

# From Adolescence to Young Adulthood in Two Dream Series: The Consistency and Continuity of Characters and Major Personal Interests

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*Based on several past studies of lengthy daily individual dream series, which are an unobtrusive, nonreactive archival measure, free of any demand characteristics, it has been established with adults over age 25 that dream content is consistent over years and even decades. In addition, dream content is often continuous with waking personal concerns as well, whether the concerns are positive (“interests,” “avocations”) or negative (“worries,” “preoccupations”; Domhoff, 2018, Chapters 3–4, for summaries of this work). The study presented in this article is a descriptive empirical investigation that explores the question of if and when consistency and continuity can be found in the teenage years or young adulthood. It is based primarily on individual dream series kept by 2 young women from early adolescence to young adulthood. They do not know each other and did not separately think about providing their dream reports to researchers until they were in their mid-20s. The analyses of these 2 series, one containing 4,329 dream reports, and the other containing 664 dream reports, are based on a quantitative word-search methodology, available through [DreamBank.net](#). The resulting personalized word strings for each series combine the rigor of defined content categories with the speed and perfect reliability of computerized word searches. The findings on consistency and continuity during adolescence are similar to the earlier findings for adults.*

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Daily dream journals, usually consisting of hundreds to thousands of dream reports, are kept by a rare but diverse set of people in many parts of the world for their own individual reasons, which only rarely have anything to do with psychotherapy or an interest in any dream theory (Bell & Hall, 1971; Domhoff, 2003, Chapter 5; 2015; Hall & Lind, 1970; Smith & Hall, 1964). The dream series contained in dream journals are a form of unobtrusive, nonreactive archival data,

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We are grateful to “Izzy” and “Jasmine” for sharing their dream journals with us and for their willingness to answer our questions in an open and candid manner.

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uninfluenced by the demand characteristics, expectancy effects, or social desirability factors that can arise as subtle confounds in experimental settings (Orne, 1962; Rosenthal, 1976; Rosenthal & Ambady, 1995; Webb, Campbell, Schwartz, Sechrest, & Grove, 1981). Nonreactive archival data have led to new insights in the study of personality, social psychology, and community psychology (Allport, 1942; Baldwin, 1942; Johns, Coady, Chan, Farley, & Kansagra, 2013; Webb et al., 1981; Whitley & Kite, 2013), as well as in the study of dreaming and dream content (Domhoff, 1996, Chapters 7–8; 2015; 2018, Chapters 3–4, for summaries as well as new studies).

The majority of the findings from past analyses of an individual dream series, most of which involved adults of age 25 and older, were the product of content categories that are part of the comprehensive and well-established Hall/Van de Castle coding system (Hall & Van de Castle, 1966). The use of the Hall/Van de Castle coding system (hereafter HVdC), which is based on the categorical level of measurement, makes it possible to compare the results with replicated group norms that are a part of the overall coding system (Hall, Domhoff, Blick, & Weesner, 1982; Hall & Van de Castle, 1966; Tonay, 1990/1991). These comparisons with the HVdC normative findings also led to inferences based on statistically significant deviations in any given dream series from these norms. In that regard, past studies of dream series have parallels with standardized paper-and-pencil personality tests based on group norms.

Quantitative studies of about two dozen dream series using the HVdC coding categories have shown that there is great consistency in what adults dream about over months, years, and decades (Domhoff, 1996, Chapter 7; 2018, Chapters 3–4; Lortie-Lussier, Cote, & Vachon, 2000). This past research reveals that three types of consistency are possible: absolute, relative, and developmental. Absolute consistency, which also can be called constancy, means that the frequency of a dream element varies very little over periods of several months or years, which in this study will be defined as staying within a range of 15 percentage points over four or more chronological age subsets. Relative consistency is defined in terms of one or another dream element always exceeding the frequency of a related element, although one or both of them may increase or decrease in frequency. Developmental consistency is defined as a continuous increase or decrease in any dream element over several subsets, which in this study will be defined in terms of four or more continuous subsets.

In terms of continuity, which is studied by asking participants to confirm or reject a series of inferences based on a blind quantitative analysis of a dream series, studies of roughly a dozen dream series, using either HVdC coding categories or standardized word strings, have shown that there is considerable continuity between the frequency with which specific people and avocations appear in a dream series and the intensity of waking personal concerns about those people and avocations (Bulkeley, 2012, 2018; Domhoff, 1996, Chapter 8; 2003, Chapter 5; 2015; 2018, Chapters 3–4).

The value of such studies is dependent on the candidness of the participants in terms of both the accuracy of their dream reports and the honesty of their replies to questions about their thoughts. Care therefore must be taken in assessing the authenticity of a dream series, and complete anonymity must be guaranteed to the participants. Ideally, the researchers should know as little as possible about the personal lives of the dreamers; in most studies to date, the

researchers in fact have known nothing about the dreamers' personal lives. At the same time, it should be pointed out that the problems of collecting accurate dream reports are an issue in all dream studies, including those based on awakenings in a sleep-dream laboratory, because there are no corresponding neurological, physiological, or observational variables that can corroborate the verbal reports by the participants.

It is also important to note at the outset that the possibility of autocorrelation has been ruled out as a potential confound in studies of dream series by a study of 125 separate runs from four different dream series. These runs were coded using several of the categories in the HVdC system. The analysis of the 125 runs was carried out using the Wald–Wolfowitz (Wald & Wolfowitz, 1940) nonparametric runs test for assessing independence with categorical (nominal) data (Domhoff & Schneider, 2015a). Similarly, adding a correction for multiple tests of the same database demonstrated that the HVdC findings are not compromised by the potential statistical problems that multiple testing can cause (Domhoff & Schneider, 2015b).

Within the context of the replicated findings on consistency and continuity in adult dream series, and the evidence that the findings based on dream series are not confounded by autocorrelation or multiple testing, the purpose of this article is to determine if and when the consistency and continuity discovered in adult dreams series begin to appear in the teenage years or early adulthood. These new findings are based on a relatively new method, individually tailored word strings, which has been used successfully in three studies in the past, albeit in a more rudimentary form (Domhoff, 2003, Chapter 5; Domhoff & Schneider, 2008b, p. 1243). This method makes it possible to do personalized studies that involve very large databases, which can be analyzed in the space of several minutes once the word strings are created. The results of this study are most accurately described as descriptive empirical findings, not as the outcomes of theory-derived hypothesis testing. These concern the degree to which the serendipitous discovery of consistency and continuity in the process of examining adult dream series can be extended into the teenage years.

### **Previous Studies of Teenagers and Children**

Although consistency and continuity are well established for adults over age 25, there is limited evidence on either topic for high school and college students, and none at all for children or for adolescents in middle school. There are, however, solid laboratory-based longitudinal and cross-sectional studies of samples of boys and girls, which show that there are major changes in dream content between ages 5 and 13, and perhaps more subtle changes for the next 2 or 3 years, so it is possible that consistency and continuity may be limited in teenagers (Domhoff, 2018, Chapter 4, for a detailed account of both laboratory and nonlaboratory findings for ages 3–13; Foulkes, 1982, 1999; Foulkes, Hollifield, Sullivan, Bradley, & Terry, 1990, for the original laboratory findings on children and adolescents; Strauch, 2004, 2005; Strauch & Lederbogen, 1999, for the results of a longitudinal study of youngsters of age 9–15).

In addition, there is evidence for consistency on some topics in a study using selected HVdC categories and standardized word strings to examine dreams written down by a humanities professor at three different ages (14–15, 28–29, and 61–62), which are available under the pseudonym “Phil” on [DreamBank.net](https://www.dreambank.net) (Domhoff, 2018, pp. 95–96, 151–154). Building on analyses based on several HVdC categories, three short generic word strings, and two individually tailored word strings, there is also strong evidence for consistency in 2,022 dream reports written down by a college student during his first 3 years in college (“Kenneth” on [DreamBank.net](https://www.dreambank.net); Domhoff, 2018, pp. 93–95).

In terms of continuity between dream content and waking personal concerns, there are only two studies for individuals under the age of 25, both of which are based on a dream journal kept by a young woman in her teenage and college years. This dream series was offered to dream researchers after she graduated from college and read an article on dream research in *The New Yorker*. The first study of this series used 40 standardized word strings to analyze 223 dream reports from ages 14 to 16 and 63 reports from her early years in college (Bulkeley, 2012). The second study used several coding categories from the HVdC coding system to examine the 139 consecutive dream reports from ages 14 to 15 that contained 50 or more words (Domhoff, 2018, pp. 139–145). (This woman’s dream reports, under the pseudonym “Bea,” are available on [DreamBank.net](https://www.dreambank.net)).

### Participants and Methodology

The database for this study consists of two series of dream reports that were usually documented on the day they were recalled, or shortly thereafter, by two young women from their early teens to their mid-20s. They were born and raised in different countries in the English-speaking world, differ in age by 6 years, do not know each other, and separately provided their dream series to researchers when they were in their mid-20s. In addition, both participants were willing to answer questions, which were asked after the quantitative analyses were completed. At that point, the authors asked them via e-mail about the important people in their lives and also asked to provide their thoughts about these people, as well as to describe their personal interests, avocations, and preoccupations.

To ensure that the two participants’ dream reports were not influenced by their e-mail interactions with us, we asked both of them to send us only those dream reports documented before they contacted us, which is also our standard procedure with adults who offer us ongoing dream series. Finally, any vagueness or displacements concerning dates and places that readers may encounter in this article are due to the efforts to protect the anonymity and respect the privacy of the two participants; however, sequences and time intervals were always maintained.

### The Two Dreamers: Izzy and Jasmine

There is a public invitation on [DreamBank.net](https://www.dreambank.net) that offers people the opportunity to use the word- and phrase-search programs available on this research platform to study their own personal dreams series once these are placed in a

password-protected private space. “Izzy” first contacted us about her dream series in 2009 to ask that her dream reports be placed on [DreamBank.net](http://DreamBank.net) for her private use. In December 2016, she placed a fully digitized version of her dream journal, including for the years since 2009, and wanted to provide a new complete file of her full dream journal for her private site on [DreamBank.net](http://DreamBank.net). In all, she had recorded 4,329 dream reports between the ages of 12 and 25. The fact that Izzy had first placed dream reports on [DreamBank.net](http://DreamBank.net) at age 18, and then updated it at age 26, is good evidence that her dream series is an authentic one. (Details on her willingness to have her dream series studied are constrained by space limitations.)

Izzy was born in the early 1990s, and she has a brother who is 2 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 7 years. In about 2010, her brother moved in with their father after he was caught stealing money from their mother. In late spring of 2013, Izzy moved to another English-speaking country for 14 to 15 months. When she returned home, she lived with her mother and her mother’s partner until midsummer of 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.

Izzy began regular entries into her dream journal about two or three months after her 12th birthday and in the seventh grade. After finishing high school, she was enrolled in a university from 2010 to 2012 but could not decide upon a major. She dropped out to earn a vocational degree at a community college, which qualified her for a certain kind of technical job. About two years after we received the dream series from her, Izzy returned to college and earned a university degree.

In the case of “Jasmine,” she offered her dream series to us in a direct and unsolicited e-mail late in 2012. Once again, space considerations preclude the details.

We soon learned there would be unusual aspects to a study of Jasmine’s dream series, beginning with the fact that she voice-recorded the 664 dream reports in it, which were recorded between the ages of 14 and 25. Her dream series consists of 39 dream reports from her middle school years, 268 reports from her high school years, 261 reports as a college student, and, after a 4-year hiatus, 96 reports at ages 24 and 25, when she returned to college and earned a Master of Arts degree in Education and a teaching credential. As in the case of Izzy’s dream reports, all of Jasmine’s dream reports are available on [DreamBank.net](http://DreamBank.net).

Jasmine’s dream series offers 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, their 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 that 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.

It is due to her blindness that Jasmine used a voice recorder to keep a record of her dreams, usually shortly after she awakened on any morning on which she recalled a dream. She kept these voice recordings for her personal use, and then made copies of them to send to us after she came upon the book that caused her to offer her dream series, which is strong evidence for the veracity of these tapes because it would take a very large amount of time to tape a fabricated set of dream reports.

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, from a first marriage by her father, she has two older half-sisters who are 9 and 10 years older and a half-brother who is 7 years older. 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 she was younger, her mother took her to visit them 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 Bachelor of Arts degree 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, and it was in this context that she returned to college to earn a Master of Arts in Education and a teaching credential.

### **Deciding on Appropriate Subsets for the Analyses**

For purposes of the present study, Izzy's and Jasmine's 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 1-year age intervals. This analysis demonstrated that there was considerable similarity in the general findings and trends with all three types of subset samples. It therefore seemed most useful for substantive psychological reasons to present the results by age whenever possible, despite the differences that approach would inevitably create in year-by-year sample sizes. That is, this analytic strategy was chosen because possible age differences in subsets of dream reports are very relevant for the purposes of this study, and more generally of considerable interest in psychological research.

Past studies have shown that it usually takes 100 to 125 dream reports to establish consistencies on most content variables due to the fact that some dream elements appear in half or less than half of the dream reports (e.g., aggressive, friendly, and sexual interactions), and even the most frequent familiar characters in a dream series may appear in only one third to half of the dreams (Domhoff, 1996, pp. 133–134; 2003, pp. 92–94; Domhoff & Schneider, 2008a). Because Izzy recorded over 100 recalled 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. Even so, this necessity still made it possible to examine her

dream reports in relation to the important developmental transitions that are marked by the differences between middle school, high school, college, and young adulthood. Specifically, her dream reports were analyzed in subsets based on middle school (ages 14–15), high school (ages 16–18), college (ages 18–21), and graduate school (ages 25–26) years. (Recall that she did not make tape recordings of her dreams between ages 22 and 24.)

The distributions of Izzy’s and Jasmine’s dream reports by age are provided in Figure 1. The results for the characters are analyzed in terms of several substantive groupings, including parents, all family members, friends and acquaintances, personally known characters, and prominent dream characters who are familiar to most people (i.e., celebrities). The noncharacter results are presented in substantive groupings concerning avocations and sexual elements.

### The Method of Analysis

As noted in the first section, most studies of consistency and continuity have either made use of detailed HVdC codings (Domhoff, 1996; Hall & Van de Castle, 1966) or deployed standardized word strings (Bulkeley, 2012, 2018; Domhoff & Schneider, 2008b). However, the present study relies upon a somewhat different approach: individualized word strings created for each dreamer. These strings are constructed using a slightly modified version of “regular expression” pattern matches, which are part of many programming languages, including Perl (Domhoff

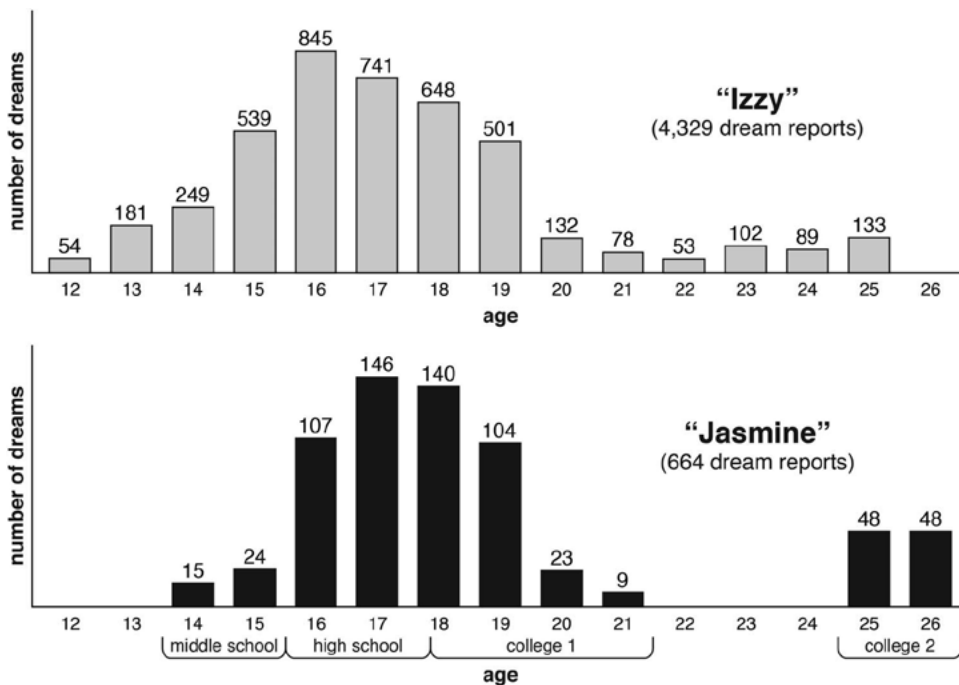


Figure 1. Number of dream reports in the Izzy and Jasmine series, by age.

& Schneider, 2008b; Schneider, 1999). A word string can consist of a few simple separate words (e.g., ^mother^ ^father^ ^sister^ ^brother^), slightly more complex formulations (e.g., my\_mother|my\_father|my\_brother|my\_sister), or very complex word strings, such as our standardized string for positive emotions: (?<!not\_|n't\_)(^happy^|^contented|^pleased|^relieved|^amused|^cheerful(|ly)^|^glad^|^feel|feels|feeling|felt|very)\_relaxed^|^gratified^|^feel|feels|feeling|felt)\_wonderful^|^elated^|^joyful(|ly)^|^exhilarat(e|es|ed|ing)|ecsta(sy|tic)^; Domhoff & Schneider, 2008b, Appendix A, pp. 1245–1246, which also contains the emotion word strings that parallel the HVdC coding categories for anger, apprehension, and sadness).

The steps involved in creating individually tailored word strings begin with a reading of the first several dozen dream reports in a new series. During this reading, as many repeated words and/or phrases as possible are noted. Separate word strings for characters, activities, places, avocations, and other common topics are then created from this compilation of words, which are designed to parallel HVdC coding categories. The initial word strings are next extended and refined, a process that includes reading through the dream reports that were found with the revised word strings. At this point, the revised word strings are again refined and some new strings may be created as well. Through repeated iterations of this simple but sometimes tedious process, many different word strings can be developed for the study of any dream series. The updated strings and any new word strings are then used in searches of the entire series, with each search normally taking only a few to several seconds.

The word strings created for use in this study are available for researchers who would like to replicate the findings in this article or make use of one or more of them for their own purposes. These can be found in the “More Information” links for Izzy and Jasmine, respectively, on [DreamBank.net](#). The word strings used to study the Izzy series are labeled “family and relatives,” “friends and acquaintances,” “school/work characters,” “online friends,” “celebrities,” “celebrity crushes,” “non-celebrity crushes,” “ALL crushes,” “popular culture (films, online games),” and “horror/fantasy.” The word strings for Jasmine’s dream reports are named “nuclear family,” “extended family,” “friends,” “known adults,” “celebrities,” “familiar places,” “audio and electrical equipment,” and “music.”

For studying the degree of continuity between dream contents and waking concerns, whether those concerns are “positive” (e.g., a friend, a favorite avocation) or “negative” (e.g., continuing anger with a family member, a regret about a past relationship), the inferences about waking thoughts are based on a repeatedly confirmed finding in studies reaching back to the 1960s: The relative frequencies of dream elements reveal the relative intensity of the dreamer’s personal concern with that element in waking thought. For example, the most frequent characters that appear in an individual dream series have invariably been found (through the postanalysis examination of diaries and biographies, the dreamer’s responses to written questions, interviews with the dreamer, or interviews with the dreamer’s close friends) to be the people they are most concerned about in waking thought (Bell & Hall, 1971; Domhoff, 1996, Chapter 8; 2003, Chapter 5; Hall & Domhoff, 1968; Hall & Lind, 1970).

Examples of the postanalysis questions that were asked of Izzy in this study include “Please list the people you think you thought about most frequently during [a given time period],” and “If you have not already done so in the process of



answering earlier questions, please describe your current thoughts and feelings toward, and the nature of your relationship with, the main members of your family.” Izzy’s replies to our questions about her past thoughts were based not only on memory but also on a spreadsheet that she created to keep track of what she dreamt about, which includes “all the people I’ve dreamt about and I mark it against a date when I dream about them.” She also could turn to waking diaries she had kept from time to time. Despite those aids, we recognize there is evidence that past memories, especially for details, can be distorted. However, it is also the case that the gist of memories and impressions, which are the main point here, is often accurate by adolescence (Weldon, Corbin, & Reyna, 2014, for a summary of research on this issue).

In the study of Jasmine’s dream reports, on the other hand, there was no emphasis on her recalling any past thoughts. The questions were present-oriented. However, she did sometimes mention her memories concerning the past in replying to questions. In addition to our own questions, much of the information relating to continuity with waking thoughts in Jasmine’s dream reports came to us from an earlier study of her dream series based on 40 standardized word strings (Bulkeley, 2015). For that study, G. William Domhoff served as the person who conveyed the questions to Jasmine and then forwarded her replies to the researcher who had formulated the questions.

Based on frequencies in the Jasmine series that were higher than what this earlier researcher had found in his normative studies, it was possible for him to infer correctly that her mother was the most important person in her life, that she was blind or sight-impaired, that hearing was especially important to her, that she enjoyed books and writing, that she was musically active in terms of singing and playing the piano, that she had recently been a college student, that she was very involved with birds (especially chickens), and that at the time of the later dreams in the series, she attended church regularly—although she turned out to be a church organist, not necessarily a believer (Bulkeley, 2015).

The descriptive empirical findings in this article are expressed in percentages. As noted in the first section, absolute consistency is defined as four or more chronological age subsets in which the percentages differ by 15 percentage points or less, relative consistency is defined as the appearance of a category more frequently than one or more related categories, and developmental consistency is defined in terms of four or more consecutive increases or decreases in the age subsets.

## Results

### 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, and is the most frequent character in every year except one. Her mother is also mentioned by Izzy as the person known to her personally who she thought about most frequently in waking life through age 22, so her dream appearances provide evidence of continuity between the ages of 12 and 22.

The appearances by Izzy’s mother show two different patterns of developmental consistency. There is a gradual overall increase in her appearances from ages 12

to 18, when the percentage of Izzy's dream reports that include her mother reaches a high point of 54.0%. Then there is a gradual developmental decline until age 22, followed by a relatively small increase in the next year and then a decline to 11.3% at age 25.

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 follows:

I had previously [before seventh grade] had a somewhat complicated relationship with her for a few years and it had been mellowing out during the year I started writing down my dreams. . . . From the time I started writing down my dreams, my relationship with her was all right. . . . We clash often as we're quite different and she tends to make me angry very quickly and easily. I have always been a very private and reserved person so I never felt the need to talk to my family about personal matters and so I was never close to them in this way. We are kind of more like friends in that regard. But if I ever had some emotional problem and I needed to talk to someone, then my mom would be the person I could most rely on for that.

Izzy's only sibling, the younger brother mentioned earlier, is the second-most frequent character (30.2% of the dream reports). He, too, increases gradually in his appearances to a high point of 43.5% when Izzy was 18 and then declines to 2.2% and 1.5% when she was 24 and 25, respectively, which indicates the same developmental consistencies found with Izzy's mother. Based on Izzy's conception of their relationship, her brother's permanent move to their father's house, when Izzy was about 19, may have led to the decline in the frequency of his appearances because it removed an "annoyance" from her daily life, an annoyance that increased her frictions with their mother. Briefly, due to limitations of space, she said she "never really had a close relationship with my brother," and said it was based on a mutual interest in video games. He tended to hit her, which her mother blamed on her, which would increase her annoyance with both her mother and brother.

Izzy's father is the third-most frequent character in her dream series (19.6% of reports). He, too, showed a pattern of developmental consistency. His appearances rise and fall in about the same way as do those for Izzy's mother and brother, with a high point of 26.9% when she was 17, and then a gradual decline to 2.2% and 4.5% at ages 24 and 25, respectively. Izzy reported that she and her father are "similar," and "clashed" as a result. She generally thought of him only when he upset her.

Taken together, at least one of the three immediate members of Izzy's family appears in 53.3% of her dream reports, with high points of 70.2% and 70.1% at ages 18 and 19, respectively, and then a decline to 59.8% at age 20, 39.2% at age 23, 18.0% at age 24, and 15.0% at age 25. These findings reinforce the point that there are two developmental consistencies in relation to the three members of her immediate family. The findings highlighted in the last few paragraphs are presented graphically in [Figure 2](#).

Izzy also dreams of several other family members, the most frequent of whom is a paternal grandmother, who appeared in 7.2% of all the dream reports, with excellent absolute consistency between ages 14 and 19 (range = 6.5% to 9.7%), followed by a slight increase to 11.4% at age 20, followed by a decrease to 4.5% or less from ages 21 to 25. Izzy reports that she saw this grandmother regularly while

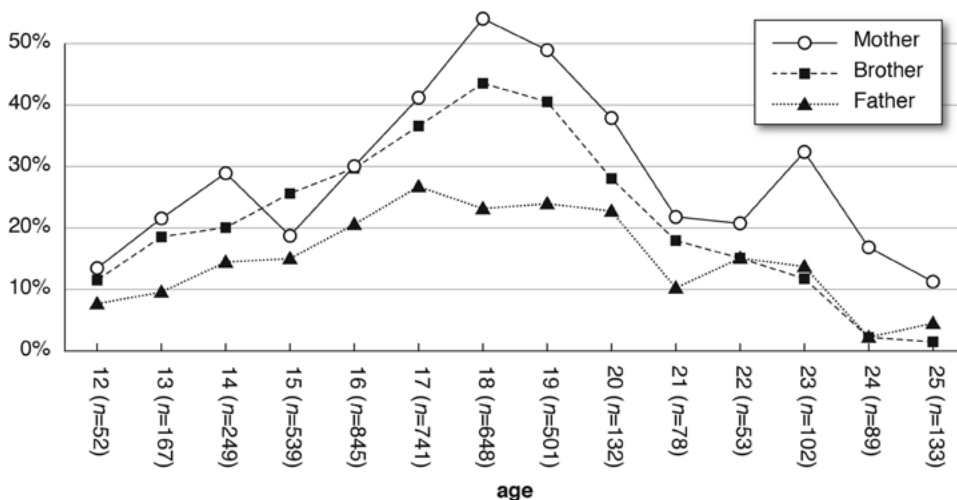


Figure 2. Percentage of Izzy's dream reports that mention her mother, father, and brother, by age.

growing up, and explained in detail why she conceived of this grandmother as a very positive and supportive person.

In total, 5.8% of Izzy's dream reports include appearances by her mother's live-in male partner since 2001—an honorary family member, so to speak. When he and Izzy's immediate family are combined with the rest of her extended family, 56.3% of her dream reports contain 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. The addition of these more distant relatives adds relatively little to the percentage of immediate-family dream reports (53.3%), because these relatives almost always appear in the same dreams as do the immediate family members.

Izzy also dreams often about her friends and acquaintances (26.9% of the dream reports) and a wide range of people known from school or work (28.3%). Taken together, this array of nonfamily members known personally to Izzy appears in 42.4% of her dream reports. The per-year figure varies considerably from ages 12 to 25, with no consistent pattern. More generally, when friends, acquaintances, and people from school and work are merged into the list containing all family members, then at least one person she knows personally appears in 75.9% of her dream reports. This figure is very close to the HVdC normative percentage for female dreamers (76.8%), a percentage that is based on HVdC codings of 500 dream reports from 100 women, and later replicated twice with samples of at least 100 women's dream reports (Hall et al., 1982; Hall & Van de Castle, 1966; Tonay, 1990/1991).

### Izzy: Prominent Characters

As do many people, Izzy also dreamt of people widely known to the general public because of their celebrity status as actors, sports stars, or political roles. In

Izzy’s case, this means actors in TV shows, movies, and video games. Drawing on the HVdC definition of “prominent characters,” which includes “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), at least one prominent person appears in 35.7% of Izzy’s dream reports. This figure is far above the HVdC normative figure of 3.5% for women. When prominent characters are added to the list of personally known characters in Izzy’s dreams, then 86.5% of her dream reports contain at least one “familiar” character, which is higher than the HVdC normative figure of 78.2% because of the abundance of celebrities.

All of the findings on familiar characters in Izzy’s dreams are summarized in Table 1 and compared with the HVdC normative figures for women, which are also based on the percentage of dream reports containing at least one of these various types of familiar characters. Because the sample sizes are very large for both the Izzy series and female norm findings, the many differences of six percentage points or more in Table 1 have a *p* value of .01 or lower using a proportions test, as established through an examination of look-up tables using the Izzy series and normative sample sizes, and the relevant percentage differences (Cohen, 1977, pp. 192–195, Tables 6.3.4 and 6.3.5; Domhoff, 1996, Appendix D, p. 317, Table D.3). In determining the more interesting issue of the magnitude of the differences, the companion statistic to the proportions test for effect sizes, *h*, the most useful information in terms of examining Table 1 is that *h* is twice the size of the percentage difference when both percentages are between 10 and 90 (Cohen, 1977, pp. 180–183; Domhoff, 1996, Appendix D, pp. 314–317, including Table D.2). Based on past dream studies, an *h* of .20 or less is small, an *h* of .20 to .40 is medium, and an *h* greater than .40 is large. Thus, the effect sizes in Table 1, when there are statistically significant differences, range primarily from medium (differences of 10 to 20 percentage points in Table 1) to large (differences of 20 percentage points or more).

**Romantic Infatuations in Izzy’s Dream Series**

Romantic infatuations, which Izzy calls “crushes,” are an important part of her dream life. (She uses the term to refer to the subject of the crush as well.) When

Table 1  
*Frequency of Various Character Classes in Izzy’s Dream Reports, Compared With the Hall/Van de Castle Female Norms*

Character class	Izzy ( <i>n</i> = 4,329), %	Female norms, %
Family	56.3	33.6
Mother	34.9	12.6
Father	19.6	8.8
Parents	45.6	21.8
Parents and siblings	53.3	26.3
Other relatives	15.9	9.2
Friends and acquaintances	42.4	59.1
All personally familiar humans	75.9	76.8
Celebrities	35.7	3.5
All familiar humans	86.5	78.2

asked to explain what she meant by the term, she replied that she defined a “crush” as “being sexually attracted and ‘romantically’ attracted as well. Generally, I have always been shy and not particularly interested in other people, so most of my crushes I never spoke to and were purely superficial, however I tended to get somewhat obsessed thoughts-wise.”

In fact, as she then explained, it was a crush on a celebrity actor at age 12 that led her to write down a few dreams about him, and then a crush on another celebrity actor that motivated her to write down all of the dreams she could remember each day. The infatuations with the two actors that led her to begin keeping records of her dreams at age 12 were just the beginning: 98 of the 112 “crushes” in her dreams were actors (often appearing in character). 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 are in Izzy’s dreams, the 14 classmates she became infatuated with at various times between ages 12 and 19 appeared in even 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 who she had never even 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. On the other hand, the actor who appeared most frequently was 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. Although there are usually very few dreams of these crushes after the crush has ended, the fact that they still appear in some dreams suggests that dreams are not only for the most part continuous with waking thought, but that at least in some instances they provide a lingering indication of past waking concerns.

Two of her celebrity crushes, actor/writer Donald Palmer and actor Stephen Merchant, are of interest as her final two crushes at age 22. She first saw Palmer in a film at a festival of horror movies that she attended. She then saw him in reality “in the lobby after the film and was just taken away by how attractive he was.” She then “worked up the courage to speak to him about his film” and became “friends” with him on Facebook. Shortly thereafter, she played the video game Portal 2 and “became obsessed with Stephen Merchant.” But as already noted, it turned out they were the last of her crushes: “That was kind of the time that my ‘crushes’ stopped because I never had another one after Merchant and Palmer.”

Individual celebrities aside, the year-by-year percentages for actor crushes, classmate crushes, and all crushes are presented in [Figure 3](#). It is first of all noteworthy that the teenage year in which the highest percentage of dream reports included at least one of her crushes, 51.9%, was at age 12, when she first began to record her recalled dreams on a regular basis. However, this result may be tempered somewhat by the fact that the first daily dream reports that she wrote down were motivated by crush dreams. Also, she did not begin writing down her dream reports until later in that year and was not yet a frequent recaller, so she only recorded 52 dream reports overall in that year. Second, [Figure 3](#) further shows that there was absolute consistency from ages 14 to 19 (23.4%–38.2%, a range of 14.8%). Third, there is the increase to 55.8% at age 22, the year she developed crushes on Palmer and Merchant, and then a decline to 25.5% and below at ages 23,

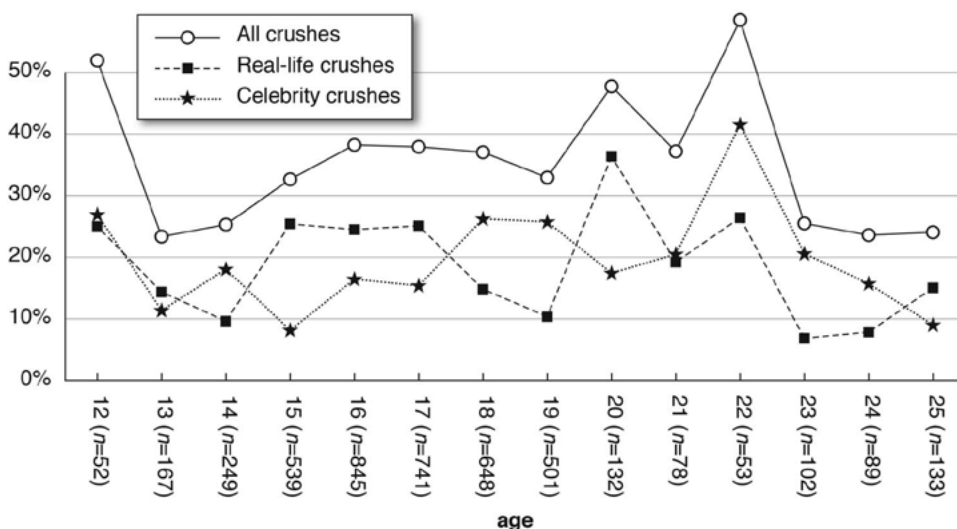


Figure 3. Percentage of Izzy’s dream reports containing one of more of her “crushes.”

24, and 25, the years in which she developed no new crushes. Based on these findings, along with Izzy’s statements about developing no new crushes after age 22, it can be argued that the findings on crushes provide very good evidence for continuity between her dream enactments and her waking thoughts.

**Avocations: Popular Culture in the Izzy Series**

As might be expected, based on her crushes on a long succession of male actors, Izzy dreams frequently about popular culture as it is expressed in visual media. Taken together, the word string that encompasses terms related to specific shows, movies, and games reveals that at least one of these closely related interests appears in 45.7% of her dream reports, and a related word string for horror and fantasy appears in 19.5%. When those two word strings are combined into a word string for hobbies and interests, these appear in 54.1% of her dream reports. For all three of these word strings, the percentages are lower from ages 12 to 17 and from ages 23 to 25 than these are between ages 18 and 22. This point is best illustrated with the combined word string for hobbies and interests, for which the range is 34.9% to 54.5% between ages 12 and 17, 59.1% to 73.6% between ages 18 and 22, and 46.6% to 57.8% between ages 23 and 25. However, there is enough variation from year to year in the percentage of dream reports with at least one mention of a popular culture term that there are no absolute 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 that the frequency of the appearance 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.

### **Sexuality in Izzy's Dreams and Waking Thoughts**

Izzy has active sexual involvements in a few of her dreams from the outset of her dream series. In a dream at age 12, she saw a girl in a movie having sex, and in another dream at the same age, Izzy "kept kissing" a boy she was going out with (in her dream). Then, "he was in the car saying goodbye and I grabbed his head and kissed him." In addition to several dreams at age 13 in which she kissed one or another boy, she also "cuddled" in a romantic way with movie star Tom Cruise, and then thinks she saw Cruise have sexual intercourse with a girl who happened by. In another dream at age 13, she was temporarily male and had sex with a girl: "I was a guy (only for this part) and I was having sex with my girlfriend and I was interrupted." Shortly after she turned 14, she dreamt that she had sexual intercourse with a real-life casual friend, who later became a crush. At age 17, she dreamt that she received oral sex from a man as part of a movie scene.

When we asked Izzy if she ever had any sexual contact with any of her school crushes, she replied that "I never had any physical contact with anyone until age 25, so I never had any sexual contact with any of my crushes." (Because this contact at age 25 occurred only shortly before we received the portion of the dream series analyzed in this article, this experience and its possible relationship to the relatively few dreams that occurred after it are not part of the study because the sample size would be too small for an analysis.) Just to be more certain that she did not have any waking sexual interactions previous to this event at age 25, we later asked if she ever had any relatively casual and somewhat spur-of-the-moment sexual contacts of the following kinds: romantic kissing, fondling, sexual intercourse, or oral sex. She replied that she never had been involved in any sexual activity before she was 25: "Never. I never went out and as mentioned in another answer, I didn't care much for other people so it was never something that interested me."

Izzy's sexual activities in her dreams from age 12 on provide a striking contrast to her shyness and avoidance of any kind of romantic physical contact in waking life until she was in her mid-20s. However, her sexual involvements in her dreams are continuous with her waking fantasies about her crushes.

### **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. Overall, at least one of her two parents appears in 66.7% of her dream reports. When dream frequencies for her mother and father are analyzed in terms of subsets, which in her case are based on school levels to have adequate sample sizes (middle school, high school, and two sets of college reports that are separated

by 4 years), there is 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 response to a general question about how she perceived each of her parents, Jasmine replied:

My mom is a very warm, friendly person, and is quite artistic. I've always felt comfortable telling her anything. . . . When I was growing up, I never really had that many friends, but my mom and I were always pretty close. . . . My dad, on the other hand, is very exacting, stubborn and controlling. There was always an air of seriousness when he would enter a room, and I often felt afraid that saying the wrong thing would start an argument.

Jasmine also dreamt about her two older half-sisters and her older half-brother from her father's first marriage. However, the frequencies were not as great (12.3% for one half-sister, 9.5% for the other, and 10.1% for the half-brother), and the school-level subsets did not show any type of consistency for any of them. When asked about her thoughts concerning her half-siblings, she e-mailed that "sometimes I miss them and remember things we used to do together." She also had two cousins on her mother's side of the family, and several aunts and uncles from both sides of the family. Although none of them appeared as much as the half-siblings, they joined with the appearances of the half-siblings to bring the total number of relatives in at least one of her dream reports to 72.7%. When analyzed in terms of school levels, the four sets of dream reports provide good evidence of absolute consistency for Jasmine's family; just 9.5 percentage points separate the lowest (66.7%) and highest (76.2%) subset.

Turning to friends, acquaintances, and nonfamily adults that she knows personally, at least one friend or acquaintance appeared in 25.8% of her dream reports, and personally known nonfamily adults, including teachers, appeared in 21.2%. In all, personally known people, including all family members, appear in 85.1% of the 664 dream reports, which is almost 10 percentage points higher than the HVdC normative figure of 76.8% for at least one familiar character. When the figures for all personally known people (including all family members) are analyzed in terms of school levels, there is very good evidence for absolute consistency, with a range of 7.1 percentage points (79.5%–86.6%).

### **Prominent Characters in Jasmine's Dream Reports**

Jasmine dreamed about a wide range of prominent characters, both real and imaginary, but not to the extent that Izzy did (overall, 12.7% vs. Izzy's 35.7%). Most of them were well-known popular singers, male and female. The other prominent characters include a few political figures and also fictional characters that appear in movies, such as Snow White, The Little Mermaid, and Pocahontas. Many of these celebrity characters, real and imaginary, appear in Jasmine's dreams in relation to her strong interest in music, which is discussed in the next subsection. Unlike the case with known characters, there is no consistency pattern in the appearances of prominent characters. When all of the prominent characters in Jasmine's dream reports are merged with the lengthy search term for personally "known" characters, then at least one familiar character appears in 86.9% of her



dream reports. This percentage is not much different than the figure for her personally “familiar” characters (85.1%).

All of the percentages that involve the appearance of dream characters in the Jasmine series are displayed in Table 2 as part of a more general comparison of Jasmine, Izzy, and the HVdC female norms for five of the general character categories discussed in this article: family, friends, known characters, prominent characters, and familiar characters. Among several findings, the table shows that both Jasmine and Izzy 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 familiar characters occurs for different reasons. Jasmine dreams more frequently of personally known characters (especially her family), whereas Izzy dreams more frequently of celebrities. Recalling the earlier comments on *p* values and the *h* statistic for effect sizes, the results in this table can be summarized by noting that Izzy and Jasmine differ significantly from each other and from the HVdC normative sample of 500 dream reports from 100 women on virtually all the character indicators, except for “other relatives,” “personally familiar humans,” and “all familiar humans.” The exception to this sweeping generalization concerns the category of “friends and acquaintances,” in which Izzy and Jasmine differ by only 3.4 percentage points, but they both are at least 16.7 percentage points below the women’s norms.

### Jasmine’s Avocations: Audio and Electrical Equipment and Music

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, visual magnifier, and computer. Music is her other strong interest, including using her keyboards and singing. These two general interests are somewhat intertwined in some instances, such as Jasmine using 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 supported 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

Table 2  
*Frequency of Various Character Classes in Jasmine’s and Izzy’s Dream Reports, Compared With the Hall/Van de Castle Female Norms*

Character class	Jasmine ( <i>n</i> = 664), %	Izzy ( <i>n</i> = 4,329), %	Female norms, %
Family	72.7	56.3	33.6
Mother	55.6	34.9	12.6
Father	42.3	19.6	8.8
Parents	66.7	45.6	21.8
Parents and siblings	70.8	53.3	26.3
Other relatives	11.9	15.9	9.2
Friends and acquaintances	39.0	42.4	59.1
All personally familiar humans	85.1	75.9	76.8
Celebrities	12.7	35.7	3.5
All familiar humans	86.9	86.5	78.2

strings are combined, one or both of these interests appeared in 55.1% of her dream reports, which is very similar to the 54.1% of dream reports for Izzy’s avocational interest in visual expressions of popular culture. As demonstrated in Table 3, there is no absolute consistency for either of the word strings when these are considered separately, but there is evidence for absolute consistency when the two related interests are combined (48.7%–62.5%, a range of 13.8 percentage points).

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 lessons during high school, but she bought “a cheap keyboard” while she was away from home at technical school, and 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 and became proficient enough on the piano, and then the organ, to play in nursing homes, hospitals, and churches.

**An Absence of Romantic and Sexual Content**

Sexuality (which the HVdC coding system defines as anything from sexual thoughts to sexual intercourse) appears in fewer than 10% of adult dream reports, and it is even more infrequent in the relatively few teenage dream samples that are available. Even by this standard, the absence of romantic thoughts and sexuality in Jasmine’s dream reports is striking.

For reasons of ethics and respect for Jasmine’s privacy on a potentially sensitive topic, sexuality was not a topic we felt it would be appropriate to ask her about. However, when she wrote to us in the spring of 2017 to offer us her dream reports from the previous few years, we took the occasion to ask “what was new for her,” but this general question was not asked with the hope that she would mention romantic interests.

Along with information on education and her job, she said that she had a “significant other” who is older than she is. She added that they “enjoy each other’s companionship, and similar interests regarding music, electrical and mechanical and scientific things, and we enjoy attending concerts and other community events together.” This provided us with the opportunity to ask a very general question

Table 3  
*Frequency of the Appearance of Jasmine’s Primary Avocations in the Four Subsets of Her Dreams*

Subset	Audio and electrical equipment, %	Music (keyboards, singing, etc.), %	Either equipment or music, %
Middle school ( <i>n</i> = 39)	41.0	17.9	48.7
High school ( <i>n</i> = 268)	37.3	32.8	55.2
College 1 ( <i>n</i> = 261)	39.8	26.4	53.3
College 2 ( <i>n</i> = 96)	28.1	46.9	62.5
Total ( <i>n</i> = 664)	37.2	31.5	55.1

about her possible interest in romantic relationships during high school, which perhaps was not manifested in her dreams.

She replied as follows a few days later:

To answer your question, no, I really didn't 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. I've always seemed to have a rather rich inner life because I could never really get on the same wavelength as my peers. I've also been jaded because of the nature of my parents' relationship, and others that I see in my own family. It was only when I reached about 30 that I realized it would be nice to have a few more close friends my own age, and maybe even explore relationships. So I joined a singles "mingling group" and a few other music-related social clubs.

In this instance, then, the atypically low frequency of romantic and sexual elements in Jasmine's dreams revealed what is very likely an atypically low waking interest in romance and sexuality, which in this instance may be at least in part due to the fact that no one had shown any romantic interest in her that might spark her own interest.

## Discussion

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. However, they are similar in that their dream series provide evidence of consistency for several characters and for their primary avocations (mostly absolute consistency for both of them, and sometimes developmental consistency in the Izzy series). Close family members are the most frequent characters in Jasmine's dream reports for every age period, and for every age period except in the last 3 years of Izzy's series, at ages 23 to 25. In Izzy's case, both her mother and her crushes were frequent throughout her series, and Jasmine's frequencies for her mother and father remained high throughout the series. Then, too, both dreamers had strong avocational interests that persisted throughout their dream series—popular visual media and horror depictions in Izzy's case and audio/electrical equipment and music in Jasmine's case.

In terms of Izzy's relationships with her parents and brother, it is notable that the frequency of appearances by her brother and father began to decline after age 19, when she no longer had a room at her father's house and her brother was living permanently with their father. Then, too, she reported that she developed no crushes after age 22, and the frequency of appearances for any of her past crushes, whether classmates or actors, also declined after that age. Recall also that she decided to move to a city in another country at age 22, where she stayed for 14 to 15 months. It is also of interest that there was a steep decline in dreams that included her mother starting at age 23. If this were a detailed study that was complemented by personality tests and personal interviews, these various changes in her dream report might lead to the hypothesis that age 22 may have marked a psychological turning point in her waking life as well as her dream life. However, for a combination of practical and ethical reasons, there are limits to what can be learned from quantitative studies of dream series such as those Izzy and Jasmine kindly provided.

Izzy and Jasmine are very similar in waking life in that they report that they never engaged in any sexual activities during high school or their college-age years. The evidence presented in the Results section strongly suggests that their assertions on this issue are candid ones. Readers are, of course, free to assess the veracity of Izzy's and Jasmine's statements about their past sexual behavior in whatever way they may wish. The important conceptual point is that the concern in this research is with the relationship between dream content and waking thoughts, not waking behavior. Izzy and Jasmine could not be more different on this issue, because Izzy often daydreamed of sex and Jasmine did not. In both instances, there is continuity between dream content and waking thought. Both of these dreamers once again demonstrate the overriding importance of imagination, not waking reality, in dreaming.

Focusing exclusively on Izzy for a moment, her interactions with her crushes in her dreams also demonstrate the point made in the previous paragraph: The frequency of a character's appearances in a dream series does not relate to the frequency of interactions with the person in waking life. Izzy seldom interacted with, or even personally knew, the crushes she dreamed about. This is of course obvious with film celebrities, but it is equally true with all but a few of the classmates on whom she developed crushes. Even in the case of the crushes she actually knew personally, her real-life interactions with them were few and superficial. On the other hand, when she lost interest in one or another crush, whether she saw them frequently around school or not, the frequency of his appearances in her dreams declined.

Turning again to the similarities between the Izzy and Jasmine findings, they are also similar in that they dreamed most frequently about their mothers, and both of them considered their mother to be the person they would turn to in waking life if they needed comfort, even though Izzy repeatedly mentioned that she did not have a warm or close relationship with her mother, especially in her preadolescent and early teenage years. In keeping with this finding, a study using network techniques to examine character networks in five different dream series revealed that there was always one character that stood out as the most central character in the dreamer's mental social network (Han, Schweickert, Xi, & Viau-Quesnel, 2016).

Izzy and Jasmine are outliers on many character categories compared with the women's normative sample, and their specific avocations may be somewhat unusual as well, but their dream series are not outliers. In fact, their differences from each other and from the norms are another reason why their dream series, especially when taken together, and when they are combined with the results of numerous studies of adult dream series, provide strong evidence that there is consistency over time and continuity with waking personal concerns in the dream lives of human beings from their teenage years through old age.

## Conclusion

The extension of consistency and continuity to the teenage years in this article is first and foremost based on the findings for consistency and continuity in the lengthy dream series provided by Izzy and Jasmine. However, it should be recalled

that these new findings also build on and replicate the findings on consistency at ages 14 to 15, 28 to 29, and 61 to 62 in the dream series volunteered by a retired humanities professor given the pseudonym “Phil” and on the findings on continuity in “Bea’s” dream reports at ages 14 to 15 and in her college years (Bulkeley, 2012; Domhoff, 2018, pp. 95–96, 145–154). The consistency in Kenneth’s 2,022 dream reports, recorded during his first 3 years of college, is also important in establishing that there is consistency in dream content well before the age of 25 (Domhoff, 2018, pp. 93–95).

The descriptive empirical findings on the consistency and continuity in dream content from adolescence to old age join with the replicated developmental and adult findings on dream content from decades of laboratory and nonlaboratory dream research as a solidly established result. In the case of dream series, these provide invaluable unobtrusive windows into the vast and largely unrecalled— or soon-forgotten— dream life that most adolescents and adults experience several times each night.

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