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Freshman flashbulbs: Memories of unique and first-time events in starting college

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Students from the Lafayette Class of 2011 ($N = 100$) described events that occurred during their transition to college. Three were unique events (receiving their acceptance letter, being left alone on campus, and taking the class photograph) and three were first-time experiences (first seeing their dorm room, meeting their roommate, and attending their first college class). The definitional criteria for flashbulb memories (FBM) was met for all six events; memory reports included what participants were doing, where they were, who they were with, the emotions they experienced, and other idiosyncratic details. Therefore, transitional events are a productive analogue for traditional FBM research. Unique events were rated as more emotional and significant than first-time events, yet both were recalled with similarly enhanced vividness and confidence and both included similar content. Extensions of this method to investigations of other open questions in FBM research are discussed.

Keywords: Flashbulb memory; Autobiographical memory.

Flashbulb memories (FBM) are defined by their content, their characteristics, and the events that lead to their formation. Emotionally intense, personally significant events are likely to result in memories that include details about where you were and what you were doing when the event occurred. You are likely to be especially confident in the accuracy of those details and to remember them with vividness and a sense of reliving for nearly a lifetime. Research on FBM has traditionally focused on surprising, public events resulting in fits of prolific research and long stretches of inactivity on the topic. However, these properties are not necessary for the formation of FBM. Public events were originally used as a convenient way of gathering memories of the same central event from a large sample of participants (Brown & Kulik, 1977). Memories for personal tragedies, such as the death of a loved one, have long been considered valid FBM, just less amenable to systematic investigation than public tragedies. However, the literature does include examples of FBM for personal events (Brown & Kulik, 1977; Pillemer, Koff, Rhinehart, & Rierdan, 1987; Rubin & Kozin, 1984) and for expected events (Curci, Luminet, Finkenauer, & Gisle, 2001; Tekcan, 2001; Winograd & Killinger, 1983). Therefore, if predictable events likely to generate FBM that are common across large numbers of people can be identified, the mechanisms and functions of FBM can be studied more systematically.

The first goal of this study is to do just that: identify reliably recurrent analogues to traditionally unpredictable FBM. One promising area for candidate events includes transitional events. In two investigations of memory for events that occurred in the first year of college, Pillemer

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and colleagues (Pillemer, Goldsmith, Panter, & White, 1988; Pillemer, Rhinehart, & White, 1986) found that such memories were both emotionally intense and personally significant, two determinants of traditional FBM (Talarico & Rubin, 2009). Importantly, these participants were asked only to describe the first memory of their freshman year that came to mind, not memories of particular events preselected for cultural significance and probable salience. Yet in both cases the memories recalled were emotionally intense and personally important. Furthermore, emotional intensity and importance of the event were correlated with vividness in memories of current students (Pillemer et al., 1986) and of alumnae who were 2, 12, or 22 years past graduation (Pillemer et al., 1988). These effects cannot be accounted for strictly by rehearsal, as overt rehearsal rates were low in both studies. Therefore, it seems that memories from the transition to college are remembered better than would be predicted by a standard autobiographical memory forgetting function (Rubin, 1982). My hope is that I can determine particular events that occur in the transition from high school to college that are likely to lead to FBM so that large samples of memories for the same event can be generated. Therefore, differences among these memories can be examined while keeping the time, location, and general event facts constant.

Previous research has identified the first step in the transition process—receiving the acceptance letter from the college one eventually attends—as especially memorable (Rubin & Kozin, 1984; Tekcan, 2001). In addition, the first days on campus include many memorable moments. In their study of alumnae memories, Pillemer and colleagues (1988) report that ''37% of September memories explicitly described activities occurring on the very first day at Wellesley'' (p. 714). Previous research on the role of temporal landmarks in the recall of autobiographical events has also demonstrated increased recall of events at or near temporal boundaries (Shum, 1998). Within student samples there is a greater likelihood of recall for events occurring at the starts and ends of academic terms (Kurbat, Shevell, & Rips, 1998; Robinson, 1986), with the start of the first term of the first year being especially enhanced (Kurbat et al., 1998). By primarily limiting our events to this short window at the start of the first year, we can expect them to result in FBM-like reports.

If this method is viable it can aid in the more orderly advance of the study of FBM. Previous attempts to examine event properties responsible for generating FBM have been particularly limited by the reliance on uncontrolled public events. However, laboratory-based paradigms have been criticised for a lack of ecological validity. The current method allows for identification of anticipated events that differ in key naturally–occurring properties. One uninvestigated difference is that between unique, one-time-only events and salient, first-time events of to-be-repeated experiences. This is an important question because FBM are typically generated in response to rare events (e.g., the assassination of President John F. Kennedy or the terrorist attacks of September 11th 2001) yet the personal memory reported is of *first* hearing the news of these events, allowing for source memory confusion among similar events (e.g., the assassinations of John F. Kennedy vs. the assassination of his brother Robert F. Kennedy) and among extensions of a singular event (e.g., the first vs. third vs. eighteenth time one heard news about 9/11). Often, errors in FBM accuracy (or consistency) are explained as source errors or ''wrong time slice'' errors (Brewer, 1988), where participants are confusing the first time they heard the news with subsequent times they learned about the event. Comparing time-matched, thematically–related events that differ in their status as unique or first-time events allows for the identification of what, if any, differences exist between the two event types on dimensions relevant to FBM research.

Because of their status as significant, emotional, and transitional life events, I expect memories for both unique and first-time events to satisfy the definitional criteria for FBM. As Pillemer and colleagues (1988) state, ''A first-year student may have countless interactions with her roommate in the course of the academic year, but the circumstances and feelings surrounding the initial encounter are unlikely to be closely replicated'' (p. 714). Robinson (1993) identified first-experience memories as particularly informative in revealing the structure of personal history narratives because they serve as ''potential exemplars of a class'' (p. 223) and/or as the start of ''a sequence of varied but thematically related events'' (p. 223). After all, first-time events are unique until subsequent instances occur. This is demonstrated in Linton's (2000) extensive study of her own autobiographical memory, as ''first or early events in sequences ... [exhibited] better encoding and associated recall'' (p. 109), ''In fact,

'X, for the first time' has unparalleled effectiveness as a [memorial] cue'' (p. 111).

To my knowledge, there is only one study that directly compares first-time events and other autobiographical memories. Mahmood, Manier, and Hirst (2004) compared memories of the first loved one to die of AIDS to memories of the most recent AIDS-related death of a loved one. Both first and recent memories were universally vivid and detailed and the number of intervening deaths (as an operational definition of distinctiveness) did not diminish ratings of event importance or surprise, memory vividness or elaboration, emotional change, or rehearsal associated with the most recent death. Presumably, unique events are less vulnerable to proactive interference effects than the recent experiences examined by Mahmood et al.. However, this has yet to be tested. The implicit assumption of FBM research, that there are no differences between unique and first-time events, may be true. Fortunately, the transition to college life presents a group of time-matched, thematically similar unique and first-time events in a readily available adult sample that allow for an empirical test of this hypothesis.

The three unique events selected for this project were receiving one's acceptance letter to Lafayette College, saying goodbye to one's family when being left to live on campus, and taking the Class of 2011 group photograph. Each marks a turning point towards starting a new stage of life markedly different from past experiences. Although, presumably, a student will apply to many colleges and receive several acceptance (and/or rejection) letters, presumably the acceptance letter from the school where one eventually matriculates is particularly salient and unique, if only in that respect.

Similarly, children say goodbye to their parents each time they leave the house, even if they will only be gone for hours. However, starting college marks the independence of the child, the first time he or she is expected to live on his or her own away from the family, and is a much more permanent departure than these previous (or subsequent) goodbyes.

The final unique event in this sample is the taking of a class photograph. A relatively recent Lafayette College tradition, taking the incoming class photo is now firmly ingrained in the Orientation experience and the photographs themselves are prominently displayed in the Student Union, Sports Center, and other administrative buildings throughout the students' 4 years on campus. Although class pictures may have been taken every year of a student's schooling, this particular photo with its approximately 600 participants, taken immediately after convocation and the departure of one's family, seems categorically different from the class photos of elementary or high school. It should also be noted that although we consider hallmark FBM events like the assassination of President Kennedy or the attacks on September 11th to be unique, they too are sadly only instances of larger categories. Terrorist attacks, political assassinations, natural disasters, and other examples of FBM are rare, thankfully, but they are not unique. Therefore, I am confident that the conclusions drawn about unique events from this sample will generalise to the types of unique events described in the traditional FBM literature.

The three first-time events selected were first seeing one's dorm room, first meeting one's roommate, and the student's first college class. Students will presumably spend considerable amounts of time in their dorm rooms, with their roommates, and (hopefully) in classes. All are often-repeated elements of college life. If the previous events are not completely unique, they are certainly less repetitive than the events described here. However, this is not to imply that these events are mundane. The first sight of one's dorm room is an event greatly anticipated by students with a mix of excitement and anxiety about the size, condition, location, and amenities that will be available to them during their time on campus. Similarly, meeting one's roommate is a moment of great trepidation and enthusiasm. Who is this person with whom I'll be sharing my most personal space? Lastly, academics are the hallmark of the college experience and students are often told that college classes are quite different from the high school classes with which they are familiar. Therefore, although no one starts college without any classroom experience, the first college class is an important transitional moment. The first time these events occur can be expected to be a hallmark event in the same way that the first time one heard about the 9/11 attacks is assumed to be especially noteworthy. In these more traditional cases, it is common that people will seek additional information from the media and from other people, that they will share their knowledge and opinions with others, and that discussions of an event of such magnitude will occur frequently. Therefore, I feel that these

events are representative of the types of events actually described in FBM reports in response to the prototypical FBM probe, ''What were you doing when you *first* heard about . . .''.

The goals, then, are to identify a group of recurrent FBM in an accessible population and to use these events to systematically investigate unanswered questions in the FBM literature. Assuming this method is practicable, I will use it to investigate is whether there are differences between unique and first-time experiences in memory content or characteristics.

METHOD

Participants

All members of the incoming Lafayette College Class of 2011 ($N = 598$) were invited to participate in an online study of memory for experiences at the start of their college careers. Of those, 111 responded (18.6%). Only native English speakers (including 6 participants who learned English and another language simultaneously) were included in the final sample of 100 participants (47 of whom were male, $M = 18.46$ years old). All participants who completed the online questionnaire (designed and administered with Vovici Online Survey software, www.vovici.com) were sent a small token of appreciation (valued at less than $2) and a thank you note via campus mail. The study was reviewed and approved by the Institutional Review Board of Lafayette College.

Procedures

The initial invitation to participate in the study where they would be asked to ''remember specific events that [they] experienced at the start of [their] college career'' was sent via email at approximately 4 pm on the first day of classes of the Fall semester. They were told that the study was to be conducted entirely online and that it was expected to take 30 minutes to complete. They were also told that a small reward would be sent via campus mail if they completed the questionnaire. Lastly, a link to the online questionnaire was included along with a deadline for participation.

Reminder emails that included the same invitation and link to the online questionnaire were sent the next day at 9 am and again at 6 pm. The questionnaire was taken offline at midnight of the third day. All data were collected within approximately 60 hours of the most recent event occurrence (i.e., first college class attendance).

Once at the website, participants were asked to set aside 30 minutes to complete the entire questionnaire in one sitting. They were provided with an informed consent form, which they assented to by typing their full name and clicking the ''next'' button to continue with the questionnaire. The instructions told participants that ''we're examining people's memories for important events that occur when starting college. To do this, we will ask you to recall your memory for specific events that students typically experience in their first few months of college''. For each event, participants were asked to recall the event in question, describe their memory for it, and answer a series of questions about the quality of that memory. Participants were informed that they could use initials to represent people or places to maintain confidentiality and that they were free to skip any question(s) that they were unwilling to answer.

The recall questions asked participants to ''Please think back to when you received your acceptance letter from Lafayette College [for example]. Try to remember this event for a minute or so until you have a sense of completion, that you have indeed remembered the event in its entirety and to its fullest intensity''. Participants also answered various rating scale questions about phenomenological properties (reliving, vividness, and setting), emotional properties (affect and intensity), metacognitive properties (belief in the memory's accuracy), and event properties (significance and date) adapted from the Autobiographical Memory Questionnaire (AMQ; Rubin, Schrauf, & Greenberg, 2003). In order, participants were asked how much *reliving* they experienced while recalling the event, how *vivid* the event was in memory, and how well they knew the *setting* where the event occurred, each anchored at ''not at all'' (1) and ''as clearly as if it were happening now'' (7). They were then asked the *affect* (''extremely unpleasant'' -3 to ''extremely pleasant'' 3) and *intensity* (''not at all intense'' 1 to ''extremely intense'' 7) of the event. Next, they were asked how *significant* the event was in their life, anchored at ''not at all'' (1) and ''more than for any other memory'' (7). Participants were then asked if they believed the event really occurred as they remember it (''100% imaginary'' to ''100% real'') to get an estimate

in their *belief* in the memory's accuracy. Finally, participants were asked to *date* the event.

This series of questions was asked in reference to receiving their acceptance letter from Lafayette College, seeing their dorm room for the first time, first meeting their roommate, saying goodbye to their parents, taking their class photo, and attending their first class. This is the chronological order that these events could be expected to take place for all participants, with few exceptions (e.g., reversing the order of seeing one's dorm room and meeting one's roommate). Therefore, the events were presented in this same order for all participants at recall.

Lastly, participants were asked their gender, birth date, ethnicity, race, and English fluency along with contact information for reward receipt and their willingness to participate in future studies, if available. After submitting their responses, participants were thanked for their time and provided with contact information for the experimenter in case of questions.

Content coding

Based on the canonical categories outlined by Brown and Kulik (1977), participants' memories were scored for the mention of *what* activity they were engaged in, *where* they were, *when* the event occurred, *who* else was present, and any *emotions* they felt at the time. These categories were originally identified *post hoc* as those present in at least half of the generated memory reports (Brown & Kulik, 1977). Here, the free recall reports were coded *post hoc*, but the identification of the categories to be coded was decided *a priori*. Additionally, the mention of any idiosyncratic *details* was noted. Memory reports were independently coded by two research assistants naïve to the research hypothesis. Memories for each event category were read separately and no comparisons were made between memories for any individual participant. Inter-rater reliability was greater than 86%, therefore the data from the first coder were used in all subsequent analyses.

The *what* criterion referred to the ongoing behaviour of the participant (e.g., taking notes for first class memories), not to the aftermath of the event (e.g., dining out to celebrate an acceptance letter). The *where* criterion referred to the spatial location of the participant. For first class, satisfying this criterion required specific mention of what particular academic building, where in the building, or where in the classroom; likewise, for memories of first seeing one's dorm room, describing the floor of the building, or a description of the room in relation to the hallway was counted. With the class photo, a mention of where the respondent was seated in the photograph was necessary, not just the site of the photograph. *When* information was counted if the participant referred to the day of the week, a calendar date, a time of day, or the timing of the event relative to what happened before or after. *Who* referred to the explicit mention of another person who was physically present at the time of the memory. For the case of an acceptance letter, 11 participants explicitly mentioned another person was present by telephone and another 5 described "going to tell" another person as part of the event in memory; all were counted as satisfying the criterion. Participants who explicitly stated that they were alone during the event (five for letter, two for dorm) were also counted as identifying others present as were the four participants who mentioned "not knowing anyone" in their first class. The *emotion* criterion referred to the emotions of the respondent, not to the emotions of others. Additionally, the mention of behaviours that implied emotion was included (e.g., jumping up and down upon receiving one's acceptance letter or crying when saying goodbye to one's family). Lastly, an idiosyncratic *detail* was defined as a highly specific aspect of the memory that was not immediately relevant to the situation at hand.

RESULTS AND DISCUSSION

The first question was whether these events from the transition to college life were analogous to FBM. The original, and most lenient, FBM definition for free recall is the inclusion of at least one canonical detail (Brown & Kulik, 1977). By this definition, 97% of the goodbye, photo, and dorm memories and 98% of letter, roommate, and class memories were FBM. In the current study, only one participant wrote a description of an event that failed to include any of the canonical details: Subject 149's memory for taking the class photo was "I sat down, they took three or four pictures with several cameras then we left." All other participants who were classified as not having FBM omitted any description of the event in question. For comparison, only 86% of the personal event memories

collected by Brown and Kulik (1977) met this definition. Of the public events that Brown and Kulik sampled, FBM ranged from a low of 6% for memories of the assassination of civil rights activist Medgar Evers to a median of 39% for the assassination attempt of segregationist US presidential candidate George Wallace and a maximum of 99% for the assassination of President John F. Kennedy. For Prime Minister Margaret Thatcher's resignation, 99% and 80% of UK and non-UK participants, respectively, had FBM (Conway et al., 1994). Lastly, 95% of Berntsen and Thomsen's (2005) respondents had FBM for the invasion and liberation of Denmark in World War II. By this criterion, then, the current memories can be defined as FBM like more traditional examples. However, this is far from the only definition of FBM in the literature.

Defining FBM on the basis of any particular canonical category can be problematic. Differences in participants responses can be "explained by differences in what the informant might reasonably expect the E[xperimenters] to need to know" (Brown & Kulik, 1977, p. 81). Including or omitting information for each question "seems simply to represent intelligent adaptation to a different sort of question" (Brown & Kulik, 1977, p. 81). For example, only 14 participants included explicit details about where the event occurred in response to the question about "first seeing one's dorm room" (see Table 1). The answer, in this case, is implied in the question. Furthermore, "on many occasions when a particular category [is] not mentioned in the free recall (e.g., time or place) participants [can] provide a detailed answer about this category ... [with] probed recall" (Kvavilashvili, Mirani, Schlagman, & Kornbrot, 2003, p. 1022).

Presumably this is true of the current participants as well, but they were not given the opportunity to answer specific questions about each category. This was not done in the current experiment due to the number of events each participant described and the desire to keep the questionnaire to about 30 minutes. This may also be why most investigators have chosen to ask probed recall questions—to ensure complete responding by participants instead of the partial recall encouraged by a more generic free recall prompt and influenced by conversational norms. Looking to the hallmarks of FBM experience, even in the absence of a specific prompt, the majority of participants included descriptions of their emotions and idiosyncratic details for all six events. For some events, as many as 87 of 100 participants included a description of their emotional state or described some unique aspect of the event that was memorable to them. Therefore, in terms of memory content, I believe these events satisfy the definitional criteria.

In addition to memory content, was the quality of collegiate memories comparable to traditional FBM? Specifically, are these vivid memories that participants believe to be extremely accurate? The mean ratings for reliving, vividness, setting, and belief, as shown in Table 2, were above the midpoint of the scale for each event. Participants were extremely confident that these events occurred as they remembered them, with means above 6 on a 7-point scale. By re-examining data from Talarico and Rubin (2003), scores to these same questions asked of participants on 12 September 2001 about the terrorist attacks of the previous day can be compared to the current data. Ratings for reliving ($M = 4.50$, $SD = 1.24$) and setting ($M = 6.13$, $SD = 1.12$) for the tradi-

TABLE 1
Number of respondents who included information for each of the canonical questions

Event	*What activity*	*Where it occurred*	*When it occurred*	*Who was there*	*Emotions experienced*	*Idiosyncratic details*
Acceptance letter	36	61	36	54	87	60
Goodbye to family	62	41	37	90	86	61
Class photo	22	56	9	91	57	87
ONLY	77	83	64	93	94	87
First sight of dorm	42	14	16	57	76	57
First meeting roommate	47	70	85	45	51	71
First class	27	68	25	78	70	67
FIRST	70	82	87	90	89	92

Summary values (only, first) represent the number of respondents who included canonical information for at least one of the three events of that type.

TABLE 2
Mean (*SD*) ratings for each characteristic for each event

	Reliving		*Vividness*		*Setting*		*Affect*		*Intensity*		*Significance*		*Belief*	
Event	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Acceptance letter	4.32	1.48	4.55	1.57	5.94	1.30	6.01	0.96	4.32	1.48	4.50	1.51	6.11	0.97
Goodbye to family	5.61	1.22	5.54	1.20	6.41	0.95	3.53	1.33	5.25	1.38	4.94	1.58	6.41	0.89
Class photo	4.88	1.52	5.05	1.37	6.15	0.99	4.29	1.31	3.55	1.54	2.58	1.53	6.08	1.06
ONLY	4.94	1.02	5.05	1.04	6.17	0.74	4.63	0.83	4.40	1.07	4.04	1.08	6.20	0.70
First sight of dorm	4.97	1.40	5.06	1.32	6.43	0.83	4.91	1.12	4.15	1.51	3.85	1.40	6.24	1.00
First meeting roommate	5.02	1.53	5.03	1.56	6.22	1.20	5.00	0.88	3.74	1.38	3.65	1.36	6.15	1.04
First class	5.21	1.42	5.35	1.40	6.23	0.97	4.52	1.07	3.74	1.49	3.65	1.49	6.19	1.01
FIRST	5.08	1.19	5.16	1.18	6.30	0.74	4.82	0.74	3.88	1.24	3.73	1.06	6.20	0.80
F (1,99)	2.58		1.38		2.94		6.68*		21.63*		7.96*		0.00	

Note: Because the original affect scale ranged from −3 (extremely unpleasant) to 3 (extremely pleasant), scores were transformed by adding 4 to all values. With this revised scale, higher numbers indicate greater positive affect. *$p < .05$.

tional FBM are within the range of means for the six transitional events here. Ratings of belief for the September 11th attacks ($M = 5.92$, $SD = 1.07$) were lower than the mean of any of the six collegiate events, although it is not statistically significantly different from the average belief rating across those six events, Satterthwaite $t(76.5) = -1.71$, $p = .09$. Talarico and Rubin (2003) did not ask the same vividness question that was asked here, but if the average score of the questions about ''seeing it in my mind'' and ''hearing it in my mind'' are computed ($M = 4.99$, $SD = 1.07$), that too is within the range of vividness ratings for the six transitional events. Therefore, in terms of phenomenological and metacognitive properties, there appear to be few differences between the collegiate events and more traditional FBM.

Talarico and Rubin (2003) also asked their participants about the most memorable everyday event from the weekend preceding September 11th, 2001. The current data should be different from these everyday memories just as they were similar to the more typical flashbulb memories. Ratings for reliving ($M = 3.77$, $SD = 1.49$), vividness (as calculated above, $M = 4.36$, $SD = 1.29$), and belief ($M = 5.94$, $SD = .97$) were all lower for the everyday memory than for any of the collegiate memories. Ratings of setting ($M = 6.17$, $SD = .99$) for the everyday memory were within the range of the collegiate memories, and was not significantly different from the average of all of the collegiate memories, Satterthwaite $t(75.9) = .37$, $p = .71$. Therefore, collegiate memories appear to be distinct from everyday autobiographical memories—this is additional evidence for their FBM-like nature.

Emotion is often suggested as a causal mechanism for the increased vividness and confidence in the accuracy in FBM. Therefore, the emotional intensity and affect of the collegiate memories were examined. Not surprisingly, the Talarico and Rubin (2003) participants rated the emotional intensity of hearing about the September 11th attacks approximately a full point higher than any of the collegiate events on the same 7-point scale ($M = 5.31$, $SD = 1.43$). The September 11th memories were also significantly more emotionally intense than the average of all of the collegiate memories, Satterthwaite $t(83.6) = 5.57$, $p < .001$. However, the collegiate memories were each more than a full point higher than the everyday memory ($M = 2.64$, $SD = 1.53$) from Talarico and Rubin (2003). Furthermore, the

everyday memory was significantly less intense than the average of all of the collegiate memories, Satterthwaite $t(77.6) = 6.18$, $p < .001$. Therefore, although the current events are not as emotionally intense as prototypical flashbulb events, they are still more intense than everyday memories.

Emotional affect is more difficult to interpret. Prototypical FBM are of negative events. However, FBM can be generated for positive events just as easily as for negative events (Berntsen & Thomsen, 2005; Bohn & Berntsen, 2007). The average ratings of each collegiate event were all within one point (on a 7-point scale) of neutral, with only one exception; Memories for receiving one's acceptance letter were rated as particularly positive (more than two points above neutral on a 7-point scale). This is not an artefact of averaging as memories for receiving one's acceptance letter had the fewest participants ($n = 3$) who rated the memory as emotionally neutral (a 0 on the original -3 to 3 scale). The other five events (saying goodbye to one's family, taking the class photo, first seeing one's dorm room, first meeting one's roommate, and attending one's first college class), showed approximately a quarter of the participants rating each as completely neutral ($n = 32$, 37, 26, 21, 35, respectively). In seeming contrast to these neutral emotionality ratings, participants often included specific details about their emotional experience in their memory descriptions. Yet, even in those data, 29% of memories excluded emotional details (see Table 1). Therefore, the muted affect seems to be an accurate characteristic of these memories. This is problematic for models that rely on intense, negative emotion to produce FBM phenomena, especially enhanced vividness and confidence in the memory's accuracy.

Significance ratings were also relatively low, at about the midpoint on the 7-point scale. Unfortunately, there are no comparison data from Talarico and Rubin (2003) on this question. Although the content and phenomenological criteria for FBM have been met, these memories do seem to differ from traditional FBM in two characteristics thought to be responsible for producing FBM phenomena: emotionality and significance. I will return to this potential problem when examining differences between unique and first-time experiences.

Are first-time events different from unique events in either content or characteristics? I hesitate to draw firm conclusions from the comparisons of content between unique and first-time events due to the variability in the types of events reported and how the question probes were framed on the questionnaire. However, some generalisations can be drawn if, instead of looking at participants who included at least one canonical category for each event, participants who included canonical category information for at least one of the three events per type are examined. As shown in Table 1, the only difference between the two types of events is that first-time experiences were more likely to include details about *when* the event occurred. These differences (or lack thereof) are confirmed by comparing those participants who included canonical information only for first-time experience or unique events. In other words, participants who included *what* information for at least one of the three unique events but for none of the first-time events, and vice versa, were counted. A total of 27 participants included *when* information for first-time events, versus only 4 who did so for unique events, $\chi^2 = 17.06$, $p < .01$. No other analyses were significant (largest $\chi^2 = 1.9$).

For the characteristics of these memories, a one-way MANOVA with planned contrasts was computed to compare the three unique events with the three first-time events (see Table 2). Looking to phenomenological properties first, there were no significant differences between events on ratings of reliving, vividness, or setting. Furthermore, unique events were no more likely than first-time events to demonstrate enhanced ratings of belief in the memory's accuracy. However, unique events were rated as more personally significant than first-time events. Emotion ratings also demonstrated differences between the two event types. Unique events were rated as more emotionally intense and as including more positive affect than first-time events, although this difference seems driven by the acceptance letter memories specifically.

As discussed above, FBM can be defined by content, characteristics, or the events that lead to their formation. This presents an interesting paradox. Unique events seem to include more of the properties thought to produce FBM (i.e., personal significance and emotional intensity) but they are no more likely to display the hallmark characteristics of FBM (i.e., increased vividness and belief) than first-time events, nor do they seem to differ in content. Therefore, one's conclusion about the effects of first-time vs. unique events depends on the definition of FBM adopted. To my mind, the enhanced vividness

and confidence in the accuracy of the collegiate memories indicate that they are analogous to traditional FBM and these seem criteria imply that there are no critical differences between unique and first-time events. A direct comparison of traditional FBM and transitional collegiate memories is necessary to address this interpretation, but this will have to wait for an unexpected public event to occur, underscoring the principal drawback of traditional FBM research and highlighting the necessity for a more innovative approach.

One alternative explanation of the enhanced recall of the collegiate events may be due to mere recency. If I concede that memories for these events are likely to be high given the short delay between event occurrence and recall of the event, this is no less true of conventional FBM. The specificity is higher and later consistency is lower when initial reports of traditional FBM are obtained within 3 days of the event than when reports are delayed by as little as one week (Winningham, Hyman, & Dinnel, 2000). Furthermore, although most of the events occurred in the days preceding testing, receiving one's acceptance letter occurred months prior (anywhere between December 2006 and May 2007) and yet memories of this event were indistinguishable in content or characteristics from the other five events. Therefore I do not believe that mere recency can account for the enhanced memorability of these events.

I believe that transitional events for first-year college students represent a useful analogue to traditional FBM; the two memory types are alike in memory content and remembering characteristics. Furthermore, transitional events were able to test a critical assumption of traditional FBM research, namely that memories for unique events and for first-time experiences are not different from one another. This hypothesis was partially supported. Unique events were rated as more emotionally intense and personally significant than first-time experiences, but they were not different on any other phenomenological or metacognitive characteristics. In content, first-time experiences included more descriptions of when the event occurred than did unique events, but all other properties of the event were described similarly across event type. Hopefully, the continued use of this method will allow for more systematic examination of the relationship among these variables and others relevant to FBM research. One suggested problem ripe for further investigation is the inclusion of control memories. The identification of appropriate controls has been a problem for flashbulb memory research. Previous attempts have included everyday memories (Christianson, 1989; Talarico & Rubin, 2003; Weaver, 1993), memory for the factual details of the flashbulb events (Bohannon, 1988; Bohannon & Symons, 1992) or memory for everyday newsworthy events (Larsen, 1992). Another possibility with the present design would be second-time events[1]. These would share event features with the flashbulb-like events but would presumably lack the significance and emotionality that characterises the first-time events. As stated above, the ability to differentiate event properties thought to be responsible for producing FBM is a major strength of the current method and the primary reason that I expect research productivity in FBM to increase if this paradigm is widely adopted.

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[1] Thank you to an anonymous reviewer for the suggestion of second-time events specifically.

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