Turning Linear Stories into Thrillers: The Impact of Story Reordering and Familiarity

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Abstract

This study explores how modifying narrative structure affects suspense perception. Drawing on suspense theory, we systematically reorder key events—specifically the Initiating Event (IE) and Outcome Event (OE)—and introduce non-diegetic symbolic delays to heighten anticipatory tension. We also examine how prior familiarity with a story influences suspense. An online experiment on Amazon Mechanical Turk (MTurk) tested linear versus suspense-modified versions of four short narratives—two familiar and two original. Statistical analyses (ANOVA, ANCOVA, regression) show that reordering events and adding delays significantly boost reported suspense and engagement, with prior familiarity moderating these effects.

Introduction

Suspense is central to engaging storytelling, shaping reader attention, emotional involvement, and narrative absorption. It creates anticipation and uncertainty about future events, sustaining audience interest throughout the narrative (Lehne et al. 2015; Green and Appel 2024; Vorderer 2013).

Filmmakers like Hitchcock have famously used external cues to evoke suspense (Hare 2007), and prior studies (e.g., (Bálint et al. 2017)) show that teasing outcomes and inserting narrative delays—diegetic or non-diegetic—can heighten tension. Tan's framework (Tan 1996) describes films as "emotion machines," engaging audiences through structured use of IE and OE.

Yet few studies have turned these insights into computational methods for short-form storytelling. This study proposes a lightweight, rule-based approach that transforms linear narratives by reordering events and inserting non-diegetic delays. Our experiment shows that both narrative structure and prior familiarity significantly affect suspense ratings. ANCOVA reveals clarity and engagement as key covariates, while regression suggests clarity may moderate the effects of suspense manipulations.

These results support theoretical models and show that computational restructuring can enhance emotional engagement through suspenseful narrative design.

Narrative Suspense: Theory, Computation, and Film

Suspense in narratives arises from the interplay of uncertainty and anticipation, shaped by the structuring and timing of key events. Initiating Events (IE) introduce tension, while Outcome Events (OE) resolve it, with suspense depending on how these are ordered and disclosed (Tan 1996; Bálint et al. 2017). In film, directors like Hitchcock exploit narrative structure and external cues—editing, pacing, non-diegetic sound—to evoke emotional responses by revealing critical information before characters become aware (Hare 2007). Studies such as (Bálint et al. 2017) show that teasing outcomes and adding delays can intensify suspense, enhancing anticipation and engagement.

Theoretical models emphasize both structural and emotional dimensions. (Comisky and Bryant 1982) identify suspense as a product of narrative form and emotional investment. (Brewer and Lichtenstein 1982) propose a structural-affect theory where suspense arises from uncertainty and delay. (Tan 1996) conceptualizes film as an "emotion machine," using structured cues to manipulate affect. (Lehne and Koelsch 2015) offers a cognitive-affective model, while (Smuts 2008) introduces the desire-frustration theory, in which suspense emerges from delayed expectations. (Bentz, Kuchinke, and Jacobs 2024) provides an experimental framework linking suspense with emotional engagement.

On the computational side, (Doust and Piwek 2017) present a domain-independent model that tracks suspense during story generation. (Cheong and Young 2015) introduce Suspenser, a generator that dynamically manipulates narrative tension. (O'Neill and Riedl 2014) propose Dramatis, a model based on cognitive heuristics that simulates goals, plans, and obstacles to predict suspense. Recent work by (Xie and Riedl 2024) explores suspenseful story generation using large language models (LLMs) through iterative planning.

While these systems show promise, few target short-form narratives. This study addresses that gap with a lightweight, rule-based method that restructures linear texts by reordering events and adding non-diegetic delays. We also investigate how prior story familiarity shapes suspense perception, engaging with the paradox of suspense (Carroll 2013).

Narrative Transformation for Suspense

We developed a lightweight, rule-based system to enhance suspense in linear narratives by restructuring key events and inserting symbolic delays. The method aligns with theories of suspense (Bálint et al. 2017; Tan 1996), emphasizing the role of event reordering and delay in modulating anticipation. Our system introduces both diegetic delays—actions or descriptions occurring naturally within the story—and non-diegetic delays using metaphorical imagery to heighten tension.

Transformation Process

A conventional linear narrative typically follows a straightforward sequence:

$$\text{Initiating Event (IE)} \rightarrow \text{Outcome Event (OE)}$$

To enhance suspense, our computational method modifies the linear narrative structure by explicitly introducing an outcome teaser and inserting a diegetic delay. Inspired by the theoretical framework outlined by (Bálint et al. 2017), this approach systematically restructures narratives to amplify anticipatory tension. Specifically, a diegetic delay is defined as a narrative pause created by describing actions, events, or details occurring naturally within the story's fictional world, delaying the resolution of key events and thus heightening suspense. This contrasts with non-diegetic delays, which utilize symbolic or metaphorical imagery external to the narrative's immediate action. The resulting suspense-driven narrative structure can be represented as follows:

$$\begin{aligned}&\text{Outcome Teaser (Partial OE)}\\ &\rightarrow \text{Initiating Event (IE)}\\ &\rightarrow \text{Diegetic Delay}\\ &\rightarrow \text{Non-Diegetic Delay (Optional)}\\ &\rightarrow \text{Full Outcome Event (OE)}\end{aligned}$$

Narrative Techniques for Suspense Enhancement

To further amplify suspense, we implemented narrative strategies inspired by prior work (Bálint et al. 2017; Tan 1996):

- **Non-Diegetic Delay (Symbolic Imagery):** Metaphors such as storm clouds or trapped animals intensify anticipation (Bálint et al. 2017).
- **Emotional Amplification:** Vivid portrayal of sensations (e.g., racing heart, echoing footsteps) increases immersion (Tan 1996).
- **Perspective Shifting:** Brief shifts to an external observer's view enhance narrative uncertainty (Bálint et al. 2017).
- **Gradual Disclosure of Information:** Critical details are withheld and revealed slowly, sustaining engagement (Bálint et al. 2017).

We applied these transformations using GPT-4o (OpenAI 2024), via iterative prompting that guided the model to reorder events and incorporate suspense-enhancing techniques. A sample final prompt is shown below:

"Rewrite the following linear story into a suspenseful narrative by: (1) explicitly teasing the outcome first (Outcome Teaser); (2) returning to describe the initiating event afterward; (3) inserting a diegetic delay using vivid symbolic imagery (e.g., gathering storm clouds, trapped birds), emotionally intense descriptions of the character's sensations (e.g., racing heartbeat, quickened breath), shifting briefly to an external observer's viewpoint to enhance uncertainty, and gradually revealing critical narrative details. Maintain ambiguity and sensory richness throughout to heighten anticipation. Here is the original linear narrative: [Original Narrative Text Here]."

Example of Suspense Enhancement

To illustrate our method for transforming linear narratives into suspenseful stories, we apply it to the classic tale "The Tortoise and the Hare," presenting both the original and the suspense-enhanced versions with applied techniques.

Original Narrative

One day, the hare mocked the tortoise for his slowness. Annoyed, the tortoise challenged the hare to a race. Confident in his speed, the hare raced ahead and, certain of his victory, stopped midway for a nap. Meanwhile, the tortoise continued slowly but steadily. Eventually, the hare woke up and rushed toward the finish line, but he was too late. The tortoise had already won, proving that "slow and steady wins the race."

Suspense-Enhanced Narrative

Outcome Teaser (Partial OE): Breathless silence hung over the crowd as the finish line came into view. To everyone's astonishment, it wasn't the speedy hare in front, but the slow, steady tortoise, inching painfully close to an impossible victory. How could this have happened?

Diegetic Delay: Minutes earlier, the hare lounged beneath a shady tree miles ahead, yawning in boredom. Certain of his triumph, he had stopped, closed his eyes, and drifted into a careless sleep. Meanwhile, unnoticed, the tortoise moved relentlessly forward, step by patient step, gradually closing the distance.

Resolution (Full OE): Now, as the tortoise's foot crossed the finish line, the crowd erupted in disbelief. The hare awoke with a startled gasp and desperately leaped forward—but it was too late. The tortoise turned slowly, a gentle smile on his face, reaffirming the timeless lesson that quiet perseverance triumphs over reckless confidence.

Techniques Applied

To create a suspenseful version of the original story, we applied the following narrative transformations, grounded in established suspense theories (Bálint et al. 2017; Tan 1996):

- **Event Reordering (OE $\rightarrow$ IE):** The outcome is teased first to disrupt chronology and capture attention.

- **Diegetic Delay:** Descriptions of the hare's overconfidence and the tortoise's steady pace create a natural pause that builds tension.
- **Symbolic Imagery (Non-Diegetic Delay):** Metaphors like breathless silence and shocked spectators reinforce suspense.

These techniques heighten emotional engagement by shaping reader expectations and anticipation.

Evaluation

To evaluate the effectiveness of our narrative transformation technique, we conducted an online experiment to test whether narrative restructuring and symbolic delays increase suspense. We also examined whether prior familiarity with a story moderates these effects.

Participants and Design

Participants (N = 17 per condition) were recruited through Amazon Mechanical Turk (MTurk) and randomly assigned to one of two groups: a linear (control) or suspense-enhanced (experimental) condition. Each participant read four narratives: two well-known stories (*The Tortoise and the Hare*, *Little Red Riding Hood*) and two original ones ("A Person Takes an Elevator Late at Night" and "Abandoned Car"). This design allowed us to explore the role of prior familiarity in shaping suspense and engagement.

Procedure

Participants read all four stories in their assigned condition. Those in the suspense group received versions modified using our transformation method (event reordering and diegetic delays), while the control group read the original linear versions. After each story, participants rated the following:

- **Perceived suspense** (1–7 Likert scale)
- **Engagement and absorption** (1–7 Likert scale)
- **Narrative coherence** (1–7 Likert scale)
- **Familiarity with similar scenarios** (1–7 Likert scale)

These measures allowed us to assess how narrative structure influenced suspense, coherence, and reader engagement, and whether familiarity shaped those effects.

Results

To evaluate how our narrative transformation technique influenced suspense perception, we conducted a series of statistical analyses, including ANOVA, ANCOVA, and multiple regression. The main independent variables were **design** (linear vs. suspense) and **known_story** (familiar vs. unfamiliar), and the dependent variables were **Suspense**, **Clarity**, **Familiarity**, and **Engagement**.

ANOVA for Individual Dependent Variables

We first conducted separate ANOVAs for each dependent variable to examine the main and interaction effects of *design* and *known_story*.

For **Suspense**, both factors had significant effects. Participants rated suspense-modified narratives as significantly more suspenseful than linear ones, with a main effect of design ($F(1, 132) = 5.05, p = 0.026$). Familiarity with the story also increased suspense ratings ($F(1, 132) = 7.36, p = 0.008$). The interaction between design and familiarity was not significant ($F(1, 132) = 0.73, p = 0.395$).

For **Clarity**, neither factor showed a significant effect. The design effect was not significant ($F(1, 132) = 0.73, p = 0.394$), nor was the effect of familiarity ($F(1, 132) = 2.46, p = 0.119$).

For **Familiarity** ratings (as a dependent variable), prior knowledge of the story had a significant effect ($F(1, 132) = 8.64, p = 0.004$), while narrative design had no effect ($F(1, 132) \approx 0, p = 1.000$).

For **Engagement**, no significant effects were found for either design ($F(1, 132) = 0.92, p = 0.340$) or familiarity ($F(1, 132) = 1.51, p = 0.221$).

Effect of Narrative Design on Suspense (ANCOVA)

To control for potential confounds, we conducted an ANCOVA with **Suspense** as the dependent variable and **Clarity**, **Familiarity**, and **Engagement** as covariates.

The suspense-enhanced condition showed a significant main effect ($F(1, 129) = 5.81, p = 0.017$), as did prior familiarity with the story ($F(1, 129) = 5.74, p = 0.018$). The interaction between design and familiarity was not significant ($F(1, 129) = 0.79, p = 0.377$).

Among the covariates, both **Clarity** ($F(1, 129) = 8.98, p = 0.003$) and **Engagement** ($F(1, 129) = 20.29, p < 0.001$) significantly predicted suspense ratings. **Familiarity** approached significance but was not a significant predictor on its own ($F(1, 129) = 2.88, p = 0.092$).

These results suggest that the suspense-enhanced narrative design effectively increased perceived suspense, particularly when the story was already familiar to the reader. Clarity and engagement were also positively associated with suspense ratings.

Figure 1 presents the mean suspense ratings by narrative design (normal vs. suspense) and story familiarity (known vs. unknown). Overall, suspense-enhanced narratives resulted in higher suspense ratings compared to the linear versions across both known and unknown stories. However, the effect of the suspense design was more pronounced for unfamiliar stories, where the suspense version showed a greater increase in mean suspense ratings compared to the normal design. These results align with the ANCOVA findings, which indicated that design (linear vs. suspense) significantly impacted suspense perception and that prior familiarity with the story also played a role, though the interaction between the two factors was not significant.

OLS Regression Analysis

To further examine the effects of *design* and *known_story* on **Suspense**, we conducted an ordinary least squares (OLS)

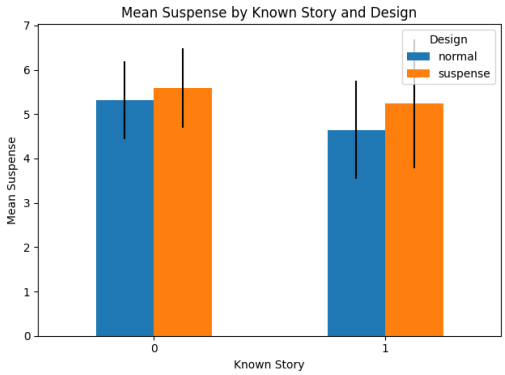

Figure 1: Effect of Narrative Design and Story Familiarity on Suspense Ratings

regression while controlling for **Clarity**, **Engagement**, and **Familiarity**. The model explained approximately 41.8% of the variance in suspense ratings, with an adjusted $R^2 = 0.371$, indicating a moderate and robust fit. The overall regression model was statistically significant, $F(10, 125) = 8.97, p < 0.001$, suggesting that at least one predictor reliably contributed to suspense perception.

The narrative design variable (suspense vs. linear) was marginally significant, $p = 0.061$, indicating a tendency for suspense-modified narratives to increase suspense ratings, although the effect was attenuated when accounting for covariates. Familiarity with specific stories had a clear influence: Story 2 showed a significant positive effect on suspense ratings ($p = 0.003$), as did Story 3 ($p = 0.006$) and Story 4 ($p < 0.001$). These findings suggest that familiarity with narrative content can enhance perceived suspense, possibly by shaping expectations and attention.

Among the covariates, **Engagement** emerged as a strong and significant predictor of suspense ($p = 0.001$), supporting the idea that immersive experiences heighten suspense perception. In contrast, **Clarity** was not a significant predictor ($p = 0.448$), implying that making a story easier to understand does not necessarily increase its suspensefulness.

Most interaction terms in the model were non-significant, but one notable exception was the interaction between *design* and *clarity*, which approached significance ($p = 0.056$). This suggests that clarity may moderate the effectiveness of suspense-enhanced narratives: when a story is well-structured and clear, the suspense manipulation may be more effective. If the narrative becomes too ambiguous or complex, cognitive overload may reduce the intended suspenseful effect. In contrast, a suspenseful story with clearly presented events may allow readers to fully absorb the tension and anticipate outcomes, maximizing engagement and emotional response.

Discussion and Conclusion

This hierarchical analysis—beginning with ANOVA, followed by ANCOVA, and concluding with OLS regression—enabled a systematic examination of suspense modification while accounting for potential confounds. The findings confirm that suspense-enhanced narratives significantly increase perceived suspense, with engagement emerging as a key predictor. While some interaction effects were observed, they did not reach conventional significance levels, suggesting that suspense modifications are broadly effective across different conditions rather than being highly dependent on prior knowledge or clarity.

Future Work

Future research should explore how nonlinear structures, such as flashbacks and parallel storylines, influence suspense by adding complexity and uncertainty. Additionally, as interactive media like video games and branching narratives gain prominence, examining the interplay between player agency and suspense could deepen our understanding of dynamic storytelling.

Cross-cultural studies may reveal how different storytelling traditions shape suspense perception, while investigations into psychological traits—such as tolerance for ambiguity—could shed light on individual differences in suspense experiences. Another key area is the impact of repeated exposure: does familiarity diminish suspense, or can certain narrative techniques sustain it despite foreknowledge?

Comparing suspense across media formats, including film, television, and podcasts, could also highlight medium-specific mechanisms. Finally, ethical considerations surrounding suspense in narratives, particularly its effects on vulnerable populations, warrant further study. Addressing these questions will enhance our understanding of suspense and its role in crafting engaging narratives.

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