

Children's Dreaming: A Study Based on Questionnaires Completed by Parents

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Objective: This paper reports an investigation on children's dreaming based on questionnaires completed by parents. The purpose of the study was to collect data on a large group of subjects and evaluate their consistency compared to the traditional studies on children's dreams (i.e., REM dreams, home-collected dreams and school-collected dreams).

Method: The questionnaire (QSEE) used mainly considers questions about parents compliance with dreams and questions about children's dreaming, particularly the last dreams they have had. The study was conducted in different schools of Center-North Italy. 1148 questionnaires were distributed to parents, 652 of these were returned to the experimenter (return rate = 57%) and 565 were usable (usability rate = 49%). The 565 questionnaires involved 565 children (255 female, 310 male) aged between 2 years;9 months and 9 years;4 months.

Results and Conclusions: The questionnaire employed has proved to be useful in collecting data on several aspect of children's dreaming in a relatively simple and cost-effective way. Furthermore, the indications obtained on child dreaming matched with several data from studies that adopted more conventional dream collection methods. A large part of well-established knowledge about children's dreams (e.g., short length, presence of animal characters and so on) was supported by the use of a large sample of children/dreams, that allow for a more certain generalization. The use of questionnaires of this kind may stand side by side with conventional methodologies allowing a valid opportunity of cross-checking their results. (**Sleep and Hypnosis 2006;8(1):19-32**)

Key words: Children's dreams, dreaming, dream content, dream bizarreness

INTRODUCTION

Studies on children's dreams have frequently shown their utility for our

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understanding of dreaming processes and psychological child development (1-3).

Generally, these studies are based on two conventional methods. A first method is based on dream reports collected upon REM awakenings in sleep laboratory (i.e., REM dreams) (e.g., 4), a second method is based on dream reports collected upon final morning awakenings at home (i.e., home-collected dreams) (e.g., 5-6). Both methods are based on interviewing (experimenter or parents) directly the children about their dreams, and they guarantee a maximum

temporal proximity between dream report and dream experience. A further method employed consists of collecting "the last dream that children have had" by systematically interviewing children in individual morning sessions at school (i.e., school-collected dreams) (e.g.,7).

Despite of their many advantages, studies on children's dreams based on conventional methodologies present certain implementation difficulties. For example, it is difficult to find parents willing to participate with their children in these researches (4,5). Moreover, these studies require a complex organization, considerable costs and are usually finalized in the long term (e.g.,5). Also because of these difficulties, at present day, empirical data on young children's dreams derive only from a few studies on small groups of subjects (e.g.,4,8).

A new methodology was recently proposed for the collection of information about dreaming and sleep habits in development age by means of a questionnaire (QSEE)¹ completed by the parents (9). Some advantages of this methodology are the following: in the first place, the questionnaire is easy to administer; in the second place, it enables a massive-scale survey of children in a cost-effective manner; and, lastly, this type of investigation can be completed in a short time and may be easily repeated.

Preliminary and partial results of a study conducted with this methodology based on a large sample of normal Italian children have shown data on children's dreaming that were mostly consistent with those of previous studies based on "REM dreams", "home-collected dreams" and "school-collected dreams" (10).

This paper describes the complete results of this investigation and attempts to evaluate their consistency compared to known data in literature findings with classical methodologies.

METHOD

The questionnaire. The questionnaire (QSEE) used mainly considers two groups of questions. The first group is about parent compliance with dreams (7 items) and considers two dimensions, "attention to own dreams" and "degree of meaning attributed to own dreams", scored by a 4-point scale, and dream recall (number of dreams/week). The second group is about the children's dreaming, particularly the last dreams they have had (21 items) (see appendix A). A separate part of the questionnaire presents questions about the children's sleep habits. I have analyzed the sleep habits of children elsewhere (11,12).

Procedure. The study has been conducted in 20 schools of Center-North Italy. These were located in a few small towns (< 20,000 inhabitants) near the cities of Viterbo, Frosinone and Bologna and in the city of Udine (95,000 inhabitants). The questionnaires were distributed to the teachers who gave them to parents. Teachers asked parents to return the filled questionnaire within one week.

Data analyzed. 1148 questionnaires were distributed to parents, 652 of these were returned to the experimenter (return rate = 57%) and 565 were usable (usability rate = 49%). The 565 questionnaires involved 565 children (255 female, 310 male) aged between 2 years; 9 months and 9 years; 4 months (see table 1). In 325 questionnaires (57%) parents recalled very well the last dream reports by their children and carefully wrote them on the questionnaire. We considered only these questionnaires when we analyzed the features of the last dreams the children had had (content, setting, etc.) (see table 2). For the other items we considered all the 565 questionnaires. In the data analysis, children were divided into two age groups (3 to 5 and 6 to 8).

Statistical analysis. The analyses were performed using the Statistical Package for

¹Italian abbreviation of - Questionario Sognare Età Evolutiva -, that is, Questionnaire on Dreaming in Development Age.

Social Science (SPSS) for Windows Version 11.0. Frequencies, Median score, U-Mann-Whitney and χ^2 were the statistic indicators used.

Table 1. Children's age

Age / years	Female	Male	Total
2	2	3	5
3	26	34	60
4	29	56	85
5	46	60	106
6	58	56	114
7	61	64	125
8	30	36	66
9	3	1	4
All ages	255	310	565

Table 2. Children whose last dream reports were transcribed by parents

Age / years	Female	Male	Total
2	1	1	2
3	11	17	28
4	18	26	44
5	28	43	71
6	39	31	70
7	29	39	68
8	15	23	38
9	3	1	4
All ages	144	181	325

RESULTS

Parents' profile. The parents who answered to the questionnaires were mostly from the middle class (i.e., office workers, skilled workers, craftsmen). The questionnaires were predominantly completed by mothers (84%). Many of this were housewives, but several also worked out of home. They were generally present at the early-morning awakening of their children everyday (85%) and typically stayed and interacted with their children for 3¹/₂ hours a day (median score). They used to question their children about their dreams, "sometimes" (46%), or "frequently" (26%) . The mothers typically said to remember "well enough" the last

dream reported by their children (median score).

Parents' compliance with dreams. The parents who answered to the questionnaires typically believed that dreams deserve attention and that they have a meaning (median scores). Generally these parents (80%) recalled between one to three dreams a week.

I. Children's interest for dreaming

Young children (3-5 years-old) "rarely" ask their parents about dreams and show "very little" interest in dreaming, while older children "sometimes" ask about dreams and show "little" interest in dreaming (median scores) (Mann-Whitney U-test , p = .000).

2. Dream recall

60.7% of young children in the last month of the survey typically reported at least one dream and 39.3% reported no dreams (dream recall median score: one dream). The situation was similar among older children: 72.7% reported at least one dream and 27.3% reported no dream (dream recall median score: two dreams). The differences between age groups were not statistically significant (see table 3).

3. The first dream reports

The first dream story was reported by a little girl of 2 years and 11 months:
-The girl and her dog were running towards the road and then the dog invited her to climb up and go faster, but there was an officer-.

4. Features of the last dream reported

As referred by mothers, most children reported their dreams generally at morning awakening (59%) or during the same day (31.5%) (9.6% in other moments). Children

reported these dreams mostly "spontaneously" (81%), and rarely "on demand" (14%) (4.8% "uncertain") (all ages). While reporting these dreams, the children frequently appeared quiet or glad (74%), more rarely anxious (21%), and gloomy (5%) (see table 4).

4.2. Bizarreness

Most of the dreams reported by younger children (3 to 5 years old) were classified as "ordinary and realistic" (46%, n 62), followed by dreams "realistic but with some strange elements" (38%, n 52) and "strange and improbable" (16%, n 22). In the older age

Table 3. Dream recall: frequency of dream reports in previous month by age

	Number of dreams reported						
	None	1	2	3	4-5	6-9	10-20
3-5 years-olds	88 (39.3%)	36 (16.1%)	34 (15.2%)	26 (11.6%)	22 (9.8%)	10 (4.5%)	8 (3.6%)
6-8 year-olds	77 (27.3%)	57 (20.2%)	55 (19.5%)	42 (14.9%)	28 (9.9%)	14 (5.0%)	9 (3.2%)
All ages	165 (32.6%)	93 (18.4%)	89 (17.6%)	68 (13.4%)	50 (9.9%)	24 (4.7%)	17 (3.4%)

χ^2 (df 6) = 9.112, p = .167

Table 4. Emotional state during the report of the last dream by age

Age	Happy	Anxious	Quiet	Gloomy
3-5 year-olds	25 (17.4%)	26 (18.1%)	87 (60.4%)	6 (4.2%)
6-8 year-olds	34 (19.1%)	45 (25.3%)	91 (51.1%)	8 (4.5%)
All ages	59 (18.3%)	71 (22.0%)	178 (55.3%)	14 (4.3%)

χ^2 (df 3) = 3.27, p = .351

4.1. Dream length

Parents classified dream reports as follows: -brief story- (60%), -brief sentence- (16%), -long sentence- (12%), -long story- (7%), -long and elaborated story- (5%) (all ages). Differences between age groups were not statistically significant (see table 5).

group (6 to 8 years old) dreams were classified as follows: 38% (n 64) "ordinary and realistic", 34% (n 57) as "realistic but with some strange elements", and 28% (n 46) as "strange and improbable". The differences between age groups were close to statistical significance ($\chi^2 = 5.619$, df = 2, p = .060) (see table 6).

Table 5. Length of the last dream report by age

Age	"Brief sentence"	"Long and elaborated sentence"	"Brief story"	"Long story"	"Long and elaborated story"
3-5 years-olds	31 (21.5%)	16 (11.1%)	83 (57.6%)	7 (4.9%)	7 (4.9%)
6-8 year-olds	21 (11.8%)	22 (12.4%)	110 (61.8%)	17 (9.6%)	8 (4.5%)
All ages	52 (16.1%)	38 (11.8%)	193 (59.9%)	24 (7.5%)	15 (4.7%)

χ^2 (df 4) = 7.373, p = .117

Table 6. Bizarreness of last dream reports by age

Age	"ordinary and realistic"	"realistic but with some strange elements"	"strange and improbable"
3-5 anni year-olds	62 (45.6%)	52 (38.2%)	22 (16.2%)
6-8 anni year-olds	64 (38.3%)	57 (34.1%)	46 (27.5%)
All ages	126 (41.6%)	109 (36.0%)	68 (22.4%)

χ^2 (df 2) = 5.619, $p = .060$

Table 7. Main setting of dreams: number of dreams for setting by age

Age	Home	School	Recreational	Vague
3-5 year-olds	24 (17%) ^a	24 (17%) ^b	12 (8%) ^c	20 (32%) ^d
6-8 year-olds	51 (28%)	17 (9%)	21 (12%)	16 (23%)
All ages	75 (23%)	41 (13%)	33 (10%)	36 (27%)

^a χ^2 (df 1) = 6.28, $p = .012$, ^b χ^2 (df 1) = 3.68, $p = .055$, ^c χ^2 (df 1) = 1.01, $p = .314$, ^d χ^2 (df 1) = 1.34, $p = .246$

4.3. The general themes of dreams

A qualitative analysis of the dreams transcribed in the questionnaire forms by parents shows that most of these present "ordinary and everyday themes", such as, for example, a scene of playing with friends at school or an interaction with parents. Other frequent themes are "fantastic themes", e.g., an interaction with a cartoon character or an emulation of the preferred heroes. More rarely these dreams show "anxious themes". We also found several examples of clear "wish-fulfillment dreams".

4.4. Dream setting

The most frequent dream settings were: -home setting- (23 % of dreams), -school setting- (13%), and -recreational setting- (10%) (all ages). However, the setting was frequently -vague- (27%). About 26% of dreams show various other settings such as the supermarket, the woods, the lawn, etc.. These young children show a significantly greater presence of -school setting- and less presence of - home setting - compared to older children (see table 7).

4.5. Dream characters

The most frequent characters were: -family members- (57% of dreams), followed by - animal characters- (46%), -known children- (44%) and -TV characters (i.e., cartoon,

famous character, etc.)- (20%) (all ages). The differences between age groups were not statistically significant (see tables 8-11).

Table 8. Family members in the last dream by age

Age	Presence	Absence	Uncertain
3-5 year-olds	87 (60.0%)	50 (34.5%)	8 (5.5%)
6-8 year-olds	98 (54.7%)	67 (37.4%)	14 (7.8%)
All ages	185 (57.1%)	117 (36.1%)	22 (6.8%)

χ^2 (df 2) = 1.20, $p = .547$

Table 9. Known children in the last dream by age

Age	Presence	Absence	Uncertain
3-5 year-olds	62 (43.7%)	72 (50.7%)	8 (5.6%)
6-8 year-olds	80 (44.9%)	85 (47.8%)	13 (7.3%)
All ages	142 (44.4%)	157 (49.1%)	21 (6.6%)

χ^2 (df 2) = .505, $p = .777$

Table 10. TV characters (i.e., cartoon, famous character, etc.) in the last dream by age

Age	Presence	Absence	Uncertain
3-5 year-olds	29 (20.1%)	106 (73.6%)	9 (6.3%)
6-8 year-olds	37 (21.4%)	129 (74.6%)	7 (4.0%)
All ages	66 (20.8%)	235 (74.1%)	16 (5.0%)

χ^2 (df 2) = .825, $p = .662$

Table 11. Animal characters in the last dream by age

Age	Presence	Absence	Uncertain
3-5 year-olds	71 (49.0%)	69 (47.6%)	5 (3.4%)
6-8 year-olds	79 (44.4%)	91 (51.1%)	8 (4.5%)
All ages	150 (46.4%)	160 (49.5%)	13 (4.0%)

χ^2 (df 2) = .781, $p = .677$

4.6. *Self-representation*

Children start to picture themselves in their dream scenario already between 3 - 5 years of age. In particular, they appear as main characters- in 56% and as

-side characters- in 26%. Only in 9% of dreams the dreamer was not present. A similar situation appeared among children aged 6 to 8 (see table 12).

4.9. *Evident connection with recent real-life event*

Parents identified for the last dream of their children a clear connection with a recent real-life event of dreamers in 44% (n 142) of dreams (91% of parents wrote it on questionnaire), vice-versa, in 56% (n 183) they couldn't see a clear connection with any diurnal events, or were uncertain (all ages).

The events of the day the dream seems to refer to are often pleasant (59%), followed by

Table 12. Self-representation in the last dream by age

Age	Presence as protagonist	Presence as secondary character	Absence	Uncertain
3-5 year-olds	78 (56.0%)	36 (26.0%)	12 (9.0%)	13 (9%)
6-8 year-olds	106 (60.0%)	43 (24.0%)	7 (4.0%)	20 (11%)
All ages	184 (58.0%)	79 (25.0%)	19 (6.0%)	33 (10%)

χ^2 (df 3) = 3.382, p = .33

4.7. *Social interaction of dreamer*

Dreams frequently (67%) show social interaction of the dreamer (all ages). The differences between age groups were not statistically significant (see table 13)

4.8. *Aggressive actions*

Dreams frequently (72%) reported no violent and aggressive action (all ages). The differences between age groups were not statistically significant (see table 14).

Table 13. Social interaction of dreamer in the last dream by age

Age	Presence	Absence	Uncertain
3-5 year-olds	93 (67.4%)	35 (25.4%)	10 (7.2%)
6-8 year-olds	120 (67.8%)	43 (24.3%)	14 (7.9%)
All ages	213 (67.6%)	78 (24.8%)	24 (7.6%)

χ^2 (df 2) = .082, p = .96

Table 14. Violent and aggressive action in the last dream by age

Age	Presence	Absence	Uncertain
Age	Presence	Absence	Uncertain
3-5 year-olds	25 (17.9%)	104 (74.3%)	11 (7.9%)
6-8 year-olds	41 (23.3%)	124 (70.5%)	11 (6.3%)
All ages	66 (20.9%)	228 (72.2%)	22 (7.0%)

χ^2 (df 2) = 1.552, p = .460

unpleasant (25%) and neutral events (16%). Dreams that have clear connection with unpleasant diurnal events are less frequent in young children ($\chi^2 = 9.438$, df = 2, p = .009) (see tables 15-16).

Table 15. Clear connection to diurnal events in the last dreams by age

Age	Presence	Absence	Uncertain
3-5 year-olds	64 (44.1%)	65 (44.8%)	16 (11.0%)
6-8 year-olds	78 (43.3%)	89 (49.4%)	13 (7.2%)
All ages	142 (43.7%)	154 (47.4%)	29 (8.9%)

χ^2 (df 2) = 1.681, p = .431

Table 16. Recent real-life event identified by parent for the last dream reports by age

Age	Presence	Absence	Uncertain
Age	Pleasant	Unpleasant	Neutral
3-5 year-olds	39 (63.9%)	8 (13.1%)	14 (23.0%)
6-8 year-olds	43 (34.2%)	27 (54.4%)	9 (11.4%)
All ages	82 (58.6%)	35 (25.0%)	23 (16.4%)

χ^2 (df 2) = 9.438, p = .009

DISCUSSION

The QSEE questionnaire allowed us to obtain data on several aspects of children's dreaming using a large group of subjects.

Beyond the characteristics of dream contents, we have obtained information on other interesting aspects about dreaming scarcely considered in the previous studies, e.g. the parents' interest in the dreams of their children, the children's interest in their dream, the emotions of children while reporting their dreams, and so on.

The interpretation of the results and their comparison with previous literature required some caution. The method employed here to collect data on children's dreams was indirect and substantially different from those usually employed in these studies. Information on features of the last dream reported by children were obtained by parents and the moment in which the children recalled their dream cannot be established with precision. Nevertheless, we know that most of this dreams were reported spontaneously by the children upon morning awakening.

In previous studies children's dreams were collected in a more direct ways. For example in some studies dreams were collected directly by systematically interviewing children about "the last dream they have had" and dreams were tape-recorded and transcribed verbatim (5,7). In other studies, with older children, dreams were collected by asking them to write down the last dream they remembered having had, stating whether they had had such dream the night before, the week before or the month before (13,14).

The QSEE method is even more different from studies in which dream reports were collected upon final morning awakenings at home (5-6,15) and upon REM awakening in sleep laboratory (4) where maximum temporal proximity between dream report and dream experience is guaranteed.

Keeping in mind these differences, below is a description of how the data of the present investigation match with previous studies on dreams of children (aged 3-8).

Children's interest in dreaming

From the age of 6, children start to show

an initial interest in the phenomenon of dreaming. These data are consistent with previous studies that suggest willingness and co-operation of children during this type of investigation (4,5,16). For example, in a study where dream reports were collected at home upon morning awakening by mothers, the latter observed good co-operation and a genuine attempt from their children to recall and describe their dreams (5,17).

Dream recall

The results of this study on spontaneous dream recall are not directly comparable with previous studies because in these dream recall percentage was scored through a proportion between the number of dream reports and the number of attempts to collect them on awakening (nocturnal REM awakening or at-home morning awakening) (e.g., 4,15).

However, our data are close enough to a previous study by Foulkes (18) in which he observed spontaneous dream recall for a period of 112 days in 14 children aged between 6 and 7 in their home setting and found that six children recalled no dreams in that period (43%).

Furthermore QSEE data support the evidence based on several previous studies that there are no statistical differences in dream recall rates among different age levels (3 to 8 year-olds) (4,8,15). Probably dream recall ability is due rather to certain cognitive skills than to age in itself. Indeed, according to Foulkes, the ability to remember the dream relates to the development of visual-spatial abilities (e.g., block design test - WISC, Wechsler Intelligence Scale for Children) (4,8).

The first dream reports

According to previous studies, QSEE data show that children are able to report their dreams prior to 3 years of age. Anecdotal and clinical studies noticed several examples of children around two years of age who

reported their dreams (e.g., 1,2,19,20). In systematic studies, the earliest dream reports collected derived from 3-years-old children (4,5).

Features of the last dream reported

Dream length

The brevity of children's dreams is a well-established datum in the literature beyond the methodologies employed in collecting dreams (i.e., anecdotal dreams vs. home-collected dreams vs. school-collected dreams vs. REM dreams) (e.g., 1,2,4,5,21).

Also parents of the present study have had no difficulty in scoring the dreams of their children predominantly as a "brief story".

Unlike most previous studies, no statistically significant difference between young and old children was found here. Really, this latter result may be influenced by the sensibility of the measurement used. Studies that used more sensible measures (e.g., word count), compared to the 5-level scale of QSEE questionnaire, report this difference between young and old children. For example, the REM dream reports of older children were found to be longer (3-5 vs. 5-7 year olds) (4). Similarly, school-collected dreams of children aged 5-7 years were longer (by word count) than those of younger children (3-5 year-olds) (5). Vice-versa, less sensible measures (verb count) found no statistically significant difference between young and old children's dreams (7).

Dream bizarreness

According to previous studies, QSEE data confirm that young children's dreams are substantially ordinary and realistic. Typical bizarre dreams like those of adults are rare in children (4,6,15,17,22-26).

The non-bizarre nature of these dreams is observable even if dreams are collected with different methodologies (family / non-family interviewer) and/or in different settings (laboratory, home, school) (4,6,5,7,15,22-

23,25). In addition, these data confirm certain classical anecdotal and quantitative observations on the simplicity of children's dreams (1,2,27-29). QSEE data also confirm that bizarreness seems to occur more frequently starting from 5 to 6 years of age than in dreams of younger children (4,5,17, 22,24).

The results of this study and those of previous literature show that the earliest forms of dreaming are not bizarre. I have analyzed the implications of this solid data for theories on dream bizarreness elsewhere (30,31).

Particularly, I point out that the non-bizarre nature of children's dreams refutes the "activation-synthesis" hypothesis that bizarreness is a constant formal property of all dreams merely due to its physiological substratum (random PGO-ponto-geniculo-occipital activity and aminergic demodulation of the brain) (e.g., 32-33). Hobson's group also found that children's dreams (at age 4-5) are not bizarre, showing that 66% (n= 27/41) of home-collected dreams did not contain bizarre elements (15,p.38), but, quite surprisingly, no implications of this finding were elaborated in their own theory of dream bizarreness (34,p. 802).

The non-bizarre nature of children's dreams is instead more in line with the cognitive and psychoanalytic approaches, according to which dream bizarreness seems to occur more frequently starting from 5 to 6 years of age and is affected by cognitive and personality factors of growth (1, 4; see also 7,22,30).

In conclusion, the study of dream bizarreness can receive new insight from the research on those forms of dreams which, for reason still unclear, do not show the presence of bizarreness, as those of preschool children but also childish or infantile dreams of adults (e.g.,35).

Finally, we note that more unrealistic dreams were only noticed among children

suffering from emotional disturbances (36), as it happens among maladjusted adults (e.g., 37, for review see 30). From this viewpoint the degree of dream bizarreness might turn out to be an important index of dreamer maladjustment for clinicians (37).

General themes of dreams

In Foulkes' view, children's REM dreams at ages 3 to 5 reproduce "... familiar pieces of the child's everyday world" (4,p.67). The qualitative analysis of general themes of children's dreams collected in this study confirms this indication. In fact, most of these show themes about everyday experience of child life.

Unlike in Foulkes' data, we have observed several examples of clear wish-fulfillment dreams. This is an unexpected observation because in this study we have no specific information on the children's everyday experience. Wish-fulfillment dreams are frequently detectable with precision only in studies prepared on this specific information (5,17,38-39).

Dream setting

According to previous studies, QSEE data show that the most frequent settings in children's dreams are "home" and "school" (all ages) (15,26,40).

Unlike in previous studies, where there was no significant difference between age groups, in this sample we have found more "home settings" and less "school settings" in children aged 6 to 8 than in younger children.

One possible explanation for this difference is that parents of younger children are very interested in what happens to their children at school, and this may have put them in the condition of overscoring the presence of a "school setting" in the dream content.

QSEE data are also quite consistent with data on REM dream contents. In these dreams, the most frequent settings were

"home" (17% of REM dreams, 3-5 year-olds) "recreational" (10%, 3-5 year-olds) and "vague" settings (32%, 3-5 year-olds). Unlike QSEE data in REM dreams, "school settings" were scarcely observed, "vague" settings decreased with age (3-5 year-olds vs. 5-7 year-olds) and "recreational" settings were significantly more present in the dreams of the oldest children.

Dream characters

According to previous studies ("school-collected dreams") the most frequent characters in dreams (age 3-8) are respectively "family members", "animal characters" and "known child" (26,40).

For examples, Colace & Tuci (40) found "family members" in 37% of dreams, "animal characters" in 23% and "known child" in 6% (4-6 year-olds). Colace (26) also found that the most frequent characters in dreams are "family members" (in 53% of dreams) and "animal characters" (36%) (3 to 7 year-olds) but he found more fantastic/TV characters than "known characters" in contrast with QSEE data. A higher "animal characters" percentage was also found in Domhoff and Hall's studies as cited by Domhoff (21) (27% of all characters in dreams at ages 2-6) where dreams were collected by teachers in home, nursery school, and school setting, and in other studies that used a similar methodology (presence of "animal characters" in 39% of dreams at ages 4-6) (41-42).

QSEE data are quite consistent with the home based study of Resnick et al. (15). These authors found that in the dream reports of children aged 4-5 and 8-10 the most frequent characters were "family members" (30% of characters identified), followed by "known child" (25%) and "known adult" (12%). Conversely, in home dreams "animal characters" and "TV characters" were less present (9%).

While REM dreams (4) are similar to QSEE dreams in the percentage of "animal

characters", they show a small number of "family members" and "known children".

According to previous studies, QSEE data show no significant difference between age groups regards to characters ("animals", "known children" "familiar characters" and "TV characters") (4,15,40,26).

Self-representation

Previous studies based on home-collected dreams and school-collected dreams reported that active self-representation is predominant in dreams, that is, in about 70-80% of dreams already at 3-7 years of age (15,43,44). For example, Colace et al. (44) analyzed 133 dream reports (25 home-collected dreams, and 108 school-collected dreams) of 117 children aged 3-7 and found that 90 (68%) of these showed an active participant self-representation (i.e., there was an explicit statement of presence and/or action in the dream scene), 12 (9%) showed a "passive-observer" self representation (i.e., the children reported that they were in the dream scene but merely as observers) and 31 (23%) an absence of self representation in dream reports (i.e., the dreamer was not present in the dream). Resnick et al. (15) analyzed home-collected dreams reported by children (aged 4-5) and found active self representation in 85% of them.

The data obtained with QSEE questionnaire confirm the solidity of these previous indications. Younger children show an ability to actively represent themselves in the dream narratives.

There still is a traditional discrepancy between dreams collected at home and at school settings and those recalled directly upon REM awakenings (sleep laboratory setting). Indeed, REM dreams show a lack of active self-representation until age 7 (4,8). A few hypotheses may be offered to attempt to explain these conflicting data. First, in Foulkes' view, several differences between REM dreams and home-collected dreams (e.g., length) are due to selective recall in the

dreams collected at home; in other words, dreams collected upon REM awakening would be a more representative sample of dreaming. Although this hypothesis seems plausible, it still has to prove its specific validity for the differences observed in self-representation. A second possible explanation may relate to certain differences in the criteria adopted to measure self-representation among the above-mentioned studies; from this viewpoint, application of the same measure of self-representation by the same evaluators to two groups of dreams (REM dreams and home-collected dreams) may be quite useful. Besides, it is possible that a qualitative-descriptive analysis of the modalities of self-representation may contribute to our understanding of how the representation of self in dreams develops in childhood.

Social interaction of dreamer

QSEE results are consistent with data on children's dreams collected in school setting that show high frequency of social interaction (45%, 40; 41%, 26) at 5-6 years of age. However, here we observed that the social interaction of dreamers was frequent also at 3-4 years of age.

In Foulkes' study on REM dreams at ages 3 to 5 year "social interactions" were rare (4-6%). The presence of this content in dreams starts to be seen only from 5-7 years and up (4).

Aggressive action

The data obtained from QSEE questionnaires show scarce presence of aggressions in children's dreams. These results agree with our qualitative analysis of dream transcription, that suggests a moderate presence of "anxious themes".

The data are consistent with Foulkes' observations about the scarce presence of aggression in children's REM dreams (4). Hall & Domhoff's studies as cited in Domhoff (21) found more aggression events

(i.e., attacks by animals) and misfortune than in Foulkes' data (REM dreams) and in adult's dreams. However, Domhoff claims that these findings may be biased by Hall's selective sample of dreams (i.e., dreams were collected by teachers in home and school settings) and by the difference between the coding systems used by Hall and Foulkes. Domhoff (21) concludes that children dreams actually show less aggression than in Hall's results (see also 45).

Previous studies have found that in children anxious dreams and nightmares, where aggressiveness is more likely to be present, occur more frequently after traumas or stressful events (e.g., school problems) and in children with highly sensitive personality (i.e., "thin boundaries structure") (46-48). Furthermore, a recent study with children has shown how traumatic events are associated with dreams characterized by unpleasant atmosphere (49). From this viewpoint, we may assume that a greater presence of aggressive actions in normal dreams may also be correlated with particularly stressful events, and that, vice-versa, these actions are less present in normal conditions.

Evident connection with recent real-life event

Despite the difficulty of the task (i.e., the time elapsed between compilation of questionnaire and dream experiences) half of the parents were able to recognize a clear connection between the content of the dream and a recent real-life event occurred to the dreamer. This observation matches with Foulkes' finding that REM dreams of children report directly pieces of children's ordinary lives (see above). At the same time it is consistent with observations on the simplicity and clarity of these dreams.

Generally the recent real-life event connected with a dream is rather pleasant

than unpleasant. Further investigation on this topic is needed in order to clarify why young children's dreams are more frequently connected with pleasant events than older children's dreams.

CONCLUSIONS

Studies on children's dreams have proved to be useful for several aspects of dream research and theory. However, researches in this area are difficult to carry out, therefore very few studies on children's dreaming were made in 50 years of dream research, as compared to studies on adult dreams.

The questionnaire employed in this study proved to be a useful tool to collect data on children's dreaming in a relatively simple and cost-effective way from a large group of subjects. Furthermore, the indications obtained on child dreaming matched with several data from studies that adopted more conventional dream collection methods. Much of the well-established knowledge on children's dreams (e.g., short length, presence of animal characters and so on) received support here from the use of a large sample of children/dreams, that allowed for a more certain generalization. The data obtained here are also consistent with some characteristics of REM dreams in children and at the same time confirm certain known differences between these and home-collected and school-collected dreams, more similar to QSEE dreams, such as, for example, in self-representation or presence of family members.

Of course, the use of questionnaires of this kind in investigating childhood dreaming cannot and should not replace the other conventional dream collection methods. Questionnaires may stand side by side with these methodologies allowing a valid opportunity of cross-checking their results.

Appendix A

QSEE Questionnaire:

Selection of items about children's dreaming, particularly on their latest dreams

Does your child ask you questions about dreams?

- Often - Sometimes - Rarely - Never

Is your child interested in his/her dreams?

- Very highly - Highly - Enough - Little - Very little - Not at all

How many dreams has your child reported in the previous month? _____

Can you remember the last dream your child has reported?

- Yes, well - Yes, well enough - No

When did he/she report this dream?

- Waking up in the morning - During the same day - In another moment

Was the dream reported

- Spontaneously - On demand - Uncertain

While the child was reporting his/her dream, did you feel he/she was

- Anxious - Quiet - Happy - Gloomy

About this last dream reported:

Your child reported this dream using

- Brief sentences - Brief and elaborated sentences - A short story - A long story - A long and elaborated story

Which was the main setting of the dream?

- Home - School - Recreational environment - Other _____ - Vague

Were there animal characters in the dream?

- Yes - No - Uncertain

Were there TV characters (cartoons, famous characters, etc.) in the dream?

- Yes - No - Uncertain

Were there family members in the dream (e.g., parents, brothers, sisters, grandparents etc.)?

- Yes - No - Uncertain

Were there other children known to your child in the dream?

- Yes - No - Uncertain

In the dream your child was:

- The protagonist - A secondary character - Not present - Uncertain

Did your child interact with other people in the dream (e.g. speaking, playing, etc.)?

- Yes - No - Uncertain

Were there violent and aggressive actions in the dream?

- Yes - No - Uncertain

The content of the dream (e.g., characters, settings) was:

- Ordinary and realistic - Realistic, but with some strange elements - Strange and improbable

Please describe the dream the answers you have provided above refer to:

Did the dream content show evident connections with recent real-life events occurred to the child?

- Yes - No - Uncertain

(If answer is Yes) **These events were mostly**

- Pleasant - Neutral - Unpleasant

Please describe these events and their connection with the dream

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