

7 The Dream Reports of Preadolescents and Adolescents

The results of both the laboratory dream studies and the studies of waking cognitive development explain why there are few studies of dream content in early childhood, whether inside or outside a laboratory setting. Young children do not dream frequently or with any complexity, and do not seem to understand the origins of their dreams. The first systematic attempt to collect dream reports from children ages 4–7, carried out 100 years ago, concluded that very young children have “great difficulty” in “separating the dreaming from the waking element” (Kimmins, 1920/1937, p. 53). More generally, these findings may explain why the results of the few non-lab interview studies of young children’s dreams often differ in their results and have been of limited value.

Studies of dream content based upon reports from late childhood and adolescence, which is also the time period in which the default network begins to become more adultlike, have shown more promise. As demonstrated in both of the longitudinal studies of older children and adolescents, participants between the ages of 9 and 15, and especially girls, are almost adultlike dreamers and are able to provide lengthy accounts of their dreams (Foulkes, 1982; Strauch, 2005; Strauch & Lederbogen, 1999). However, studies necessitating several visits to a sleep-dream laboratory are expensive and difficult to carry out. There are also problems in collecting dream reports from older children and adolescents in nonlaboratory studies, such as obtaining parental and school consent, gaining the cooperation of participants, maintaining high levels of participant motivation, and finding ways to encourage participants to voice record or write complete reports. This chapter therefore makes greater use of two underutilized non-lab methods of obtaining large and thorough samples of dream reports.

These studies provide several substantive findings consistent with the neurocognitive theory of dreaming.

Although the findings on dream content from the cohort ages 9–15 in the Laramie longitudinal study are noted at one or two points in this chapter, it begins with a primary focus on the lab and nonlab reports collected in the Zurich study for several reasons (Strauch, 2005; Strauch & Lederbogen, 1999). It then relies on Hall/Van de Castle (HVdC) findings from dream reports collected by means of the Most Recent Dream (MRD) method. This method, which has not been mentioned up to this point in the book, involves asking willing anonymous participants in a group setting to write down and date the most recent dream they can remember. It was originally created for use with adults (Domhoff, 1996, p. 67; Hartmann, Elkin, & Garg, 1991). It has been employed to collect samples of dream reports from college students in Hong Kong, Iran, South Africa, and Wales, as well as from animal rights activists in the United States and the elderly in Switzerland (Lewis, 2008; Malcolm-Smith & Solms, 2004; Malcolm-Smith, Solms, Turnbull, & Tredoux, 2008b; Mazandarani, Aguilar-Vafaie, & Domhoff, 2013; Strauch, 2003; Yu, 2008).

More importantly in terms of this chapter, the MRD method has proven to have many advantages in studying preadolescent and adolescent students. It overcomes the difficulties of collecting one-week or two-week diaries. Even adult participants, who initially agree to write down dream reports for a one-week or two-week period, very frequently turn in far fewer, which are often hasty and incomplete as well. In the case of teenagers, this point also has been demonstrated in two dissertations that focused on the dream reports of high-school students (Buckley, 1970; Howard, 1978).

As shown in studies in Greece, Italy, Spain, and the United States, it is far better to ask large groups of students in late childhood and adolescence to write down the most recent dream they can remember (Avila-White, Schneider, & Domhoff, 1999; Crugnola, Maggiolini, Caprin, Martini, & Giudici, 2008; Karagianni, Papadopoulou, Kallini, Dadatsi, & Abatzoglou, 2013; Oberst, Charles, & Chamarro, 2005; Saline, 1999). The collection of MRDs often does not require permissions beyond a classroom teacher because the dream reports are voluntary and anonymous, and the students need only 20 to 30 minutes to write their reports. Moreover, the MRD method gives the young participants greater autonomy and privacy than may be possible when keeping a dream diary at home, where parents may

influence the participants. There also may be a lack of privacy for writing down a dream report during free time and lunch breaks at school (Saline, 1999, p. 173). As in the case of the laboratory studies, the results with this method lead to the conclusion that girls provide more useful samples than do boys in terms of the frequency of their participation and the length of their dream reports.

In addition, the usefulness of dream series in studying this age group also is demonstrated in this chapter. It does so through analyses of four dream series, which were kept for varying amounts of time for varying reasons, beginning in adolescence. Two of them are very extensive because they began during middle school and extend into young adulthood. The findings with these four dream series are based on HVdC codings, generic word strings, and individually tailored word strings. They establish that both consistency and continuity are present in individual dream series by age 15 at the latest, shortly after the default network and most cognitive abilities are almost fully adultlike.

Finally, and in spite of the general criticisms of two-week dream diaries, this chapter nonetheless makes use of an excellent set of two-week dream diaries that were collected from highly motivated girls in the fifth through eighth grades at a private American school in the 1990s.

Lab and Nonlab Findings in the Zurich Longitudinal Study

Developmental psychologist and dream researcher Inge Strauch's (2004, 2005; Strauch & Lederbogen, 1999) longitudinal study of 24 Swiss children at the University of Zurich, based on 12 girls and 12 boys at ages 9–11, 11–13, and 13–15, included both lab and nonlab conditions. It provides solid substantive results of theoretical importance, as well as a good baseline for discussing findings with nonlab dream reports. As also mentioned in chapter 6, girls in this study recalled dreams from 77% of the REM awakenings at ages 9–11, whereas boys reported dreams from only 58% of the awakenings. The girls remained at this high level of recall in the second and third stages of the study but did not reach the 90% level of the young Swiss adults serving as a comparison group. The boys reached the second-year level of the girls' recall in the final year of the study (Strauch, 2005, p. 157, fig. 1). Due to their higher recall frequency, the girls contributed 303 of the 551 REM reports and the boys contributed 248. These findings

on gender differences in the frequency of reporting replicate similar findings in both cohorts in the Laramie longitudinal study (Foulkes, 1982). The dream reports on which this study is based can be found on DreamBank.net, separated into lab and nonlab dreams, under the name “Swiss children.” They are in the original German that the children spoke and wrote.

The content findings from the Zurich and Laramie longitudinal studies of participants ages 9–15 are generally similar in terms of increasing numbers of social interactions and in increasingly sophisticated dream scenarios, and both studies show the girls were generally ahead of the boys in the complexity of their dream reports (Strauch, 2005, pp. 163, 166). However, detailed comparisons cannot be made in several instances because the Laramie study used rating scales created especially for that study. The Zurich study therefore has greater usefulness on dream-content issues for the purposes of this chapter. In addition to larger sample sizes, its basic content analyses utilized HVdC coding categories, which makes it possible to draw comparisons with the several studies in this chapter that also deploy HVdC categories. In addition, as a replication and extension study, the Zurich study makes use of several additional scales, which add new understandings on a variety of topics. These scales provide strong indications that the dream contents of children by ages 11–13 are becoming similar to those of young adults.

Using a scale for determining the primary activity and setting in each dream report, the study found that being around the house, going from place to place, and playing sports (albeit different sports for the girls and boys) contributed equally in accounting for 60% of the dream reports. Another 10% occurred in a school setting, usually involving a recreational or other nonclassroom setting. This finding is in line with earlier findings with Swiss adults: dream reports more frequently involve social and recreational settings and activities than they do focused work settings (Strauch & Meier, 1996). Still another 10% of the reports in the longitudinal study of preadolescents and adolescents involved highly unusual settings that were part of what the researcher described as “adventurous” dreams (Strauch, 2005, p. 161). The final 20% of the dream reports could not be classified in terms of a major setting and activity.

Based on a scale for categorizing dream reports as “realistic” if they “approximated experiences that happen in waking life,” “inventive” if they “combined familiar waking experience” in a creative manner, and “unrealistic”

if they “lacked any relation to the waking world,” the researcher found that about 40% were realistic at each age period. However, inventive dream reports increased from 29% at ages 9–11 to 44% at ages 13–15. Conversely, unusual reports declined from 31% to 15% from the first to the third stages of the study (Strauch, 2005, pp. 160–162). The researcher also examined self-involvement in the dream reports at each of the age periods by determining the percentage of speech acts in which the dreamer was a speaker. The figure rose from 17% at ages 9–11 to 39% at ages 13–15, which was still below the adult figure of 47% (Strauch, 2005, p. 164, fig. 4). Both sets of comparisons demonstrate developmental trends concerning the nature of dream content.

In terms of character categories, both girls and boys showed consistency at all three age periods for most character categories, including the usual gender differences on the Male/Female Percent. In addition, the Animal Percent for boys declined to the low levels found in girls and in adults. The percentage of dream reports with at least one aggression increased from 18% to 31% for the girls and fluctuated between 24% and 28% for the boys. However, the percentage of dream reports with at least one friendliness fluctuated slightly, from 28% to 20% to 23% for the girls and increased gradually for the boys from 16% to 18% to 24% (Strauch, 2005, p. 159). Both girls and boys were more likely to be victims than aggressors in aggressive interactions (Strauch, 2005, p. 160). Some of these findings are similar to those with adults, but the findings on aggressions and friendliness are not yet entirely adultlike.

The Zurich study added to past findings on young dreamers by using HVdC categories to compare social interactions between the dreamer and adults with those involving peers. As a result, it discovered the difference between girls and boys on the Male Female Percent was even more pronounced when only individual peers and groups of peers are considered. The researchers concluded the girls clearly preferred same-sex peers at ages 9–13, although they became a little more inclined to include boys in their dreams at ages 13–15. In a similar fashion, the boys interacted almost exclusively with their male peers. Both girls and boys were more likely to be criticized or punished by adults, especially men, but they were just as likely to be aggressors as victims in interacting with their peers. They were also more likely to be befriended by adult men and women than to initiate a friendly interaction, but they were as likely to initiate or receive friendship

with peers (Strauch, 2005, p. 160). These findings parallel those in the Wyoming longitudinal study for this age group using a different coding system (Foulkes, 1982, chaps. 6–8). As shown in both studies, these differences very likely portray the way in which older children and adolescents conceive of and interact with the people in their waking lives and thereby demonstrate continuity between dreaming and waking thought for this age group.

The Zurich study also included a very large collection of nonlab dream reports from the same participants. They were given five tape cassettes at the end of each of the three years of laboratory participation and then instructed to mail the dream reports they voice-recorded to the lab. The 299 nonlab dream reports, 164 from girls and 135 from boys, were 91% of what the researchers expected from the girls but only 57% of what they expected from the boys. At ages 13–15, two girls reported only two dreams apiece and two boys did not send in any dream reports (Strauch & Lederbogen, 1999, p. 155). The researcher concluded that lack of motivation and a reported increase in feelings of fatigue were the main reasons for the especially low rates of reporting in the fifth and final year. She further concluded that nonlab studies of teenagers “should be restricted to highly motivated and cooperative participants with high rates of dream recall” (Strauch, 2005, p. 168). The suboptimal response to the request for brief dream diaries from outside the lab setting, even though the participants were being paid, is the best-controlled evidence in relation to the problems that usually arise in asking either adolescents or adults to keep a one-week or two-week dream diary.

The lab and nonlab dream reports in the Zurich study were very similar in content for most HVdC categories. Both samples of dream reports showed the same age changes and gender differences. However, the nonlab dream reports “showed higher frequencies for some social interaction categories”; this generalization includes higher percentages and rates for aggression indicators (Strauch, 2005, pp. 167–168). These results replicate the findings on lab and nonlab dream reports in adult studies that use the same participants in both conditions (Domhoff & Schneider, 1999; Weisz & Foulkes, 1970) and as discussed at the outset of chapter 3.

The content findings in the Laramie and Zurich longitudinal studies serve three important purposes in terms of understanding the development of dreaming and in building a neurocognitive theory of dreaming. Theoretically, they support the idea that the maturation of the default network

between ages 9 and 11 is very likely a key turning point in the development of dreaming, but also that further maturation of the default network and further cognitive development is occurring in adolescence. Methodologically, they provide an anchor point or baseline for comparisons with results from exclusively nonlab studies of dream reports. However, the differences between lab and nonlab dream reports in the Zurich study during this age period also serve as a reminder on the likely bias in nonlab studies toward dream reports with greater salience, in this case related to the frequency of aggression in dream reports. Finally, the Zurich study provides new evidence for continuity in what people dream about and what they think about in waking life by the middle teenage years.

A Dream-Diary Study of Preadolescents and Adolescents

As the lab and nonlab comparison in the Zurich longitudinal study makes clear once again, nonlab dream reports are difficult to collect from preadolescents and adolescents, so only highly motivated and cooperative participants should be considered for dream-diary studies. In terms of those criteria, 45 volunteer participants who attended a private school for high-achieving girls in the San Francisco Bay Area provided a good sample of two-week dream diaries (Latta, 1998). They were not a representative sample of girls their age in terms of demographic and socioeconomic variables, but they demonstrate what is possible when children have the environmental support to be successful in their schoolwork.

The participants used in this analysis, who were in the fifth through the eighth grades, first wrote down as much of the recalled dream as they could remember and then explained who the characters were and any thoughts or feelings they had in relation to the dream report. They were asked to record as many dreams as they could remember, but at the same time they were reassured that no set number of dream reports was necessary. These instructions and reassurances led to varying numbers of dream reports from each participant, which suggests there were once again individual differences in dream recall (Latta, 1998, p. 91). The original study also included six girls in the fourth grade who provided only 36 brief reports as well as 10 girls in the ninth grade who were asked to contribute only four dream reports each. Neither the fourth graders nor the ninth graders are included in this analysis because they provided too few dream reports. All of these dream reports,

including those of the fourth and ninth graders, can be found on Dream-Bank.net under the pseudonym Bay Area Girls.

In all, the sample consists of 312 dream reports from the 45 participants. The year-by-year sample sizes varied from 120 reports contributed by 14 of the fifth graders, to 55 reports from 11 of the eighth graders. However, they are sufficient at each grade level to detect any general age trends, as displayed in table 7.1. As the table also conveys, the findings for the fifth graders were significantly higher than the HVdC norms for women on the at least one aggression percent, the at least one friendliness percent, and the Physical Aggression Percent. The at least one aggression percent remains higher than the norms for the sixth graders, and the Physical Aggression Percent remained higher for the sixth and seventh graders. The Male/Female Percent is lower for the fifth graders and the eighth graders, but in general the eighth graders are similar to the women's norms. Methodologically, these results demonstrate that representative samples of dream content can be collected under the right conditions from girls in middle schools. Empirically, the results add to the evidence that dream content is close to adultlike at ages 13–14.

Table 7.1

Content of the Bay Area Girls' dream reports at grades 5, 6, 7, and 8, compared to the Hall/Van de Castle female norms

	Grade				Female norms
	5	6	7	8	
<i>Characters</i>					
Male/Female %	38*	48	46	37*	48
Friends %	34	38	35	44	37
<i>Social interactions</i>					
Aggression/Friendliness %	49	47	52	58	51
Befriender %	39	48	50	40	47
Aggressor %	38	43	25	27	33
Physical Aggression %	57**	67**	56**	47	34
<i>Percentage of dreams with at least one:</i>					
Aggression	33*	31*	37	36	44
Friendliness	31*	37	39	35	42

* $p < 0.05$; ** $p < 0.01$.

MRD Findings with Children and Adolescents

The possible usefulness of MRDs with children in late childhood was examined in a study of third (ages 8–9), fourth (ages 9–10), and fifth (ages 10–11) graders in two private elementary schools on the Berkeley–Oakland side of the Bay Area in California (Saline, 1999, p. 175). The study is based on 30 girls and 32 boys. Their parents were highly educated (e.g., 16% of their mothers had doctoral degrees, another 32% had an M.A., and 40% had a B.A. as their highest degree), so the sample is not representative of American children. The study revealed the reports from the third and fourth graders were brief, vaguely dated, or were said to have occurred “long ago,” all of which suggested it is highly unlikely they were recent dreams (Saline, 1999, p. 175). By the fifth grade, however, the MRD sample showed more promise, especially in the case of girls. This finding led the researcher to the conclusion that studies of fifth graders are feasible, “especially for girls” (Saline, 1999, p. 178). This conclusion is supported by the findings with fifth graders in the dream-diary study of the Bay Area girls.

In terms of the recency of the reports, all but one of 19 reports from girls in the fifth grade were from within two or three weeks of the date of collection and many were from the past few days. Similarly, their reports were twice as long as the reports from girls in the fourth grade. They had a median word length of 106, which compares very favorably with the findings in the Laramie longitudinal study for girls in that age group (Foulkes, 1982, p. 328). Both of these results are also consistent with the results in the two-week diary study of the Bay Area Girls. More generally, the fact that dream reports can be collected at this age by means of either dream diaries or the MRD method fits with Foulkes’s (1982, pp. 74, 217) conclusion that children ages 9–11 have the same dream recall frequency and median report lengths as they do at ages 11–13 and 13–15.

The feasibility of collecting MRDs with fifth graders was demonstrated for a second time in schools in Milan a few years later with 182 children, 102 girls and 80 boys. They provided MRDs twice toward the end of the school year, April and June, when they ranged in age from 10 to 11.5. The results were “quite stable” from April to June, which suggests the reliability of the method (Crugnola et al., 2008, pp. 212–213). Dream reports from the two samples with 50 words or more were used for the content analysis, leading to a combined sample of 187 dream reports from girls, which is 82% of the reports provided by the girls, and 128 from boys, which is only

62% of the reports provided by the boys (Crugnola et al., 2008, p. 205). The authors conclude that their work “confirms the possibility of using the Most Recent Dream Method” with children ages 10–11, “particularly for girls” (Crugnola et al., 2008, p. 214).

As might be expected from the promising results with fifth graders, excellent MRD reports can be obtained from children in the sixth grade and higher. For example, in a large-scale study of seventh graders in 16 classrooms in a suburban middle school in Santa Cruz County in California, it was possible to collect MRDs from 83% of the girls and 60% of the boys. This level of return led to a sample of 162 reports from girls and 110 from boys. Based on careful observation of when the participants finished their reports, most of them needed about 20–25 minutes to complete their dream reports. Several children turned in a blank sheet or wrote that they could not recall a dream, which is a good indication that the anonymity and instructions reduced the demand characteristics of the study (Avila-White et al., 1999).

Once again, there were gender differences on report lengths: 92.5% of the girls’ reports included 50 or more words, with a median word length of 125. Only 74.3% of boys’ reports were this length or greater, and the median word length of 89 for boys was 36 words less than the median for those provided by girls. These figures are roughly comparable to the mean of 100 for girls and 94.9 for boys at ages 11–13 in the dream diaries in the Zurich longitudinal study at the same age (Strauch & Lederbogen, 1999, p. 155). In addition, the results were similar to those in an unpublished pilot study in different schools in the same suburban area in Santa Cruz County. This was especially the case for the girls, except for somewhat less friendliness and slightly more aggression in the final study (see Avila-White et al., 1999, p. 166, table 1, for a comparison of the two studies, and Domhoff, 1996, pp. 95–96, for a one-paragraph summary of the pilot study with 80 girls and 64 boys).

Then, too, confidence in the published results is bolstered by their similarity to the nonlab findings in the Zurich study at ages 12–13 in terms of the Animal Percent, Male/Female Percent, and Aggressor Percent for both girls and boys (Strauch & Lederbogen, 1999). In a comparison with the HVdC norms, the Santa Cruz girls and boys differed in the same way women and men differ on several indicators, but both girls and boys had a higher Aggression/Character Index (A/C Index) and Physical Aggression

Percent. The boys differed even more from the men than the girls did from the women (Avila-White et al., 1999, p. 167, table 2).

A study employing the MRD method with 45 girls and 45 boys in several schools in Barcelona in late childhood and adolescence replicated the finding that the method is feasible with preadolescents ages 11–12. It also documented the method's usefulness at ages 14–15 and 17–18 for the first time (Oberst et al., 2005). Although the sample sizes at each age are small, the girls and boys at ages 11–12 were more often victims in aggressive interactions than the two older groups and the boys had a higher Male/Female Percent and more aggressive content. Both of these results are similar to those in the Santa Cruz County study. The results at ages 17–18 were close to those in the HVdC norms, although there were fairly large differences on Aggressor Percent and Physical Aggression Percent (Oberst et al., 2005, p. 175).

The results from the largest and most far-reaching MRD study of children, carried out in Thessaloniki with 756 children and adolescents ages 8–18, provide the most substantial findings to date. This study demonstrates the full potential of the method with adolescents when there are large sample sizes, thanks to the cooperation of the school system in the city and surrounding areas (Karagianni et al., 2013). The sample consisted of 273 children ages 8–12 (150 girls and 123 boys) and 483 adolescents ages 13–18 (278 girls and 205 boys). The sample is very likely representative of the children in that city, based on the diversity of the schools (center city, suburbs, and rural areas), along with the size of the sample and the breadth of the age range (Karagianni et al., 2013, p. 92). The girls were higher than the boys on familiar characters, family members, familiar settings, and indoor settings, which parallels the HVdC normative findings. The boys were higher on the Male/Female Percent, Aggression/Friendliness Percent, Physical Aggression Percent, and A/C Index, which also parallels the HVdC normative findings. In terms of age, the girls started out higher on familiar characters, family members, animals, and Physical Aggression Percent, and lower on dreams with at least one friendliness, and then moved toward the norms. The boys started out higher on aggression indicators and lower on friendliness, and then moved toward the normative figures for men. The full results for the girls in both age groups, along with HVdC norms for women, are presented in table 7.2.

As the Thessaloniki research team states on the basis of their detailed literature review, their results confirm similar findings in earlier MRD studies

Table 7.2

The most recent dreams of Greek girls ages 8–12 and 13–18, compared with the HVdC normative findings for women

	Girls 8–12	Girls 13–18	HVdC norms
<i>Characters</i>			
Male/Female %	45	52	48
Friends %	22	38	37
<i>Social interactions</i>			
Aggression/friendliness %	59	56	51
Befriender %	40	36	47
Aggressor %	16	13	33
Physical Aggression %	75	65	34
A/C Index	.25	.21	.24
F/C Index	.13	.13	.22
<i>Percentage of dreams with at least one:</i>			
Aggression	42	34	44
Friendliness	28	26	42

with nonadult participants. They do so on gender and age differences relating to the indicators for Animal Percent, Male/Female Percent, Familiarity Percent, Family Percent, and Friends Percent, as well as for the A/C Index, the Aggression/Friendliness Percent, the Physical Aggression Percent, and the Aggressor Percent (Karagianni et al., 2013, pp. 94–95). The researchers conclude that their findings also are similar to many of those in the Swiss longitudinal study (Karagianni et al., 2013, pp. 94–95). They further suggest that dream content “expresses the same interests, thoughts, and concerns children have in waking life.” In addition, they add that “children in Europe and the United States seem to have similar concerns as well as some differences that may relate to cultural divergences” (Karagianni et al., 2013, p. 96). If they are right, then they have contributed impressive new findings and conclusions for children and adolescents from ages 8 to 18, which may be all the more valuable because their results are similar to the findings and conclusions concerning adult dream reports, as discussed in chapter 3.

The Thessaloniki researchers further conclude that dream contents and waking thoughts express the same personal concerns and interests. Their

conclusion gains credibility on the basis of waking studies of gender similarities and differences. Although there are in fact relatively few waking gender differences, meta-analyses of children find boys are higher in activity level, self-assertion (including a striving for dominance), and direct aggression (physical and verbal). However, the effect sizes are often small or modest, except in the case of physical aggression (Hyde, 2014; Leaper, 2013; Leaper & Farkas, 2015). The developmental changes are also similar to those in cross-national studies of children and adolescents (Achenbach & Rescorla, 2007; Tremblay, Hartup, & Archer, 2007).

Based on the generally similar findings with children from four different countries, and the similarities with the results of studies using dream reports collected in laboratory settings and by means of a dream diary, the feasibility and usefulness of the MRD methodology receives further support. The results of these MRD studies also provide new evidence that dreaming has a developmental trajectory. In conjunction with the results from laboratory and dream diary studies, the MRD results suggest that studies that focus on girls may lead to larger and more complete samples, which may be more useful for extending and refining the scientific understanding of the development of dreaming from the preschool years to late adolescence.

Consistency and Continuity in Four Dream Series

Building on the evidence derived from the representative samples of dream content from the fifth grade through high school in both lab and nonlab settings, it is also possible to make use of the very few adolescent dream series available from what is almost certainly a miniscule pool of teenage dream journals kept for more than a month or two. The similarity of the results with just four teen dream series (three from girls and one from a boy) suggests that consistency and continuity are present by age 15 and may begin as young as age 13–14. Moreover, there is very good evidence that this consistency and continuity is stable into young adulthood.

Continuity in Bea's Dream Reports at Age 15

Bea wrote down every dream she recalled between ages 14 years, 9 months and 15 years, 11 months, for a total of 189 dream reports. The 139 continuous dream reports containing 50 or more words were coded with HVdC

categories, which provided information for 19 content elements. The Wald-Wolfowitz runs test for autocorrelation indicated no statistically significant results at the .05 level for any of those indicators (Domhoff & Schneider, 2015a, pp. 73–74). One of her three family members (father, mother, and a younger brother) appeared in 39.6% of her dream reports and her teenage friends and acquaintances accounted for half of all the human characters in her dream reports. The few known adults, aside from her parents, were primarily her teachers (Domhoff, 2018a, pp. 146).

Bea was high on a character category that is usually minor in adult dreams, the “Dead and Imaginary Percent.” She sometimes dreamed that she was interacting with fictional characters in her favorite television shows or that a prominent person, such as a movie star, had died. However, the main reason for this high figure was her frequent mention of—and sometimes direct involvement with—key characters in the Harry Potter books, which she and many other teenagers were reading passionately at the time she was in high school. These dream reports can be called up on DreamBank .net by marking the Bea series and searching for this personalized string: Potter | Weasley | Hermione | Voldemort | Quidditch | Gryffindor | Ravenclaw | Hufflepuff | Slytherin | Hogwarts | Dumbledore (Domhoff, 2018a, pp. 146–148).

Bea also was very high on at least one friendliness, and also high on the Friendliness/Character Index (F/C Index). These results are consistent with what she later reported about her interests and interactions in waking life during high school. She was totally preoccupied with both her female and male friends in high school, and especially her teammates on sports teams, which is consistent with the findings in the Zurich longitudinal study (Strauch, 2005). Bea’s dream reports had more friendliness than aggression, which is atypical, but her percentage of dream reports with at least one misfortune was also very high at 59 ($h = .52, p = .01$), so her dream reports were not universally positive in their content (Domhoff, 2018a, pp. 145, 147, fig. 44). She said that she often felt upset by the dreams she remembered upon awakening, even though they contained many friends and a great many friendly interactions. She also said she worried about many things in waking life (see Bulkeley, 2012, for a study using generic word strings, which also included Bea’s 87 high school and college dream reports, and Domhoff, 2018a, pp. 145–151 for full details on the HVdC findings on Bea’s dream reports at ages 14–15).

Izzy and Jasmine: Consistency and Continuity from the Teens to Young Adulthood

The findings on continuity in the Bea series were replicated with two much longer dream series that extend from ages 12–13 into the dreamers' mid-20s. The young women who contributed these dream series were born and raised in different countries in the English-speaking world. They differ in age by six years and they do not know each other. In addition, both participants were willing to answer questions that were asked after the quantitative analyses were completed. At that point they were queried via email about the important people in their lives and their thoughts about these people, as well as about their personal interests, avocations, and preoccupations. The analyses of these two dream series are presented in considerable detail for both methodological and theoretical reasons, including the fact that they provide the best possible case for the claim of consistency and continuity by age 15 and perhaps by ages 13–14.

The study of these two dream series also best demonstrates the usefulness of individually tailored word strings with dream series at any age level (see Domhoff & Schneider, 2020, for full details on methods and findings, as well as evidence for the authenticity of both series). In addition, the study shows the HVdC normative sample for women can be used for some of the character categories constructed with the word strings. This combination of two methodologies contributes to the usefulness of personally tailored word strings. Further, the conclusions are strengthened by the fact that the two dreamers are very different from each other, and both of them often differ from the HVdC normative women's sample as well. Any vagueness about dates and places in this account is part of the effort to protect the anonymity and respect the privacy of the two participants. However, sequences and time intervals are always maintained. Their dream reports, as well as the individually tailored word strings, are available on Dream-Bank.net for further analyses. The personal word strings and more details on the findings can be found in the detailed published article on these findings (Domhoff & Schneider, 2020, pp. 146–147).

Izzy recorded 4,329 dream reports between the ages of 12 and 25. She was born in the early 1990s and she has a brother who is two years younger. Their parents never married but they lived together until Izzy was about 9 years old and her brother was 7. When their parents separated around the year 2000, Izzy and her brother had rooms in both parents' residences. By

about 2008, when Izzy was 17, she and her brother were living exclusively at their mother's house, along with their mother's partner of the previous seven years. Around 2010 her brother moved in with their father after he was caught stealing money from their mother. In late spring 2013, Izzy moved to another English-speaking country for 14–15 months. When she returned home she lived with her mother and her mother's partner until mid-summer 2016. She then moved into a rented house with three male classmates from a local community college. She had lived there for 4.5 months when her dream series ended for purposes of this analysis.

Jasmine voice-recorded the 664 dream reports in her dream series between the ages of 14 and 25, usually shortly after she awakened on any morning on which she recalled a dream. The recordings were transcribed by an experienced transcriber who had done previous work for DreamBank .net. Jasmine's dream series consists of 39 dream reports from her middle-school years, 268 dream reports from her high-school years, 261 reports as a college student, and, after a four-year hiatus, 96 at ages 24 and 25, when she returned to college and earned an M.A. in education and a teaching credential. (Jasmine's later dream reports from her mid-30s were used in the study of dreams about the pandemic in chapter 4.)

Jasmine's dream series also offered an unusual opportunity because she was born with an atypical form of blindness: optic nerve hypoplasia. Her type of hypoplasia makes it possible for her to recognize people by means of their hairstyle, hair color, and the way they walk (and of course she can recognize their voices because her hearing is normal). She can read 26-point type if it is very close to her face, so she did not rely on Braille growing up. For reading regular-sized print she has a video magnifier, which takes a picture of the document and uses optics to enlarge the image on the screen. For working with her computer she uses text-to-speech and screen-magnifying programs.

Jasmine was born in the mid-1980s and she has lived as an only child with her parents in the same house for most of her life. However, she has two older half-sisters, who are nine and 10 years older, and a half-brother, who is seven years older, from a first marriage by her father. In her early years they lived in the same city as Jasmine but then moved several hours away. She also has an extended family that lives over a thousand miles from her. When Jasmine was younger, her mother took her to visit these relatives for long vacations when school was not in session.

Jasmine attended a regular public high school and graduated in about 2003. After a year of community college she moved to a nearby city and spent close to a year finishing an accelerated program at a technical school. She then lived at home again with her parents and earned a B.A. from a local university in about 2010. After graduation she took a job with a local school for the visually impaired. The school asked her to learn Braille as an essential skill in working with blind youngsters who were not prepared to attend public schools. In this context, she returned to college to earn an M.A. in education and a teaching credential.

The two dream series were initially studied in sets of 200 or 100 dream reports, respectively, as well as by school levels (middle school, high school, and college) and then by one-year age intervals. These analyses demonstrated considerable similarity in the general findings and the same trends with all three types of subset samples. Because age is an important variable in developmental psychology, and in this chapter as well, it therefore is useful for substantive psychological reasons to present the results by age to the degree it is possible.

Since Izzy recorded over 100 dreams for each year except the first, when she was age 12 and documented 52 dreams, little if anything was lost by analyzing her dream reports in sample subsets based on her actual age. However, a school-level approach had to be used in analyzing Jasmine's series to increase sample sizes. This necessity still made it possible to examine her dream reports in relation to the important developmental transitions indicated by the maturational and cognitive changes that mark the differences between middle school, high school, college, and full adulthood.

Izzy: Personally known characters Overall, the most frequent character in Izzy's dream series is her mother, who appears in 34.9% of the dream reports. She is the most frequent character in every year except one, which comes very close to being an example of relative consistency in a dream series. The appearances by Izzy's mother showed two different patterns of developmental consistencies. There was a gradual overall increase in her appearances from ages 12 to age 18, followed by a gradual developmental decline until age 22. There was a relatively small increase in the next year, and then a further decline. Izzy said that her mother is the person she thought about most frequently in waking life through age 22, so her mother's dream appearances provide evidence of both developmental consistency and continuity between the ages of 12 and 22.

Slightly condensing what Izzy said in reply to written questions about the people she thought about the most at different ages, she portrayed her relationship with her mother as “somewhat complicated [before seventh grade]” and as “mellowing out during the year I started writing down my dreams.” She added, “Generally, I didn’t really have any strong feelings towards her, though I did resent her ‘uselessness’ as she was often very late for things or didn’t really seem to listen to my concerns.” Izzy seldom thought about her mother after she rented a house with other students (see Domhoff & Schneider, 2020, p. 149, for further detail). The same patterns of consistency and continuity were found with her brother and father.

Izzy also dreamed consistently about other family members. When her immediate family is combined with the rest of her extended family, 56.3% of her dream reports contained at least one family member, with individual years showing the same two developmental consistencies as found for her immediate family—high points when Izzy was 18 and 19 and the lowest percentages at 24 and 25. Similarly, she dreamed about her friends and acquaintances (26.9% of the dream reports), along with a wide range of people known from school or work (28.3%). When friends, acquaintances, and people from school and work are merged into a list containing all family members, then at least one person she knew personally appeared in 75.9% of her dream reports. This figure is very close to the HVdC normative percentage for women dreamers (76.8%) (Hall & Van de Castle, 1966).

Izzy’s dream series was very atypical in regard to the frequency with which she dreamed about “prominent characters,” a category including “any character who is well known by general reputation, but not known personally to the dreamer” as well as “fictional, dramatic, imaginary, and supernatural figures” (Hall & Van de Castle, 1966, p. 59). In Izzy’s case, this means actors in TV shows, movies, and video games, which leads to the appearance of at least one prominent person in 35.7% of her dream reports. This figure is far above the HVdC normative figure of 3.5% for women (Domhoff & Schneider, 2020, p. 121, table 1, for details).

Romantic infatuations, which Izzy calls “crushes,” are also an important part of her dream life. (She uses the term to refer to the subject of the crush as well.) In fact, a crush on a celebrity actor at age 12 led her to write down a few dreams about him, and then a crush on another celebrity actor motivated her to write down all of the dreams she could remember each day (see Domhoff & Schneider, 2020, pp. 151–153, for details). In all, 18.1% of

her dream reports contained celebrity crushes, with a high of 41.5% when she was 22. However, as important as these celebrity crushes were in Izzy's dreams, the 14 classmates she became infatuated with at various times between ages 12 and 19 appeared in more of her dream reports (19.6% vs. 18.1% for celebrity crushes). Her deepest and most lasting crush, between the ages of 16 and 19, was on "Eugene," a classmate she had never spoken to in waking life. He appeared in 11.8% of her dream reports overall, including 2.0% of her dream reports after the crush on him ended in waking life at age 19. However, the actor who appeared most frequently appeared in only 3.1% of the dream reports. Overall, crushes who were either movie stars or acquaintances, appeared in 35.0% of Izzy's dream reports. There was absolute consistency from ages 14–19 (23.4%–38.2%, a range of 14.8%) and then a decline to 25.5% and below at ages 23, 24, and 25. This decline fits with her claim of developing no new crushes after age 22. The findings on the frequency and consistency of selected characters in Izzy's dream reports are presented in figure 7.1.

Izzy: Dream content and waking avocations As might be expected on the basis of her crushes on a long succession of male actors, Izzy dreamed frequently about popular culture, as it is expressed in visual media. Taken together, the word string encompassing terms related to specific shows, movies, and video games revealed at least one of these closely related interests appeared in 45.7% of her dream reports. A related word string for horror and fantasy appeared in 19.5%. When these two word strings were combined into a word string for hobbies and interests, they appeared in 54.1% of her dream reports. For all three of these word strings the percentages are lower from ages 12–17 and from ages 23–25 than they are between ages 18 and 22. However, there is variation from year to year in the percentage of dream reports with at least one mention of a popular culture term, so there are no consistencies in relation to her main avocations.

Izzy's response to a general question about the nature of her dreams provides very good evidence for continuity with waking thoughts in terms of her avocations: "I dream a lot about pop culture, since I watch a lot of films and TV. Also, from that I dream a lot about zombies because I love horror." Her comment confirms the frequency of her main waking avocational interests in her dream series relates to the intensity of her concern with this interest in waking life, just as the intensity of her personal concerns with specific individuals relates to the frequency of their appearances in her dream series.

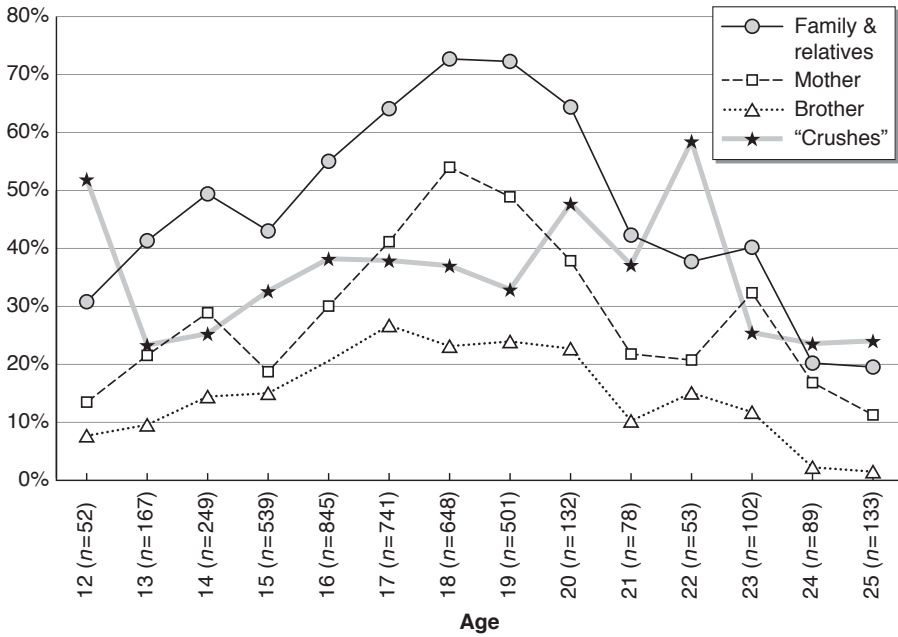


Figure 7.1
 Percentage of Izzy's dream reports containing family members and "crushes," by age.

Izzy: Sexual interactions Izzy had active sexual interactions in a few of her dream reports from the outset of her dream series. (The HVdC coding system defines a sexual interaction as anything from sexual thoughts to sexual intercourse, and this definition was used as far as was possible in studying her dream reports) (see Domhoff & Schneider, 2020, p. 154, for examples, which include instances of sexual intercourse involving herself or others). When asked if she ever had any sexual contact with any of her school crushes, she replied, "I never had any physical contact with anyone until age 25, so I never had any sexual contact with any of my crushes." Izzy's sexual activities in her dream reports from age 12 on provide a striking contrast to her shyness and avoidance of any type of romantic physical contact in waking life until she was in her mid-20s. However, her sexual involvements in her dream reports are continuous with her waking fantasies about her crushes.

Whether the issue is characters, avocations, or sexuality in Izzy's dreams, her waking thoughts are continuous with the concerns and interests she dramatizes in her dreams.

Jasmine: Personally known characters As in the study of Izzy's dream series, Jasmine's mother is the most frequent character in her dream reports in all four subsets, appearing in 55.6% of the 664 dream reports. Her father appears in 42.5% of the dream reports and is the second-most-frequent character in all four subsets, which is an example of relative consistency in comparison to Jasmine's mother. Overall, at least one of her two parents appears in 66.7% of her dream reports. The dream frequencies for her mother and father were analyzed in terms of subsets, which in her case are based on school levels in order to have adequate sample sizes. Both parents also provide strong evidence for absolute consistency, with a range of 13.8 percentage points (48.7%–62.5%) for her mother and an even narrower range of 5.6 points (39.6%–45.2%) for her father. In addition, her response to how she perceived each of her parents confirmed their relative importance, and her attitudes toward them, in waking life (Domhoff & Schneider, 2020, pp. 154–155).

Overall, personally known people, including all family members, appear in 85.1% of Jasmine's 664 dream reports. This figure is almost 10 percentage points higher than the HVdC normative figure of 76.8% for at least one familiar character. Jasmine also dreamed about a wide range of prominent characters, both real and imaginary. They included both well-known popular singers and fictional characters who appear in movies, such as Snow White, The Little Mermaid, and Pocahontas, and also a few political figures. Many of these celebrity characters, real and imaginary, appeared in Jasmine's dream reports in relation to her strong interest in music, which is discussed shortly.

When all the findings on family, friends and acquaintances, familiar characters, prominent characters, and known characters for both Jasmine and Izzy are compared with the HVdC norms for women, the results reveal that they both have a higher percentage of dream reports with at least one familiar character than is found in the HVdC female norms. However, this shared deviation from the norms on known characters occurs for different reasons. While Izzy does dream of her family members more than the female normative sample, the most notable discrepancy in her case is the incredibly frequent appearance of celebrities, whom she only knows from the media. In contrast, Jasmine's high number of familiar characters is mostly driven by her family members. More generally, the results can be summarized by noting that Izzy and Jasmine differ significantly from the HVdC women's norms, *and* from each other, on virtually all the character

indicators. The main exception to this generalization concerns the category of “friends & acquaintances,” in which Izzy and Jasmine differ by only 3.4 percentage points. At the time they both are at least 16.7 percentage points below the women’s norms. These findings on characters in both the Izzy and Jasmine series are compared with the HVdC women’s norms in table 7.3.

Jasmine: Avocations Aside from the very high percentage of known characters, the most striking feature of Jasmine’s dream reports is her interest in her audio and electrical equipment, including her voice recorder, her visual magnifier, and her computer. Music is her other strong interest, including her keyboards and singing. These two general interests are somewhat intertwined in some instances, such as her use of her electrical keyboards and listening to recorded music. One or more words related to her audio and electrical equipment—along with the wires, cords, and other equipment that support them—appeared in 37.2% of her dream reports. In the case of music search terms, the overall total was 31.5%. When the two word strings are combined, one or both of these interests appeared in 55.1% of her dream reports, which is very similar to the

Table 7.3

Number of dreams containing various familiar character subclasses in the female norms and in the dreams of Izzy and Jasmine

	Female norms (<i>n</i> = 491)	Izzy (<i>n</i> = 4,329)		Jasmine (<i>n</i> = 664)	
	Percent	Percent	<i>h</i>	Percent	<i>h</i>
Family	33.6	56.3	+46*	72.7	+81*
Mother	12.6	34.9	+54*	55.6	+96*
Father	8.8	19.6	+32*	42.3	+82*
Parents and siblings	26.3	53.3	+56*	70.8	+92*
Relatives	9.2	15.9	+20*	11.9	+09
Friends and acquaintances	59.1	42.4	−34*	39.0	−40*
Celebrities	3.5	35.7	+91*	12.7	+35*
All familiar characters	78.2	86.5	+22*	86.9	+23*

Note: *h* values are from a comparison of each individual series to the female norms.

* $p < 0.001$.

54.1% of dream reports for Izzy's avocational interest in visual expressions of popular culture.

As with her character categories, the overall findings on Jasmine's avocational interests are continuous with her waking thoughts and interests. In waking life she is constantly putting together, repairing, working with, or worrying about her audio and electrical equipment and her computer. In terms of music, she and her parents listened to a wide range of music while she was growing up. She "enjoyed singing in the school chorus" and "felt drawn to the piano." She hesitated to take music lessons during high school but she bought "a cheap keyboard" while she was away from home at technical school. She learned to play it with some help from her music professor. She began to take lessons on the piano when she returned to live with her parents. She became proficient enough on the piano, and then on the organ, to play in nursing homes, hospitals, and churches (Domhoff & Schneider, 2020, p. 157).

Jasmine: The absence of sexual interactions Sexuality appears in fewer than 10% of HVdC women's normative dream reports, and it is even more infrequent in most of the relatively few available teenage dream samples. It is completely absent from Jasmine's dream reports. For reasons of ethics and respect for Jasmine's privacy on a potentially sensitive topic, sexuality was not a topic it seemed appropriate to ask her about. However, she later volunteered the information, at about age 30, that she had a "significant other" who is older than she is (Domhoff & Schneider, 2020, pp. 157–158). When then asked about her possible interest in romantic relationships during high school, she replied that she did not "focus too much on boys or dating when I was a teenager or in my 20s. No one really seemed interested in me, and I just never let it be an issue." Her reply suggests that the atypically low frequency of sexual elements in her dream reports reveals what is very likely an atypically low waking interest in romance and sexuality. In this instance, the relative lack of interest may be at least in part due to the fact that no one had shown any romantic interest in her, which might have sparked her own interest.

Izzy and Jasmine kept track of their dreams on a daily basis for very different reasons, and their interests in waking life are extremely different as well. Nevertheless, they are similar in that their dream series provide evidence of consistency and continuity for several characters and for

their primary avocations. They are similar in waking life in that they never engaged in any sexual activities during high school or their college-age years. At the same time, their waking thoughts about sexuality were very different: Izzy often daydreamed about sex and Jasmine did not. In both instances there is continuity between dream content and waking thought. Both of these dreamers once again reveal the overriding importance of imagination, not waking behavior or reality, in dreaming.

Consistency in Phil's Dream Reports at Ages 14–15 and 29

Phil, a retired professor of humanities, taught for several decades at an eastern university. He offered his dream series after he had been retired in a western mountain state for two years. He first wrote down 29 dream reports in the two months before his 15th birthday and another 77 in the first several months after that for a total of 106 dream reports. He also wrote down his dreams regularly for a year or two when he was in his late 20s. No detailed personal information on Phil was ever obtained, which is why the study is primarily focused on the issue of consistency. His dream series was studied with both HVdC categories and two generic word strings. The dream reports can be found on DreamBank.net under the pseudonym Phil.

The first analysis, based on HVdC categories, focuses on 86 dream reports between 50 and 300 words for ages 14–15 and 86 reports of the same length range at age 29. There were only three substantive differences on 16 HVdC content indicators between the two age periods. His very high teenage F/C Index declined to a figure closer to the norms (.36 to .26, $h = .20$, $p < .05$) and his low teenage A/C Index increased, also moving closer to the norms (.16 to .23, $h = .19$, $p < .05$). The decline in friendliness and rise in aggression is also captured by the large change in his A/F%, from a very low 26% to 47% ($h = .45$, $p < .001$)—which is still well below the men's norm of 59%.

Phil's dream reports for those two ages were also compared using generic word strings for religion and sexual intercourse. These comparisons were based on all the dream reports in the two subsets, not just the dream reports that were coded for 16 HVdC content indicators. The comparisons were possible because the median word lengths did not differ significantly. There were 141 in the first subset and 153 in the second subset. There were differences between the adolescent and mature adult subsets on both of the word strings, which were consistent with his changing interests and preoccupations since his teen years. He was less interested in religion and more interested in sex. Based on this quick overview of the findings with the

Phil series, it provides solid evidence for consistency in what people dream about between their mid-teens and their late 20s. This evidence supports the findings based on the Izzy and Jasmine series.

Conclusions and Implications

Based on replicated laboratory studies with girls and boys ages 9–15, two-week dream diaries from a sample of girls at a private school, MRD studies of children in four countries, and four adolescent dream series, this chapter first shows that adolescent dream content is in general similar to adult dream content by ages 13–15, just as the default network is becoming close to the maturation level of young adults. However, dream content is not yet similar to the norms on some indicators. The findings from the four adolescent dream series add strong evidence to the overall case for consistency and continuity in dreaming, as discussed in chapter 4. In particular, Izzy and Jasmine are of special interest as outliers on many character categories when they are compared to the HVdC women’s normative sample. Their specific avocations may be somewhat unusual as well. But the different ways in which they are atypical greatly strengthens the case for consistency and continuity in dreams. This is because they are atypical individuals while nonetheless showing consistency over time and continuity with waking personal concerns by ages 13–15. As with the cross-sectional studies of late childhood and early adolescence, this excellent longitudinal evidence is consistent with the maturation of the default network at about this time and with the full development of the cognitive capacities necessary for imagination to flourish.

This is a section of [doi:10.7551/mitpress/14679.001.0001](https://doi.org/10.7551/mitpress/14679.001.0001)

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By: G. William Domhoff

Citation:

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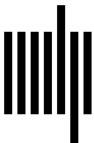
DOI: [10.7551/mitpress/14679.001.0001](https://doi.org/10.7551/mitpress/14679.001.0001)

ISBN (electronic): 9780262370882

Publisher: The MIT Press

Published: 2022

The open access edition of this book was made possible by generous funding and support from MIT Press Direct to Open



The MIT Press

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The MIT Press would like to thank the anonymous peer reviewers who provided comments on drafts of this book. The generous work of academic experts is essential for establishing the authority and quality of our publications. We acknowledge with gratitude the contributions of these otherwise uncredited readers.

This book was set in Stone by Westchester Publishing Services, Danbury, CT.

Library of Congress Cataloging-in-Publication Data

Names: Domhoff, G. William, author.

Title: The neurocognitive theory of dreaming : the where, how, when, what, and why of dreams / G. William Domhoff.

Description: Cambridge, Massachusetts : The MIT Press, 2022. | Includes bibliographical references and index.

Identifiers: LCCN 2021051383 | ISBN 9780262544214 (paperback)

Subjects: LCSH: Dreams. | Cognitive neuroscience. | Neural networks (Neurobiology)

Classification: LCC BF1078 .D583 2022 | DDC 154.6/3—dc23/eng/20211122

LC record available at <https://lcn.loc.gov/2021051383>