Bewertung durch den Träumenden selbst oder durch externe Bewerter differiert. Der Fragebogen steht auch in deutscher Sprache zur Verfügung.

Schlüsselwörter

Trauminhalt · Traum-Aufzeichnung · Luzides Träumen · Schlaf · REM

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