Why Do We Read? Effects of Narrative Tension on Epistemic Curiosity and Information-Seeking Behavior

Abstract

This study investigates how epistemic curiosity interacts with enjoyment, prediction confidence, and surprise to influence information-seeking behavior and narrative satisfaction. Participants listened to the first half of a short story, and they were asked to make an open-ended prediction about the story's ending, as well as their confidence in their prediction, their level of enjoyment, and their level of curiosity. They then chose whether they wanted to read a 1-sentence summary of the story's ending or continue listening to the rest of the story in full. Enjoyment positively predicted curiosity, and contrary to the theory that uncertainty alone fuels curiosity, in this narrative context, higher confidence also seemed to predict curiosity—perhaps because confident participants felt more invested in seeing whether their prediction was correct. High curiosity reliably predicted the decision to continue listening, even when participants were confident that they knew how the story would end. Participants who chose to continue listening also reported significantly greater satisfaction with the story's ending than those who chose to read a summary. These findings suggest that curiosity in a narrative context promotes gradual information-seeking, even when immediate resolution is available. Narrative satisfaction may be derived from the process of gathering information and updating predictions rather than from merely finding out how the story ends.

Introduction

We often say that a story has to have a beginning, a middle, and an end, but why is this true? It seems impossible to conceive of a story existing without a beginning or an end because the beginning of a story initializes the narrative world, and the ending brackets it off, much like how, in geometry, two points are required to define a line. But what is the purpose of the middle? Why do stories have to take so long?

Perhaps one of the most intuitive answers to this question is that a story with just a beginning and an end would be simply uninteresting. According to literary theorist Peter Brooks, a story is most fulfilling when there is a long, protracted middle, full of detours and deviations away from its end, because getting to the end too quickly would frustrate any sense of real, satisfying order at the end of the narrative (Brooks, 1987). We may gripe to ourselves, "I wish they'd hurry up and just say who did it!" as we read a mystery novel, but

often this sense of frustration and anticipation only makes us turn the pages more excitedly and yell, "Don't tell me!" at anyone who threatens to let a spoiler slip. Our curiosity compels us to discover the answer on our own (Hsiung et al., 2023; Metcalfe et al., 2021), even if that means waiting through the lengthy, ambiguous middle.

Our initial inquiry is in fact deeply entangled with a question central to curiosity research: whether curiosity is best satisfied by immediate resolution or by the process of information-gathering. If the former hypothesis is true, then the middle of a story is essentially unnecessary for a satisfying resolution, but if the latter hypothesis is true, then the middle of a story becomes necessary to elongate and stagger the release of information before the reader arrives at the story's end. Over the course of a story, the narrator tightly controls the amount of information that is revealed, and this gap between known and unknown produces a kind of tension which demands that the reader generate and update predictions about what might happen next as they gain new information (Baldassano, 2023; Bermejo-Berros et al., 2020). Although narrative tension has long been a topic of interest for literary critics, there is not yet a significant amount of research on the psychological side that explores how narrative tension might expand upon existing theories about curiosity.

Researchers of epistemic curiosity propose that voluntary information-seeking behavior is driven by an internal motivating force, separate from other more basic drives like hunger or thirst (Metcalfe et al., 2020; Litman, 2005), but we are still learning about the affective experience of curiosity—whether it is frustrating or pleasurable, for instance—and narratives provide a unique opportunity to study what it actually *feels* like to be curious. While reading a story, we are constantly oscillating between states of knowing and not knowing, and this oscillation creates a tension that we seem to enjoy on some level, because when we look back at history, we find abundant evidence to suggest that we have always craved stories, from the earliest epics that captivated the ancients to the latest TV shows that we find ourselves binging. This is further corroborated by research showing that when people are curious, they will choose to watch an answer unfold slowly, even when there is a choice to immediately resolve uncertainty (Hsiung et al., 2023; Metcalfe et al. 2021).

The literature on curiosity distinguishes between several theoretical frameworks that explain what drives exploratory behavior. The information-gap theory (Loewenstein, 1994) suggests that curiosity emerges when individuals perceive a gap between what they know and what they want to know, motivating behavior to close that gap and resolve uncertainty. Other perspectives, such as the learning progress hypothesis (Oudeyer et al., 2016), argue that curiosity is intrinsically tied to the potential for learning improvement, and that satisfaction of curiosity is tied to improving predictions over time. In this study, we utilize a modified version of the paradigm developed by Hsiung et al. (2023) to explore which theories of curiosity best explain our engagement with narrative media, and what the cognitive experience of narrative tension reveals about the relationship between epistemic curiosity and feelings of enjoyment, confidence, and satisfaction.

After listening to part of a short story, participants were asked to share how much they were enjoying the story so far, how curious they were about the ending, what they thought would happen next, and how confident they were in their prediction. They then chose whether they wanted to keep listening to the rest of the story, read a summary or 'spoiler' of the ending, or skip to the next story. If they chose to keep listening or to read the spoiler, participants were asked at the end of the trial how surprising they found the story's ending, how satisfied they were with the story, and how satisfied they were with the decision they made. The narrative stimuli we selected for this study were each around 10 minutes when read aloud, and consisted of texts from a wide range of genres, but they all contained some element of suspense and/or surprise—emotions which work in tandem with curiosity to activate retrospection and interest (Bermejo-Berros et al., 2020, Fernández-Vara 2023).

Hypotheses

H1: We hypothesize that curiosity and enjoyment will be positively correlated, as prior research has shown (Hsiung et al., 2023; Metcalfe et al., 2021)

H2: We hypothesize that curiosity will be at its highest when confidence is at a midpoint and participants have some sense of what might happen next but are not completely confident (Recht & Yeung, 2024).

H3: We hypothesize that participants will choose to continue listening to the stories they are most curious about.

H4: We hypothesize that participants will be more satisfied with the stories when they continue listening as opposed to when they choose to read a summary of the ending.

Methods

Participants

Our study recruited a total of 35 participants. 27 participants were students who completed the study in-person through the SONA program at Columbia University, and 8 participants, recruited through Prolific, completed the study online. Within our sample, 21 (60%)

identified as women, 14 (40%) identified as men, and 1 identified as nonbinary (<1%). The mean age of our participants was 34 y (SD, 14.61 y; range, 18 to 67).

The exact time it took to complete the study varied from participant to participant due to the variable length of the narrative stimuli, but the study typically took no longer than 1 hour to complete (mean, 52 min). In-person participants were awarded course credit for their participation, and online participants were compensated \$15/hr.

This study was approved by the Columbia Institutional Review Board (protocol IRB-AAA20252).

Protocol

After informed consent, participants were quickly briefed on the content of the study and the types of questions they would be expected to answer at the midpoint of each story. At this point, participants who took the study in person were left alone in a running room and instructed to begin the study.

The first screen presented to participants contained a recap of the instructions they had just received verbally, and before proceeding to the first story, participants had to pass a 3-question quiz to verify their understanding of these instructions.

With one story per trial, participants each listened to around 50 minutes of stimuli over the course of the study, amounting to 6-7 trials on average per participant. Trials were expected to take around 5-10 minutes each, and so to ensure that the study did not go over the allocated time, the experiment only proceeded to a new trial if the participant had been listening to stimuli for less than 45 minutes.

Once a participant had listened to 45 minutes or more of stimuli, the experiment would automatically end. Upon completing the experiment, in person participants were debriefed on the main hypotheses of the study and its experimental design.

Experimental Design

In this study, participants listened to recorded short stories from a wide range of genres and time periods, including authors like Roald Dahl, O. Henry, and Shinichi Hoshi. In total, we prepared a set of 15 short stories by selecting texts that were publicly available online, contained some plot twist or element of surprise, and met a rough word count of 1200 words. As participants listened to the stories being read aloud, the title of the story, as well as the author were displayed on the screen. At the midpoint in each story, participants were asked to make a series of mid-story ratings, such as enjoyment ("How much do you enjoy or not enjoy the story so far?") and curiosity ("How curious are you to know what happens next in the story?"). They were also asked to make a prediction about how they thought the story might end and rate their confidence in that prediction. Enjoyment, curiosity, and confidence were each rated on discrete 5-point sliders, and participants typed their predictions into text-entry boxes.

Also at the midpoint, participants were presented with the 3-way decision about whether they wanted to continue listening, read a summary, or skip the story. If they chose the third option (skip), they would proceed directly to the next trial to start listening to the next story, but if they chose one of the other options, they would answer a series of post-story questions after either hearing the rest of the story or reading the summary. These post-story questions assessed how surprising and satisfying participants found the story's ending, how satisfied they were with their decision to either continue listening or read a summary, and if they wished they had made a different decision, in retrospect, between the 3 options.

The predefined midpoint for each story was selected by the experimenters on a story-by-story basis to ensure that it was placed around halfway through the story (around 500-600 words in) and at a moment that felt natural to the story (at a break in the narrative, for instance, or at a cliffhanger).

Scoring Prediction Accuracy

In order to determine how accurate a participant's prediction was, we used the following scoring criteria to assign between 0 and 5 points to each prediction: (0) no prediction, (1) correct setting, characters etc. mentioned, (2) plausible prediction relevant to the plot, (3) correct but vague prediction of final outcome, (4) partially correct prediction of final outcome or partially correct prediction of causality, (5) correct prediction with correct prediction of causality. To receive a full score for "causality," a prediction would have to accurately describe at least one intermediate step between the midpoint and the final outcome of the story.

FIG. 1

Sample Predictions and Accuracy Scoring

	"Mammon and the Archer"	"The Toxic Donut"	"The Umbrella Man"
1 Correct setting, characters etc. mentioned	"She will end up becoming successful. "	"Someone might eventually get her the ticket."	None
2 Plausible prediction relevant to the plot	"Richard decides to try a lavish gesture towards this girl he likes but finds it to be no avail as she is not impressed with his money."	"Kim goes on the show and wins something."	"He buys the 'silk' umbrellas for half a pound, and pockets the rest each time."
3 Correct but vague prediction of final outcome	"Richard will get the girl."	"The show itself will play out. It won't end well for Kim."	"They're going to find the old man's secret."
4 Partially correct prediction of final outcome or causality	"Richard will go to the departure location of the girl and they will fall in love. She will cancel her trip."	"Kim is getting sacrificed."	"The man perhaps is up to some mischievous deeds. The umbrella holds particular significance, maybe it is stolen, or perhaps it has some magical properties."
5 Correct prediction of outcome and causality	"I think the father will be able to somehow buy time with money and provide an opportunity for his son to propose to Miss Lentry and prove that money can buy all."	"We hear about the rest of the game show, where Kim becomes a sacrifice for the greater good of the world."	"He steals the umbrellas and uses the money for something else."

Results

Higher enjoyment was correlated with higher curiosity ($\beta = 0.66$, P < 0.001), which aligns with prior research and our first hypothesis (H1). A similar linear effect was found between confidence and curiosity, where higher confidence ratings tended to predict higher curiosity ($\beta = 0.33$, P < 0.001). After adding a quadratic term to the model, we found no evidence for a significant quadratic relationship between confidence and curiosity ($\beta = 0.08$,

P = 0.16), which differs slightly from what we expected to find in our second hypothesis (H2), based on the existing curiosity literature. Higher accuracy scores also generally predicted higher curiosity ratings ($\beta = 0.19$, P = 0.01), suggesting that participants who made more accurate predictions were often more curious about the story's ending.



To support our third hypothesis (H3), we found that participants often chose to continue listening to the stories they were more curious about. When participants were less curious, they were more likely to opt for the summary option.



Among low-confidence participants, 69.2% (74 out of 107 trials) chose to read a summary, compared to only 41.4% (46 out of 111 trials) in the high-confidence group. A chi-square test confirmed a significant association between confidence level and decision behavior (*P* < 0.001), suggesting that confidence may play a key role in shaping information-seeking decisions and behavior.



We found that surprise tended to decrease with higher prediction accuracy (β = -0.26, *P* = 0.002), confirming that participants were less surprised by the story when they had accurately predicted the story's ending. Conducting a two-tailed t-test, we found that when participants made high-confidence and high-accuracy predictions, they tended to report higher story satisfaction than those whose predictions were low-confidence and low-accuracy (t = -2.52, *P* = 0.01). However, there was no other statistically significant relationship between prediction accuracy and story satisfaction, suggesting that other factors beyond accuracy may predict story satisfaction more strongly.



Curiosity was a statistically significant predictor of story satisfaction (β = 0.40, 95% CI [0.22, 0.59], z = 4.24, *P* < 0.001), as was surprise to a slightly lesser extent (β = 0.19, 95% CI [0.08, 0.31], z = 2.62, *P* = 0.01).







Choosing to continue at the midpoint was associated with significantly higher story satisfaction, which supports our fourth hypothesis (H4). Participants who continued consistently rated the stories as more satisfying than those who read a summary (mean 4.09 vs. 3.66, t = 6.85, P < 0.001), and those who chose to continue also reported higher decision satisfaction than those who read a summary (mean 4.03 vs. 3.83, t = 2.51, P = 0.013). Surprise did not significantly differ between the two groups (t = 1.56, P = 0.12).



Generally, Retrospective Decisions did not tend to differ from Midpoint Decisions, with most participants reporting that they would make the same decision. Participants who chose to continue at the midpoint were slightly more likely to make the same choice retrospectively, but this difference was not statistically significant.



Across most trials (122 out of 160) participants made identical Midpoint and Retrospective Decisions, but in the 38 trials where participants made a Retrospective Decision that differed from their Midpoint Decision, we found that certain stories, such as "The House of Asterion," "Kidnap," "A Joke," and "The Open Window," were slightly more likely to make participants wish they had selected a different choice at the midpoint. For example, after reading a summary of the ending of "The House of Asterion," 5 participants wished they had listened to the whole story, whereas 3 participants who listened to the entirety of "A Joke" wished they had just read the summary instead of continuing to listen.

Discussion

Our results show that curiosity motivates information-seeking, even when immediate resolution is available. Higher curiosity predicted a greater likelihood of continuing the story, even when participants could immediately satisfy their uncertainty by reading a summary. Hsiung et al. (2023) found that curiosity promotes information-seeking behavior in an Evolving Line Drawing Task, where participants viewed progressively revealed line drawings, made identity guesses, and chose whether to continue watching or receive the

answer. This result extends the findings of Hsiung et al., showing that in narrative contexts as well, curiosity motivates the pursuit of gradual information release rather than quick resolution. Participants who chose to continue listening reported significantly higher story satisfaction than those who opted for a summary, suggesting that the sense of order which comes together at the end of a story, as Brooks described, is only satisfactory if participants have, themselves, gradually developed and refined mental representations of the story's events over time, through a gradual intake of information.

Participants who were more emotionally engaged and more confident in their predictions also reported greater curiosity about what would happen next. Enjoyment emerged as the strongest linear predictor of curiosity, although a significant linear relationship was also found between prediction confidence and curiosity. Prior work has emphasized that curiosity often peaks at the midpoint of prediction error, but the results of this study suggest that in narrative contexts, curiosity may peak when participants feel confident in their predictions, because curiosity was highest at moderate to high levels of confidence (rating confidence 3 or 4 out of 5). These discrepancies might be explained by the hypothesis that when we form predictions about narratives, we invest more of our own imagination and creativity into our predictions than we might, say, in a simpler trivia paradigm. This could result in us being more curious about the final outcome as we become more invested and more confident in our prediction being right.

It is important to acknowledge that participants in this study rarely reported being totally confident in their predictions (rating confidence 5 out of 5), and so we can not say for certain whether this effect would continue linearly or drop off steeply at the highest level of confidence. It is difficult to imagine, however, that there are many scenarios in the real world where we know with 100% certainty how a story will end, and so the data may actually offer a realistic representation of how we form predictions about narratives. To further explore this relationship, follow-up studies might present participants with stories that they have already heard in the same session. When presented with a story for the second time, participants would have maximum confidence in the outcome, and therefore might be less likely to want to continue listening.

Curiosity and surprise were both significant predictors of story satisfaction, with curiosity showing the stronger effect. These results suggest that satisfying narrative experiences may be shaped not just by the degree to which an ending is unexpected, but also by how much anticipatory curiosity is built up along the way. Certain stories like "Kidnap" or "He-y, Come on Ou-t!" received comparatively high surprise ratings (see Fig. 6), but this did not necessarily always correlate with higher-than-average satisfaction ratings. "Mammon and the Archer" received lower-than-average surprise ratings, but was generally found to be

satisfying. Future research might examine this relationship between surprise and story satisfaction more closely to determine whether stories *need* to be surprising to be satisfying.

The present findings suggest that curiosity serves not merely as a means of resolving gaps in knowledge, but as a force that actively shapes the experiential arc of narrative engagement. Confidence, enjoyment, and prediction accuracy all contributed to the experience of curiosity, indicating that epistemic motivation in narrative contexts is deeply interwoven with affective and cognitive processes. These results extend previous work by affirming that it is not merely arriving at the end, but making incremental discoveries that makes the ending of a story meaningful.

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