

Long-term Consequences of Flashbulb Memories: Converging Evidence from Three Measures

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Overview

Our study examined flashbulb memory (FBM) for a personal event, specifically, memory for a serious medical diagnosis. We assessed the utility of three measures:

- (1) Independent coders evaluated the narratives using the **Flashbulb Memory Checklist (FBMC)** developed by Lanciano et al. (2018). Scores on the FBMC classified each narrative as a high FBM, moderate FBM, or low FBM.
- (2) We used the ratings provided by participants to assess properties of FBMs (e.g., recollection, vividness, intensity) specified by **Talarico and Rubin** (2007; TR scores), and then classified memories as FBMs (or not) based on TR standards.
- (3) We utilized the **Linguistic Inquiry and Word Count (LIWC)** software to assess different linguistic factors in the narratives. We compared the two measures of FBM and the LIWC subset scores of sadness, anger, anxiety, positive emotion, and negative emotion.

To our knowledge, this is the first study to directly compare the utility of these three measures as indices of FBM.

Participants

Participants included 310 mothers of children with Down syndrome. Mothers ranged in age from 21 to 79 yrs., and their children with Down syndrome ranged in age from 1 month to 52 yrs.

Method

Our online survey included questions about the diagnosis experience along with outcomes measures. We were particularly interested in comparing the composites and subscale scores of two FBM measures and one linguistics measure.

Scoring

Flashbulb memories were scored three ways:

- (1) Each narrative was coded by two independent coders using the FBMC checklist (see Fig 1). Scores ranged from 1 to 25.
- (2) Each narrative was electronically scored using the LIWC software. This software evaluates a number of different measures, including specific emotional tones and other key measures (see Fig 2).
- (3) In addition to providing narratives about their diagnosis experience, participants also rated their memories on different qualities known to distinguish between FBM and everyday memories (TR Scoring; see Fig 3).

Figure 1. **FBMC scoring**

FBM – Checklist	Answer	Scoring				
1. Date	DOB, 39 weeks, 2 days after Christmas	0	①	2		
2. Day		①	1	2		
3. Time		①	1	2		
4. Location	Lake Forest Hospital	0	1	②		
5. Activity	Had just given birth	0	①	2		
6. Weather		①	1	2		
7. Clothes		①	1	2		
8. Other Details	I looked to my husband & the first words out of my mouth were, what did I do wrong?	0	1	2	3	4 5
		6	7	8	9	⑩

**Total Score
SUM = 14**

< 11
Low FBM

11 - 14
Moderate FBM

> 14
High FBM

Figure 2. **LIWC Scoring**

LIWC software assesses key linguistic variables, including:

Negative emotion	Positive emotion
Sadness	Anger
	Anxiety

Figure 3. **TR Scoring**

- **Recollection** - While remembering my son/daughter's diagnosis now, I feel as though I'm reliving the experience
- **Belief** - I believe my son/daughter's diagnosis occurred in the way I remember it
- **Vividness** - I know where I was when I received my son/daughter's diagnosis.
- **Emotional Intensity** - The memory of my son/daughter's diagnosis is emotionally intense.
- **Valence** - The memory of my son/daughter's diagnosis is a positive one.
- **Visceral** - When I recall the memory of my son/daughter's diagnosis, I feel my heart pound or race.
- **Rehearsal** - I have talked about the memory of my son/daughter's diagnosis more than any other memory.

FBMC scores correlate positively with TR Composite scores and TR subscales

TR Scores	FBMC
Recollection	.339**
Belief	.023
Vividness	.179**
Emotional Intensity	.231**
Valence	-.025
Visceral	.202**
Rehearsal	.139**
Composite	.290**

** $p < .01$

However, LIWC scores do not correlate with FBMC or TR composite scores.

LIWC	FBMC	TR
Sadness	-.027	.074
Anger	.086	-.074
Anxiety	.016	.012
Positive Emotion	.023	-.017
Negative Emotion	-.046	.047

Our findings show agreement in FBM classifications across FBMC and TR composites (and TR subscales).

However, the LIWC scores and the valence subscore from TR do not correlate with these composite measures, suggesting that the flashbulb nature of these memories is **not** driven primarily by emotion.