

# Focus upon relational issues in the dream lives of individuals in liminal times of ‘crisis’: Can developmental theory help us better understand dreams?

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*Summary.* Two theoretical propositions have been widely adopted by many in the field of dream research within the Continuity Hypotheses of dreaming. This hypothesis posits that waking concerns and daily activities are reflected in individuals’ dreams, and, that there are patterns of consistency/repetition in dreams over long periods of time. In the current study, the researchers argue that developmental theorists such as Erikson (1950) and Hinde (1997) may provide additional theoretical insights when considering the continuity and consistency of dreaming, in that these theorists argue that certain developmental stages centre upon discrete and predictable ‘crises’ or developmental tasks. A total of 441 individual dreams from the dream journals of 27 senior undergraduate students were coded and analyzed through a combination of quantitative (cluster analysis) and qualitative (content coding/phenomenological) methods. Results indicate that dream patterns were consistent with the Continuity Hypothesis, in that waking concerns were represented in dreams. It was also noted that the dream content analyzed indeed followed patterns of concerns that were consistent with developmental theories. The adopted methodologies and subsequent analytical techniques, such as cluster analysis, could be very useful in future studies.

*Keywords:* Dreams, continuity hypothesis, cluster analysis, Developmental theory

## 1. Introduction

Freud argued that our dream lives reflect issues and concerns in our waking lives (Freud, 1899/1976). He proposed that dreams were an avenue – or as he coined ‘the Royal Road’ to explore, through the therapeutic process, repressed and unconscious wishes and activities of the mind. Individuals interested in the formal study of dreams and the implications that dreams have upon waking life (and, perhaps vice versa) have used Freud’s observations as a launching point to aid in developing strategies to capture such insights. Arguably, one of the more influential researchers in the field, Calvin Hall explored connections between waking and dreaming lives using empirical methods (e.g., Hall, 1951; Hall, 1953; Hall, 1964; Hall, 1966). In his work with Robert Van de Castle, Hall developed a quantitative content coding system that captured dream contents into settings, objects, characters, interactions, emotions, and several other categories (Hall & Van de Castle, 1966). Bell and Hall (1971) articulated this connection between waking and dream lives as the Continuity Hypothesis.

Over the years this premise has inspired considerable research, and empirical studies that largely support the conti-

nuity hypothesis of dreaming (Dale & DeCicco, 2012; Clarke, DeCicco, & Navara, 2010; DeCicco, et al., 2010, MacKay & DeCicco, 2020; Schredl & Hofmann, 2003; Schredl & Reinhard, 2012; Zanasi et al., 2012). The range of research is astounding – with researchers examining continuity of mundane/everyday events such as musical activities/musical dreams (Vogelsang et al, 2016) to the beliefs that dreams contain important information to waking life issues including health, mood and self-construal (DeCicco & Higgins, 2009; DeCicco, et al., 2010; King & DeCicco, 2009) to explorations of connections between psychological problems and personality/therapeutic interventions and dreams (Roesler & Barrett, 2018). Maggiolini and colleagues (2010) investigated the connection between (typical) dreams and recent life episodes (waking life activities), specifically parsing some issues of continuity and discontinuity between waking and dream life. These researchers found that there were continuities between dream/waking lives in the domains of aggression, sexuality, loss and taking an exam. These same researchers also found that affective relational issues were frequent ‘typical’ dreams. Recently, researchers have demonstrated that dream imagery are reflective of waking events such as the Covid 19 pandemic (MacKay & DeCicco, 2020). Needless to say, there is a robust corpus of research exploring the notion of continuity between waking life and dream life, but what of consistency of dreams over the lifespan?

Hall (Hall, 1953a; 1953b) argued that there would be consistency/repetition of same elements in a person’s dreams over a long period of time, which he terms the consistency hypothesis. Domhoff and colleagues (2020) described several studies and have reported that dream content is consistent over years and even decades. However, Coté and colleagues (1996) compared dreams of women below and above 40 years of age and noted differences in activity

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Submitted for publication: January 2021

Accepted for publication: August 2021

DOI: 10.11588/ijodr.2021.2.78304

levels and participation in dreams as well as issues of autonomy and achievement striving increases due to age and less emotions and negative dream outcomes when compared to the younger cohort. St-Onge and colleagues (2005) also compared dreams between young and late adulthood females, collected in two conditions – dreams recorded at home and in the laboratory. Amongst their various findings, these researchers found that while there were no differences in life satisfaction between the two age cohorts, there were significantly less negative emotion/lower emotional intensity in the older women's dreams when compared to younger participants – however, only in the home dream condition. Yu (2011), found that, when comparing upper-secondary school students with university aged students, the overall profile of dreams (prevalence and frequency) between the two groups were highly similar. However, the researcher did notice some 'nuanced development idiosyncrasies' between the two groups. These differences could be connected with the waking concerns/experiences of the samples. For example, the dream themes of 'being inappropriately dressed' ranked higher with the secondary school aged participants than university students, whereas the university student group experienced greater frequency of dreams revolving around sexual experiences than their younger comparison group.

Lortie-Lussier and colleagues (2000) conducted a longitudinal study examining the consistency of dreams over three intervals (10, 15 or 17 years). They found that while there was consistency between two domains, friendly and aggressive interactions, this consistency did not necessarily extend to other domains under consideration in the study. Dale, Lortie-Lussier and De Koninck (2015) conducted research to explore whether women's dreams differ across the lifespan. Using a cross-sectional design, the researchers compared five cohorts, based on age of participants, submitting their content analysis findings to trend analysis across the cohorts. These researchers found decreases (linear trends) for female and familiar characters, activities, aggression and friendliness. The authors go on to argue that these patterns of change reflect social/developmental theories and the findings are consistent with the continuity hypothesis. Using similar design, coding and analytical strategies, this same team of researchers explored the dreams of males to determine any ontogenetic patterns that could exist (Dale, Lortie-Lussier and De Koninck, 2017). Again, the researchers found that the patterns of dream imagery appeared to match on to developmental patterns as proposed by various social theories. Of particular note, was a predominance of aggressive dream imagery in the adolescent male cohort which decreased over time.

Maggiolini and colleagues (2016) conducted a study of adolescent and young adult dreams and waking life narratives. One thousand participants were recruited by the researchers to provide one 'most recent dream' and a 'impressive or striking' recent waking life episode. These two sets of data were coded, and frequency of word usage calculated. Using cluster analysis as the primary method of analysis, the researchers identified five thematic clusters of dreams (dreams of fear and flight; school dreams; sport competition dreams; dreams of attack and threatening; and, gravity and spatial disorientation dreams) and five thematic clusters of waking episodes (fun with friends; competition and success; significant emotions; family relationships; and, accidents and diseases). Maggiolini and colleagues were

able to identify various differences in number of occurrences/prevalence in these clusters for both gender and age. For example, dreams of competition and sport were mainly experienced by males, episodes of fun and friendship were more prevalent with the adolescent group. The analytical approach adopted by the researchers (word analysis) allows for a parsing of dreams at the phenomenological level and comparison between patterns of dream and waking life and an exploration of 'typical dreams' but does not necessarily capture or address the more interpretive of symbolic elements of the dream lives of participants.

Revonsuo, Tuominen and Valli (2015) noted that social interactions are 'a universal and abundant feature of human dream content' (p. 28) and are clearly connected to our waking life experiences. Revonsuo and colleagues have proposed that dreams are not necessarily a solo human process, but that dreams are also inherently a social experience, and that dreams can be understood as a simulation of our social reality. These researchers/theorists have proposed an overarching theoretical model, the Social Simulation Theory (SST) which considers evolutionary, biological, cognitive and sociocultural factors in positioning our understanding of social experiences of dreams (see Revonsuo, et al, 2015).

## Developmental Theory

As already noted, a consistent and robust association between dreams and relationships has been observed in dream research. These connections are not all that surprising to developmental psychologists, with researchers such as Robert Hinde (1997) proposing that individuals develop a sense of self, norms, values and beliefs through a process of dialectical relationships. Hinde goes on to argue that these dialectical relationships occur with other individuals (e.g., attachment figures, parents, family members, friends, etc.) and sociocultural institutions (e.g., religion, churches, etc.) over the lifespan of the individual. It logically flows from Hinde's theory and the work of Hall and colleagues that relationships, in general, should be consistently present in peoples' dream lives, as these relationships are central to our psychological development. However, according to the continuity hypothesis, the actual content/context of those dreams, should change as a function of the different psychosocial events or crises in which the individual engages over the lifespan.

Erik Erikson, a psychoanalyst trained by Anna Freud, developed a theory of psychosocial development through the lifespan. Rather than adopting Freud's focus upon psychosexual development in the earlier years of a child's development, Erikson argued that human personality continued to develop beyond early childhood. The mechanisms of these changes revolved around resolutions of intrapsychic existential 'crises' (Erikson, 1950/1985) and rather than focus upon sexual issues, like Freud, focussed upon relational and/or social contexts as the impetus for change. Erikson articulated that there were eight such crises that individuals worked through across the lifespan; and, that there were specific developmental lifespan stages focusing upon a specific crisis. He argued that personality depended directly upon how individuals resolved existential crises like trust, autonomy, initiative, industry, identity, intimacy, generativity and ego integrity. For example, according to Erikson, the development of identity becomes especially salient during

adolescence where individuals navigate through various relational issues/social interactions leading them to explore their independence and create a sense of self. Depending upon how this psychosocial crisis is resolved, individuals can either develop a strong sense of self (identity) or feel confused or insecure about themselves and how they fit into society (role confusion). Upon resolving this stage, Erikson argued that individuals would move to the next stage, the search for intimacy, finding a life partner, versus isolation.

Researchers like James Marcia (1973) built upon Erikson's work on adolescent identity development and described four ego identity/intimacy statuses: Identity Achievement, Moratorium, Foreclosure and Diffusion. Originally, Marcia conceptualized identity development as more progressive developmental terms, in that adolescents moved through these stages. More recently his theory has been considered more descriptive and categorical in nature. Often focusing upon peer/parental relationships as reference points (Tarrant, 2002; Ragelienė, 2016), adolescents navigate through a tension of two factors – commitment to and exploration of values, beliefs and ideologies. Marcia, like Erikson argued that 'crises' serve as catalysts in creating internal conflict, causing adolescents to examine and question their values, beliefs and life goals.

Erikson's theory is a useful framework in understanding the importance of adolescence in the development of identity. Subsequent researchers and theoreticians have examined the importance of social-cognitive theories in examining the processing and examination of information as it relates to identity (Berzonsky, 2008); the roles of societal expectations of parents, peers, employers, etc. on meaning making processes (Adamson & Pasley, 2013); the importance of 'high-quality' and satisfying relationships upon identity development (Walsh, Harel-Fisch & Fogel-Grivalds, 2010) and the positive outcomes of better mental health and psychological well-being as a result of these relationships (Dumas, et al, 2009). Researchers have also used Erikson as a launching point to explore non-relational influences upon the development of identity in adolescence. Coté (2018) discussed the impact of changing cultural conditions and societal influence on youth development. Kay (2018) explored the usage of technology and social media upon adolescent identity, while others explored the ways in which globalization, migration, power, privilege and oppression influence the identity of adolescents from minority groups (Syed & Fish, 2018; Rogers, 2018; Alberts & Durrheim, 2018).

While the current discussion has focused upon general adolescence as a developmental stage it is worth noting that there are significant differences in that development due to gender. For example, Rose and Rudolph (2006) noted that girls place a higher value on social goals, report stronger same-gender peer attachments and are rated as more prosocial than boys. Young females also seem to display more social evaluative concerns than males as they tend to reflexively incorporate opinions of their peers (Rudolph & Conley, 2005). It has been argued that adolescent females may be more relationally oriented than males (who are more goal oriented) (Su, Rounds & Armstrong, 2009). Female same-sex friendships in adolescence are characterized by greater intimacy, validation, caring, relationship repair, self-disclosure and sharing of difficulties; whereas males are marked by more friendly competition, risky behaviours, inhibition of tender feelings and intimacy (Perry & Pauletti, 2011). According to Costa, Terracciano & McCrae

(2001) females report scores higher in self-perceived personality traits such as neuroticism, agreeableness warmth and openness to feelings, whereas males report higher scores in assertiveness and openness to ideas. Researchers have noted gender differences in scores and domains of competence beliefs (Harter, 2006), body image (Harter, 2006), and self-esteem in early adolescence (Cross & Madson, 1997).

Responding to various observations that individuals between 17 and 25 years of age did not necessarily map well upon Erikson's (1950/1985) theory, Arnett (2000) proposed an alternative developmental stage – emerging adulthood. Arnett argues that in industrialized countries such as Canada, the late teens through to mid/late twenties are periods of frequent change in which "various possibilities in love, work, and worldviews are explored" (p. 469). This theoretical perspective posits that it is no longer normative for people to settle into long-term roles, but this period is one of change and exploration. It is also a time during which young people engage in education/training opportunities, laying the foundation for future adult aspirations (e.g., career). The stresses experienced by people during this developmental time can be considerable. It is important to note that, similar to Erikson, Arnett argues that this concept of emerging adulthood should not be construed as universal or immutable but is socially and culturally constructed. It is therefore important to examine the cultural and social forces at work in the process of navigating this stressful situation.

## Purpose of the Study

There are several objectives of the current study: 1) to examine the contents of dream journals of undergraduate students enrolled in a fourth year course on dreams and dreaming and see if such dreams map onto developmental theories; 2) use a combination of qualitative and quantitative methods of analysis when coding and discussing the data collected; 3) contextualize the findings in light of theories of human development – specifically those theories of Erikson and Arnett as they relate to waking life 'crises' and interpersonal relationships.

## 2. Method

### 2.1. Methodological Positioning

There are a range of qualitative methodologies available to researchers (e.g., Ethnographical, Narrative, Phenomenological, Grounded Theory, Case Studies, etc.). Many of these methodologies can then be embodied by specific methods (e.g., content coding, narrative analysis, interpretive phenomenological analysis, etc.). Researchers using qualitative methodologies often adopt one of two approaches when analyzing and interpreting data: theory driven (or top down) or data driven (bottom up). There are also possibilities of combining or co-opting several qualitative strategies/methods/methodologies as long as they are epistemologically compatible. The researchers of the current study were guided by Phenomenological approaches, specifically thematic analysis and used content coding during data analysis. As far as data collection methods, Bulkeley (2018) noted that analysis of dream journals to be productive and useful in that word usage in dreams was clearly connected to waking life. These approaches are consistent with a data driven or bottom up analysis and interpretation.

It has been argued by Guest and McLellan (2003) that cluster analysis can be a useful, and compatible, tool when researchers are organizing and synthesizing large textual data sets and utilizing content analysis strategies. As discussed above, other researchers have used cluster analysis, oftentimes incorporating other data reduction strategies (e.g., factor analysis), to analyze large dream datasets (e.g., Maggiolini, et al., 2016). Research projects like Maggiolini and colleagues are also rooted within a Phenomenological approach, using content coding, word analysis and word usage frequencies when examining data. These researchers used the most recent dream/waking episode method of collecting and analysing data and did not incorporate any interpretive or symbolic elements within their discussion.

Guest and McLellan (2003) argue that combining cluster analysis and a more qualitative thematic analysis in studies allows for the 'big picture' to better emerge and assist researchers reduce potential a priori biases and increase analytical robustness in the process. Within the current study, the researchers attempted to broaden the 'traditional' use of cluster analysis to include qualitative analytical elements, and include some interpretive - how dreamers make sense, bring meaning to, or interpret their dreams - into the data set. The researchers also wanted to broaden the data to include a broader number of dreams per participant recorded over a longer period of time, rather than focus upon the most recent dream approach.

## 2.2. Procedure

### 2.2.1 Recruitment

Participants were recruited from a fourth-year Undergraduate course on dreams and dreaming at a small university in Southern Ontario, Canada. As part of the course requirements students were asked to keep a detailed weekly dream journal. The first author attended the first class of the course to outline the proposed research study and recruit prospective participants. To avoid any appearance of coercion, the course instructor (second author) left the room while the information session/recruitment occurred. The first author asked if participants were willing to provide their dream journals for research purposes. A signed letter of informed consent was collected from those willing to participate at that time.

In order to allay potential concerns of coercion and the 'muddying' between a course evaluative component and independent research, several strategies were adopted: 1) the course instructor was completely blind to participant involvement in the study; 2) at the end of the semester, prior to the dream journals being submitted for grading, those who had previously consented to participate in the study were contacted to confirm if they were still willing to submit their journals; 3) once all dream journals were submitted to the course instructor, the first author collected them and took copies of the journals of those willing to participate returning all journals to the instructor to ensure that they remained blind to those participating/not participating in the study; and 4) data analysis of the journals did not begin until all grades for the course were submitted by the instructor.

### 2.2.2 Data Collected/Measures

A simple demographic form was collected in addition to the dream journals. There were two course requirements for the

dream journal that are salient to this discussion: 1) participants were asked to immediately record upon waking any dreams that they could recall (over a 12 week semester); and, 2) every dream recorded should be subsequently 'analyzed' by the dreamer using the Storytelling Method (STM, DeCicco, 2007). The Storytelling Method of dream interpretation expands upon established methods of interpretation (DeCicco, 2007). Essentially, the dreamer is asked to reflect upon the dream and then identify key words/phrases within their written version of the dream. The dreamer is then asked to use those key words/phrases as part of a new narrative constructed by the individual. The final step in the process is to ask the dreamer if there is any 'discovery' as to the meaning of the dream and connections to the dreamers' waking life. There appears to be significant relationships between word associations, the story that was constructed and discovery (DeCicco, 2007; King & DeCicco, 2007).

### 2.2.3 Description of Participants

Twenty-seven students (25 self-identified as female, 2 self-identified as male) volunteered to participate in the study. The average age of the participants was 21.8 years (SD = 0.88). All participants were in their fourth year of their Undergraduate degree and in their final semester of study. The majority of participants (14) identified Canada as their country of birth (USA = 2; Africa = 1; no response = 10).

### 2.2.4 Coding Process

According to Guest and McLellan (2003), the use of qualitative methodologies such as thematic analyses or Grounded Theory of large textual bodies of data can easily become unwieldy and perhaps become focused upon minutia rather than recognizing the 'bigger picture.' This focusing upon certain elements or domains within the various texts can, in part be understood, as researchers who conduct thematic analyses become increasingly familiar with the data and can become somewhat fixated upon certain aspects of the emerging narratives captured by the coding process. A total of 441 individual dreams and corresponding interpretations/discoveries were coded. Participant dream journals ranged in the number of dreams recorded (6 – 36), with an average of 16.3 (SD = 7.77) dreams per participant.

In the first round of coding, the researchers adopted an iterative process, developing structural codes in order to provide a context in which to interpret the dreams. All 441 dreams were coded in four domains: 1) dream context (broadly, what the dream was about); 2) cast of characters (who was present in the dream); 3) physical space/activity (where the dream occurred, what was happening); and, 4) the global emotional tone of dream (the emotional valence of the dream, i.e., neutral, negative, positive). The discovery section of the STM was coded in two ways: 1) was discovery made (were the participants able to make connections between their dream and waking lives); and, 2) the global emotional tone of the discovery (i.e., neutral, negative, positive).

Within the first round of coding – especially for the first three domains above, the researchers adopted an intentionally broad coding approach. Trained research assistants worked through each dream submitted by the participants and constructed a data file within each of the above four domains. For example, if in the first participant's dream a grandmother was present, the category 'grandmother' was

created in the cast of characters section, thereafter, if grandmother appeared in a subsequent dream it was given a '1' (present) and if not, a '0' (not present). As can be imagined, the data file became quite large with a number of emergent categories. To confirm consistency in the coding process, 15% of dreams were randomly selected to be independently coded by another research assistant working in the research lab. Due to the nature of the coding strategy, there was considerable inter-rater agreement. Kappa correlations were calculated with values consistently above 0.90 indicating that agreement between raters was approximately 85% or higher.

In order to produce a less cumbersome data set, a combination of tetrachoric correlations and further interrater agreement was used in the second round of coding in order to construct collapsed codes (see Table 1). It should be noted that the frequencies outlined in Table 1 will not always total 441 (the number of dreams analyzed) – the reason for this revolves around issues such as multiple individuals 'appearing' in the dream (each with their own count) or multiple physical locations present in the dreams.

The dream journals were also coded for two additional elements, was physical movement (e.g., walking, bicycling, hiking, etc.) present in the dreams (again adopting a binary coding of present/not present) and did the dreamer make explicit connections between their dreams and discovery/waking life (yes/no). Approximately 50% of dreams contained explicit movement (no = 218; yes = 223). Approximately 83% of dreams were clearly connected and discussed with the discovery component of the STM (no = 75; yes = 366). The connection between dreams and discovery did not appear to be overly systematic to particular dreamers. This finding is not particularly astounding as the course activity was explicitly designed to encourage this very process. In fact, Schredl (2003) argues that dream journaling facilitates increases in dream recall. Finally, the researchers

wanted to code for clear/explicit connections made between dreams, discovery and waking life. These findings were a little less clear cut with approximately 39% (or 173 dreams) of participants making a clear connections between their dreams, discovery and waking lives; approximately 31% (or 138 dreams) had no clear connections between the three areas; and, approximately 30% (130 dreams) were unclear/ambiguous.

### 2.2.5 Data Analysis

The researchers followed the multi-stage thematic analysis using cluster analysis outlined by Guest and McLellan (2003). Following the coding process outlined above, the researchers constructed a binary (m x n) matrix with participants' dream elements represented in the rows and the constructed codes captured in the columns. Often cluster analysis attempts to classify or cluster respondents, but the method adopted in this study sought to identify connections between the coding variables themselves. The use of cluster analysis can help the researchers in constructing any linkages between codes by guiding and corroborating any qualitative analytical processes. Cluster analysis also provides data in a clearly defined cluster providing a visual tool for interpretation.

As researchers, we were not interested in determining the weight or frequencies of the dream elements captured by the coding process, but rather wanted to examine the presence of the dream elements across all the dreams captured in the journals (hence the binary present/not present in our coding scheme). According to Guest and McLellan (2003) this approach "obviates the potential bias that would occur, for example, if a code were repeatedly applied at a high rate to only one respondent . . ." (p. 194). The constructed matrix was then uploaded into SPSS (version 23) for analysis. Following upon Guest and McLellan's analytical approach,

Table 1. First and second rounds of coding and corresponding frequencies

	First Round of Coding	Collapsed Codes*
Dream Context (what the dreams were about)	Relationships (260), School (5), Nightmares (24), Conflict/Stress (96), Competition (1), Work (14), Miscellaneous (41)	Relationships (260); Stress (96); Miscellaneous (86)
Cast of Characters (who was present in the dream)	Pets (25), self (13), doctor/nurse (9), boss (15), celebrities (23), neighbours (3), coworkers (26), professors (10), romantic partners/prospective romantic partner (106), stepfather (5), stepmother (2), father (26), mother (52), classmates (18), romantic partner's family (11), aunt (9), uncle (3), grandfather (4), grandmother (5), family general (15), no relationship in waking life/strangers (133), friend's family (16), ex-partner (13), ex-friend/enemy (11), friends (146), brother (13), police/security (6), sister (16).	Strangers (133), friends (146), romantic partners/potential romantic partners (106), parents (60), misc (including extended family, classmates, neighbours, ex-partners, etc.) (211).
Physical Space/Activity	Church (6), unknown (21), work/dream of working somewhere (34), jail/trouble with the law (4), doctor/hospital (17), mall/store/supermarket (56), bar/restaurant (24), hotel (9), home/family home/family cottage (89), other's unexplained home (61), gym (5), school (32), outdoors (117), trip/plane (40), driving (59), party/wedding/special event (30), miscellaneous (27), sexual (12)	Outside/outdoors (117), family home/cottage (89), mall/stores/supermarket (56), trip/planes (40), driving (59), social settings (bar/restaurant/church) (67), places of authority (hospital/work/jail/school) (87), other's homes (61), misc. (unknown/hotel/misc.) (57)
Global emotional tone of dream	Neutral (175), negative (209), positive (57)	
Global emotional tone of discovery	Neutral (126), negative (19), positive (133), not code-able (163)	

\* Collapsed coding was also binary (present/not present) and not additive (e.g., if both mother and father were present in the one dream being coded a code of 1 was given to category parents, not 2). Numbers in brackets are the respective frequencies of appearance of code.

the researchers removed the grouping or overarching structural codes and analyzed the collapsed codes described above (see Table 1 for the collapsed codes used). Guest and McLellen argue that the complete linkage method, a common algorithm for identifying clusters, is the most appropriate method to adopt when working with this type of data. The underlying assumption of this approach is that it works well to identify naturally distinct groupings and “requires no a priori information about the samples, so the tree reflects the largest differences and similarities among the samples” (p. 195).

### 3. Results/Discussion

The above description of conducting the cluster analysis produced a dendrogram (see figure 1). The researchers used the hierarchical cluster analysis to support the process of traditional content/thematic analysis. When considering the dendrogram, the researchers were faced with the possibility of either a three or four cluster grouping of the data. In the end, we decided that a three-cluster solution was more consistent with the thematic findings. The three clusters that emerged from this analysis primarily revolved around relational issues: close relationships, interactions with strangers and interpersonal conflict/stress. The next, and final, step was to construct a ‘interwoven narrative’ that emerged through the analytical process. It should be noted that the cluster analysis provides a broad or overarching assessment of codes that are in close proximity to each other; through the qualitative analysis the researchers observed that several individual dreams did not fall neatly in line with the cluster analysis.

#### Cluster 1 – Close Relationships

*“I was hanging out with my friend, there were lots of people coming and going, but I was sitting there with Kelly chatting . . .”* Participant 14 (female) recounting a dream. The same participant wrote in their corresponding discovery, *“ . . . the importance of staying connected, people come and go, but my friends will stay with me.”* *“I was sitting with my boyfriend talking about our future plans, what was going to come next”* Participant 4 (female) went on to discuss in discovery that *“I’m not sure what’s coming after school, but I hope things will work out.”*

Within this cluster grouping, the context of the dreams seemed to focus upon close relationships specifically on friends and romantic partners. As can be seen by the frequencies of these codes, almost 80% of dreams revolve around relationships in general, with friends (25.8%) and romantic partners/potential romantic partners (16.2%) looming relatively large as cohesive groups of characters within their dreamscapes. Terms such as spending time with friends *“hanging out with my friend and their family’s home”* or *“having a meal with friends”* were common statements when describing dreams. *“A group of my friends came together for a nice meal; I brought my boyfriend with me to meet them. We were all able to connect after a difficult time”* (Participant 10, female).

This focus on friends/romantic partners and liminal concerns is consistent with the theoretical positions outlined by both Erikson and Arnett. Arnett (2000, 2004) identified that emerging adults (aged between 18 to 25 – the age range of this particular group of participants) share distinctive fea-

tures including: more independence from parents than during adolescence, focus upon peers as a source of support and exploration of identity, and the transition from families of origin to finding and establishing their own romantic partners and subsequent families. These features are consistent with Erikson’s developmental theory for this stage of life with the desirable goal of developing a stable adult identity. Remembering that the sample of the study was predominantly comprised of female participants, this cluster is also consistent with research on expected gender differences during this developmental period. During this liminal time of transition from university to other career/life stages the emphasis upon close interpersonal/romantic relationships appears to be very salient. To demonstrate potential gender differences, one of the males participants (participant 17) described a dream where he was wandering aimlessly through the corridors of the university, in later discovery he linked this dream with uncertainty of his upcoming career prospects, *“I hope that my education does open doors for me in the future.”* While, this is only one example, the sentiment appears to line up with gendered expectations of/by males to be more focused upon obtaining goals rather than relational objectives. A word of caution here is necessary, in that research in general supports the notion that adolescents/emerging adults are often focused upon relational dynamics during this developmental stage.

A significant difference between Erikson and Arnett lay within the length of time in which individuals spend making that transition. While several researchers/clinicians conceive this time to be full of ‘potential’ for the emergent adult, others have identified that this developmental ‘crisis’ can lead to a sense of instability, especially as this developmental period can last years or even close to a decade (e.g., Goldsmith, 2018). This extended period of exploration of future life/career possibilities could potentially lead to fatigue or even a sense of ambivalence making the addition of a neutral emotional valence within this cluster relevant and consistent with developmental theory.

#### Cluster 2 – Interactions with Non-Intimate People/ Strangers

*“I was sitting outside in a park. I was sitting alone on a bench watching people walking by me. They seemed to be going somewhere, but I wasn’t sure where. They seemed to be walking with purpose and not talking to me”* (Participant 21, female). In the same participant’s discovery, she reflected that *“At times, I feel a bit ‘stuck’ compared to others, I know that I am going to eventually move, I am going to have to get up and get going.”* *“I was sitting in a bus, surrounded by people I did not know and not sure where I was going. That was okay, I was going somewhere”* (Participant 17, male).

This cluster’s cast of characters included strangers, or those people with no recognizable relationship to the dreamers (comprised approximately 20% of the dreams coded). The physical spaces within the dreamscapes that appeared in this cluster seemed to be outside or outdoors (18%), driving (9%) and trips in general (6%). While the overall emotional tones of the dreams themselves (negative, neutral or positive) were not associated with this particular cluster, the global emotional tone of the discovery tended to be positive and landed within this constellation of findings. This finding is not surprising given the physical spaces and

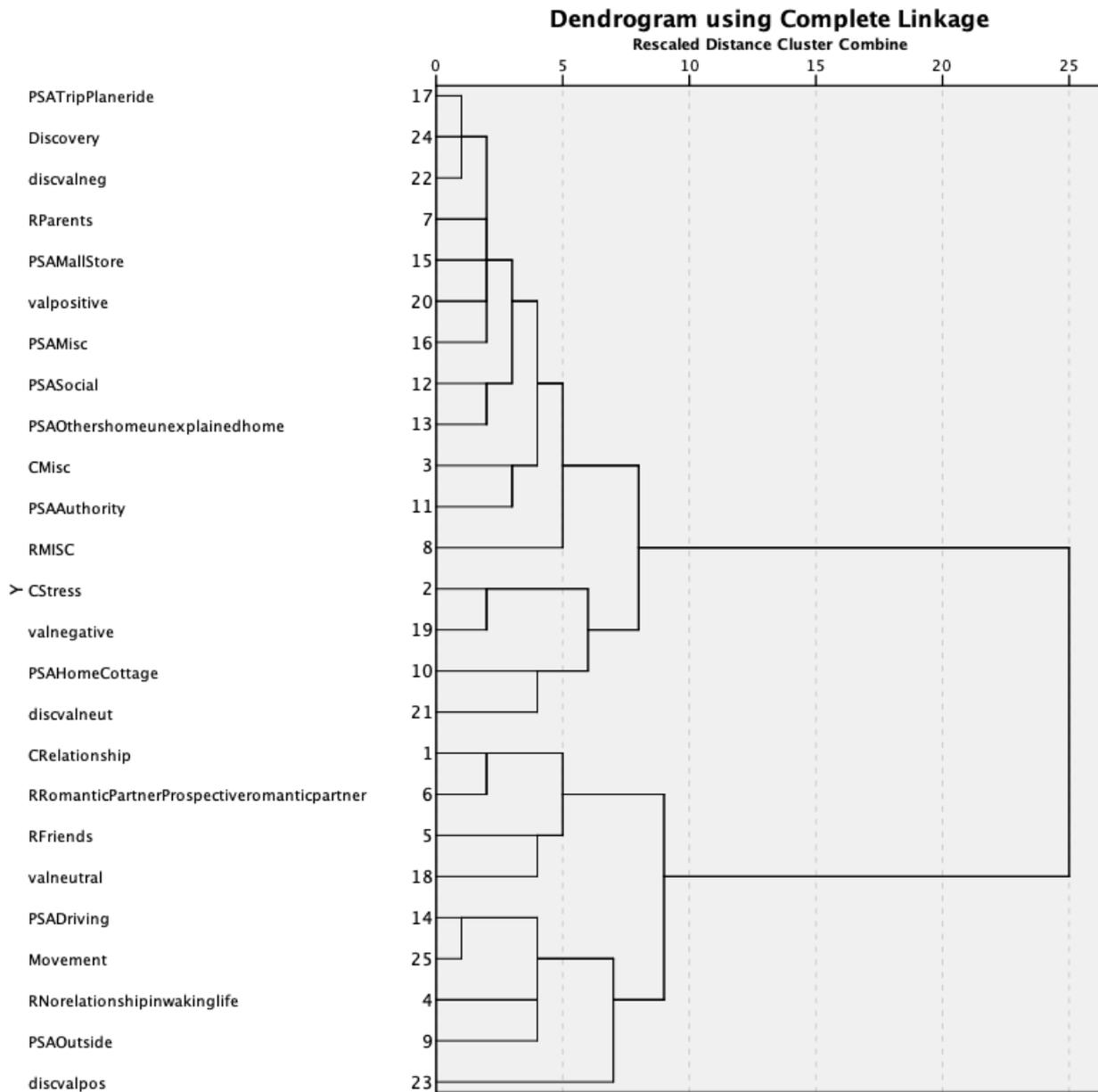


Figure 1. Dendrogram of Cluster Analysis

activities that were associated with this cluster (i.e., driving trips, etc.) the code of movement within a dream was also present.

It would appear that participants viewed these sorts of dreams as insightful to their waking life experience. As noted in the above quote, the participant appeared to be surrounded by strangers, walking by ‘with purpose’ but they themselves seemed to be stuck on the bench, observing their movement. There did not appear to be an obvious underlying emotional tone to the report of the dream itself; however, when the participant reflected upon the dream, they generally appeared to find a positive potential narrative in the discovery. The participant acknowledged their ‘stuckness’ but felt confident that they would be moving with purpose eventually. These sorts of realizations are also consistent with both Erikson and Arnett’s developmental theories.

### Cluster 3 – Interpersonal Conflict/Stress

“We were at a hockey game and we (her brother) began to argue about something. I don’t know about what, but it got nasty! I ran off crying” (Participant 2 female). “I was discussing my grades with a professor, I felt like I couldn’t talk, and they weren’t listening” (Participant 22, female). “I was in my kitchen . . . my sister and Mom got into it, they were fighting (not sure about what) I didn’t want to get involved, but eventually I got angry and left” (Participant 6 female). “I dreamt that I was going for an interview. I was getting ready to go in and began to search for something in my bag and couldn’t find it. I was getting flustered and then the person giving the interview came and got me” (Participant 25, female). In the discovery section, the participant wondered if she was truly ready or prepared for seeking a new career.

As seen in the selected quotes, this grouping of codes clusters around the context of interpersonal conflict and/or stress. Approximately 22% of the dreams collected were coded as being as conflictual and/or stressful. Along with having the most variables, this cluster included the broadest cast of characters than either of the other two clusters discussed. This cluster included parents, extended family, classmates, ex-partners, neighbours, authority figures, etc. (see Table 1 for a sense of people and positions that appeared in the participants' dreams). The settings in which the dreams occurred included - the family home/cottage (14%); social settings – such as bars, stores, malls, church, etc. (10%); places of authority – such as hospitals, jail, school, etc. (13.7%). This cluster also contained the codes for neutral and negative general emotional tones for the dreams themselves. The neutral or negative global emotional tones of any discovery also appeared within this cluster. Interestingly, it would appear that overall discovery was categorized within this particular constellation of codes.

For the female participant going for the interview (as quoted in the section above), it is worth noting that the anxiety expressed in the discovery seemed to revolve around career aspirations and preparedness but was not connected with close relationships, but rather strangers/non-intimate characters. It appears, at least for some female participants within the sample, do dream about performance or the attainment of non-relational goals.

As noted, the notion of crisis is central to Erikson's theoretical model of human psychosocial development. Given that the participants of this study fall within Erikson's stage of identity versus role confusion and/or Arnett's notion of emerging adulthood, it is not surprising that conflict and subsequent stresses are associated with parents, individuals who occupy positions of authority and non-intimate peers. To use Marcia's (1966) parlance in attempting to build upon, and operationalize, Erikson's understanding of this stage – this is a time of tension between the competing priorities of exploration and commitment to various ideologies, values, beliefs and identity. In many cases, young adults examine the values and beliefs of their families of origin and/or authority figures or institutions and work through the process of incorporating, modifying or rejecting those values into their sense of self. This individuation process can manifest in increased intrapsychic conflict as well as a sense of heightened conflict with traditional authority figures.

### The 'Bigger Picture'

From a psychosocial perspective of human development, it is no surprise that individuals' dreams largely focus upon relationships. This finding, while not necessarily remarkable based on existing dream research, is consistent with Hinde's (1997) view that we develop our sense of self, values and beliefs through dialectical processes as we engage in various relationships throughout the lifespan. According to Hall and Colleagues' (1982) Continuity Hypothesis the psychological importance of relationships in the waking life should translate to being center stage in our dream lives. The findings of the cluster analysis support the centrality of relationships within the dreams examined – especially in clusters 1 and 3 (see Table 2 for a list of coding variables for each of the clusters). Within cluster 2 interactions with strangers were associated with a positive emotional tone of the discovery and movement. While not intimate in nature, there are several ways to categorize relationships, and arguably the dreams could still be considered in a relational light (e.g., dreams of professors revolving around grades captures an interaction that may be a transactional relationship, but a relationship none-the-less). That these conflictual situations tend to group together with family members and authority figures is not surprising. According to both Erikson and Arnett, individuals in this developmental stage tend to find that associations with close peers (friends, romantic partners, etc.) to be a more influential referent group when developing identity than family members (especially parents).

In their discussion of their Social Simulation Theory, Revonsuo and colleagues (2015) argue that while researchers should collect and analyze the quantity and quality of social perceptions in dreams, there should also be research conducted upon the quality and quantity of waking life perceptions and understanding of those same participants. Incorporating the Storytelling Method in the current study, where participants are asked to engage reflexively with their dreams and potentially develop an understanding of the meaning and context of the dream itself (make discovery), we were able to make some connections between waking and dream lives of participants. However, due to the epistemological approach and subsequent methodological design adopted by the researchers of this study (exploratory, without specific a priori hypotheses), we are unfortunately

Table 2. A breakdown of variable codes and how they cluster

Cluster 1 – Close Relationships	Cluster 2 – Interactions with Strangers/No Relationship
<ul style="list-style-type: none"> <li>• Context of Dream: Close Relationships</li> <li>• Cast of Characters: Friends and Romantic Partners</li> <li>• Global Emotional Tone of Dream: neutral</li> </ul>	<ul style="list-style-type: none"> <li>• Cast of Characters: Strangers, no recognizable relationships</li> <li>• Physical Space/Activities: being outside, driving/trips</li> <li>• Global Emotional Tone of Discovery: Positive</li> <li>• Movement within the Dream</li> </ul>
<p>Cluster 3 – Interpersonal Stress/Conflict</p>	
<ul style="list-style-type: none"> <li>• Context of Dream: Conflict/Stress; Misc.</li> <li>• Cast of Characters: Parents; Misc. (including extended family, classmates, neighbours, authority figures, etc.)</li> <li>• Physical Space/Activity: Family Home/Cottage; Mall/Stores/Supermarket; Trip/Planes; Social Settings (bar/restaurant/ church); Places of Authority (hospital/work/jail/school); Others' Homes; Misc.</li> <li>• Global Emotional Tone of Dream: Neutral; Negative</li> <li>• Global Emotional Tone of Discovery: Neutral; Negative</li> <li>• Discovery – Discovery made</li> </ul>	

unable to rise to the challenge outlined by Revonsuo and colleagues to test various competing models of social interactions within dreams. However, some of our findings do appear to map on to various elements of their proposed model. That the dreams of our participants appeared to focus upon the most important social connections in their lives and perhaps reflect the importance of those social bonds (as described in cluster 1). We also found some anecdotal support for the notion that dreams may offer the dreamer the opportunity to practice/prepare for social interactions in their dream simulations – for example the dreamer ‘preparing’ for their job interview described above.

As the sample was predominantly comprised of participants who identified as female, the emphasis on close/intimate relationships in general is consistent with both the dream and developmental research discussed in the introduction. However, the thematic analysis challenged the idea that this relational emphasis was monolithic or universal. For example, as described above in the results, there were some examples of females’ dreams centering upon the achievement of career and other pragmatic concerns and overcoming obstacles in obtaining these pragmatic goals. Stage theorists, such as Erikson and Arnett, acknowledge that human development is not a ‘one and done’ process – meaning that while one stage may emphasize a particular area/domain of crisis and resolution, the elements of that crisis are perhaps evident in all other stages over the life course of the individual. For example, the first crisis described by Erikson, revolving around trust versus mistrust might be emphasized and particularly salient during the first years of life, but are still ‘at play’ in later stages. The primary developmental task of adolescents, according to Erikson, is the development of their identity, the process of individuation from parents and preparation for true intimacy. Arnett identified, for a variety of sociocultural reasons, that the youth of today are delaying that developmental task and proposed a ‘new’ developmental stage of emerging adulthood. There are many conceptual overlaps of developmental tasks and goals within these two stages – but both emphasize the importance of relational dynamics (e.g., the reduction of the role of parental involvement in identity development and the shifting to the significance of peers in the self-evaluation process). The findings of this study support this position.

Another psychosocial element at play is perhaps the liminal nature of the waking life of the participants (e.g., completing the last semester of their undergraduate degree and moving on to the next stage) is associated with potential change, the leaving of known relationships for the uncertainty of their future selves as they navigate this transition. Yet, the tone of this transition appears to be hopeful – as represented as an earlier quote of the young woman dreaming of sitting on a bench in the park with many people moving around her but feeling ‘stuck’ herself. In her discovery there was a realization that she had the capacity to move on to the next stage, even if this change would be challenging.

#### 4. Limitations and Future Directions

Perhaps the most obvious limitation of the current study is that it is cross-sectional in design. While a common research approach, cross-sectional studies capture one particular time of human development but only provides limited information on developmental trajectories – consistencies and changes throughout the lifespan. The current study hopefully will inspire others to explore the nature and con-

tent of dreams at various other developmental stages using developmental theories as organizational frameworks in addition to the theories used by dream researchers – specifically the continuity and consistency hypotheses. For example, what are the characteristics of dreams of school aged children between the ages of 6 and 12 years? According to Erikson, the significant psychosocial events during this stage focus upon school activities and the developmental crisis of industry versus inferiority. It would be interesting to replicate the approach adopted by this project to ascertain if developmental patterns exist. Another method, as adopted by Lortie-Lussier and colleagues (2000), could be that researchers adopt a longitudinal approach and track participants across extended periods of time. These future research projects could inform not only the continuity hypothesis but also address questions about the consistency hypothesis. Another limitation of the current study revolves around concerns of gender. The sample of the study consisted predominately of participants who self-identified as female. It would be useful to adopt the same methodological/analytical approach examining a male sample. As discussed in the introduction, the different developmental trajectories due to gender could well lead to different clusters emerging from the data.

The method and subsequent analytical techniques, such as cluster analysis, could be useful in informing future studies. Cluster analysis allows for discreet groupings of variable to emerge a priori and perhaps reduces the potential of committing a Type I or Type II errors when conducting multiple correlations between variables in a data set (see Knudson & Lindsay, 2014 for an interesting discussion on Type I and Type II errors in correlational studies).

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