

Commonalities Between Déjà Vu, Involuntary Autobiographical Memories, and Unexpected Thoughts: Investigating Involuntary Thoughts Across the Lifespan

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background:

Involuntary thoughts are a common feature of everyday life and arise spontaneously into the mind

- Involuntary autobiographical memories (IAM):** linked to a specific personal event
- Déjà vu (DV):** a feeling of familiarity to the **situation**
- Unexpected thoughts (UT):** may be unrelated to specific events or situations

questions:

What **phenomenological** and **linguistic** features of involuntary thoughts are most relevant to how individuals experience these thoughts?

What about these features may differ due to **age** and/or **thought type**?

methods:

314 participants: 150 older adults (60+) + 164 younger adults (18-30)

Responses based on prompts for examples of IAM, DV, and UT, and DV + appraisal ratings based on 24 metrics

	Prompt
IAM	Think back to a time when you had a specific memory involuntarily pop into your head.
DV	Think back to a time when you felt strangely like a situation was a re-experience of something that you've experienced before but could not pinpoint why .
UT	Think back to a time when you had an unexpected thought involuntarily pop into your head.

Appraisal Dimensions		
Frequency	Socially immoral	
Cue	Value	
Content	Solve problem	
Timing	Goal	
Unexpected	Self relevance	
Involuntary	Self insight	
New info	Others insight	
Task-unrelated	Positive emotion	
Thought-unrelated	Negative emotion	
Beneficial in time	Emotional intensity	
Beneficial now	Mental image vividness	
Personally immoral	Confusion	

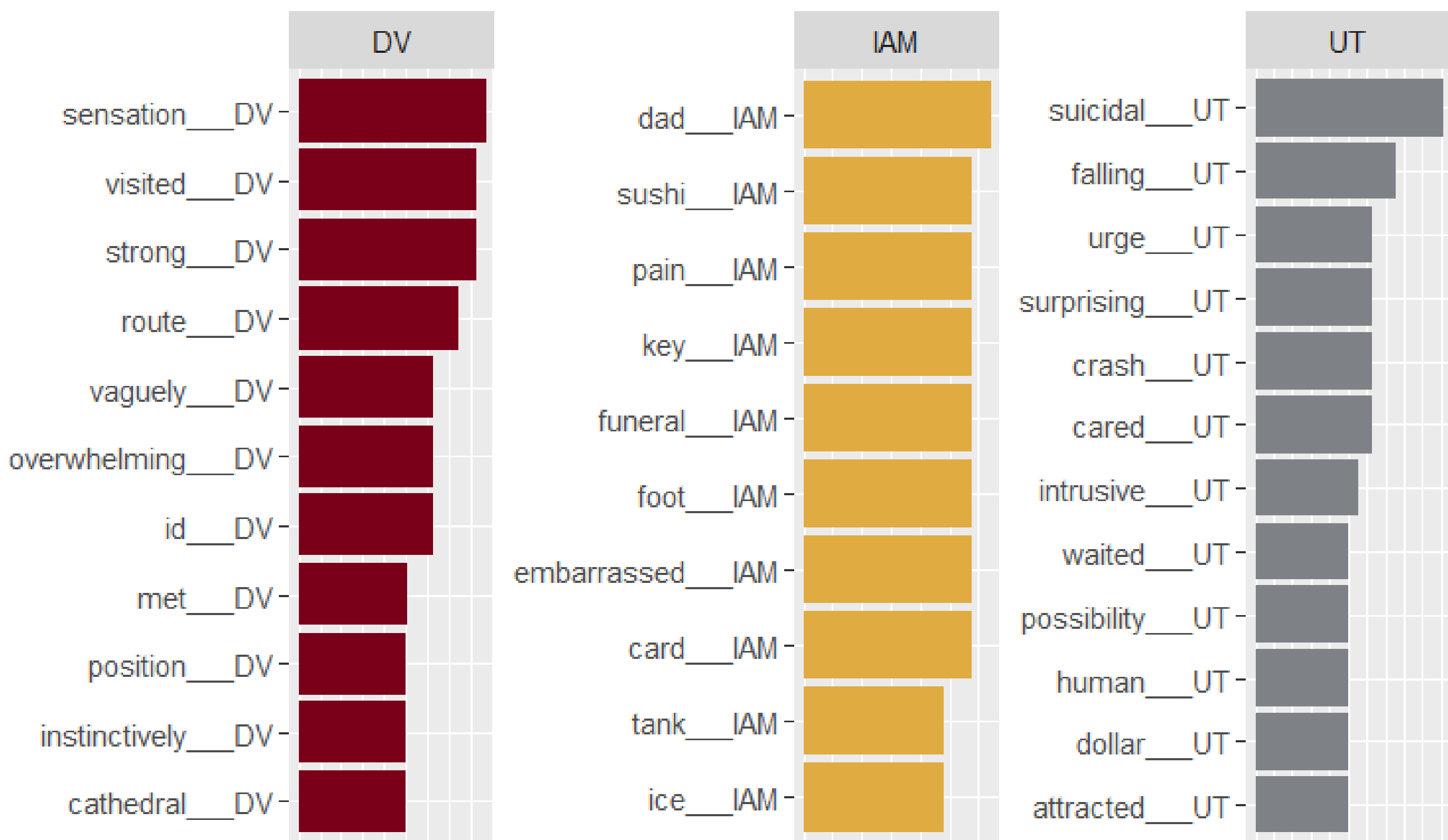
Component 1 Beneficial positivity	Component 2 Unorthodox simulation	Component 3 Spontaneity	Component 4 Absorption	Component 5 Unrelated
Positive emotion (.875)	Solve problem (.695)	Involuntary (.771)	Emotional intensity (.742)	Task-unrelated (.827)
Negative emotion (-.861)	Goal (.668)	Content (.759)	Mental image vividness (.719)	Thought-unrelated (.730)
Beneficial in time (.759)	Self insight (.653)	Unexpected (.745)		Cue (-.558)
Beneficial now (.723)	New info (.636)	Timing (.597)		
	Others insight (.609)			
	Socially immoral (.590)			
	Personally immoral (.578)			

results:

How do the components and sentiment differ across age and thought type?

Principal Component	Pattern	Age		Thought Type		
		OA-YA <i>b</i> (<i>p</i> value)		déjà vu-IAM <i>b</i> (<i>p</i> value)	déjà vu-UT <i>b</i> (<i>p</i> value)	IAM-UT <i>b</i> (<i>p</i> value)
Frequency			DV<IAM<UT	-.33 (<i>p</i> < .001)**	-.78 (<i>p</i> < .001)**	-.44 (<i>p</i> < .001)**
Beneficial positivity			UT<IAM<DV	.30 (<i>p</i> < .001)**	.65 (<i>p</i> < .001)**	.35 (<i>p</i> < .001)**
Unorthodox simulation			DV=IAM<UT	-.06 (<i>p</i> = .612)	-.45 (<i>p</i> < .001)**	-.39 (<i>p</i> < .001)**
Spontaneity	OA>YA (<i>p</i> = .03)*	.16 (<i>p</i> = .03)*	IAM<DV<UT	.31 (<i>p</i> < .001)**	-.21 (<i>p</i> = .008)*	-.52 (<i>p</i> < .001)**
Absorption	OA>YA (<i>p</i> < .001)**	.40 (<i>p</i> < .001)**	DV<UT<IAM	-1.00 (<i>p</i> < .001)**	-.46 (<i>p</i> < .001)**	.54 (<i>p</i> < .001)**
Unrelated	OA>YA (<i>p</i> < .001)**	.39 (<i>p</i> < .001)**	DV<UT=IAM	-.40 (<i>p</i> < .001)**	-.31 (<i>p</i> < .001)**	.09 (<i>p</i> = .468)
Variable		Main Effect of Age (<i>X</i> ²) (<i>p</i> value) <i>df</i> = 1	Main Effect of Thought Type (<i>X</i> ²) (<i>p</i> value) <i>df</i> = 2		Interaction (<i>X</i> ²) (<i>p</i> value) <i>df</i> = 2	
TextBlob		1.985	13.956		4.453	
Sentiment Score		(<i>p</i> = .159)	(<i>p</i> < .001)**		(<i>p</i> = .108)	
Vader		9.354	16.824		9.237	
Sentiment Score		(<i>p</i> = .002)*	(<i>p</i> < .001)**		(<i>p</i> = .010)*	

TF-IDF Analysis of Involuntary Thoughts



déjà vu: characterized by words centered on feelings and sensations having to do with *places*
both **IAM** and **UT**: more variability and specificity of topics

Age plays a significant role in shaping the experiences of involuntary thoughts

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