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Kathrin Hirsch, Tilmann Köppe, Edgar Onea

What Is Narrative Suspense? Evidence from Production Studies

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Abstract: Suspense is an important aesthetic feature of narrative media across different genres. Literary theory is concerned with elucidating the concept of suspense as applied to narrative literature. If literary theory wants to keep in touch with ordinary usage of the term >suspense<, then it must rely on an audience's ability to judge scenes in narratives as to their suspensefulness. But how do we find out how someone understands the very concept of suspense? The present study explores this question by presenting three text production studies in which we ask speakers of German to relate both suspenseful (German: >spannend<) and non-suspenseful story continuations (Study 1) as well as story continuations that feature a protagonist who either is in a state of suspense (Study 2) or reasons about a suspenseful situation (Study 3). Our results suggest a number of insights into the concept of suspense. First, as participants find it easy to comply with the tasks of creating story continuations, we conclude that production studies count amongst the suitable means of exploring semantic correlates of 'suspense'. Second, we find evidence that >suspense< denotes a functional property of narratives. If the term is applied to narrative media, then this is because the text has a propensity to elicit a particular response on the side of the audience. Finally, we find that the narrative strategies that our participants employ correspond to particular strategies of suspenseful storytelling as predicted by suspense theory. We suggest that the standard account of suspense according to which suspense is a composite emotion consisting of hope, fear and uncertainty may be explanatorily inferior regarding our data as compared to question-based accounts that rely on more abstract (erotetic) features of stories.

Keywords: narrative, suspense, reader response, empirical production study

Corresponding author: Tilmann Köppe: Universität Göttingen, Seminar für Deutsche Philologie, E-Mail: tilmann.koeppe@phil.uni-goettingen.de

Kathrin Hirsch: Karl-Franzens-University of Graz, Department for German Studies, E-Mail: k.hirsch@edu.uni-graz.at

 $\textbf{Edgar Onea} \hbox{:} \ \textbf{Karl-Franzens-University of Graz, Department for German Studies,} \\$

E-Mail: edgar.onea-gaspar@uni-graz.at

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1 Introduction

Research in psychology, aesthetics, linguistics, and literary or media studies presents a broad variety of factors that are deemed relevant for creating narrative suspense, amongst them an emotional attitude towards a protagonist, the anticipation of a morally bad outcome, or uncertainty concerning future plot developments (cf. Guidry 2004, 23 sq.; Cheong/Young 2015, 39 sq.; Doust 2015, 33–40). The procedure of corroboration for hypotheses concerning any of these factors involves judging given narratives. For instance, in order to find out whether the number of outcomes available to the protagonist has an effect on the suspensefulness of a scene, narratives which differ in the respective aspect are judged as to their suspensefulness. Depending on the aims and disciplinary background of the study, either an empirical rating study is conducted, including carefully manipulated stimuli, or the reader is invited to a thought experiment in order to judge for himself/herself whether he/she would agree that the scene in question is suspenseful. Ratings are also indispensable in studies examining (neuro-)physiological or behavioral correlates of suspense because one needs to establish that the (neuro-)physiological or behavioral episode under scrutiny counts as an instance of felt suspense. Any such rating must rely on readers' ability to identify suspenseful scenes in a narrative. However, typically little is known about the exact way in which participants in such studies understand the very concept of suspense (cf. Doust 2015, 196).¹

How do we find out how someone understands the very concept of suspense? The usual approach to answering this question ranges from examining the texts that are rated as suspenseful vs. non-suspenseful to eliciting introspective information from the participants including a definition of the term >suspense<. In this paper, we explore a different route. Since the term suspenses applies to a particular form of (inter alia) linguistic activity, namely suspenseful storytelling, we hypothesize that asking participants to demonstrate what the concept denotes can shed light on the very notion of suspense that they have in mind. (By the same token, one way to find out what meaning someone associates with the verb >to shout< is to ask them to shout.) This study explores story continuations produced by naïve (non-expert) participants given various prompts involving some German counterparts of suspense. From these continuations, we attempt to derive some explora-

¹ A brief note on terminology. We use >concept< for what a lexical item in a natural language denotes (i.e., the >meaning< of the term). Different lexical items may denote the same concept (e.g., German ›Vogel‹ means the same as English ›bird‹). The concept of suspense comes in the lexical guises of inter alia >suspense<, >suspenseful<, >suspensefulness< in English. The present studies have speakers of German as participants, thus in some of what follows we concentrate on the German word >spannend(()suspenseful() and its cognates.

tory conclusions about the semantics of the term >suspense< or at least its German counterpart >Spannung<. These conclusions pertain to the domain of application of the concept and its logical structure as predicted by current suspense theory (What is >suspense< applied to, and is the concept governed by a set of individually necessary and jointly sufficient conditions?). Our overall assumption is that, as suspense is a reader response phenomenon, literary theory is well advised to consider the readers' responses in analyzing the concept, and we conclude that text production studies count amongst the suitable methods of analyzing semantic correlates of »suspense«.

Our paper is structured as follows. In section 2, we report on our text production studies. This includes both study designs and a quantitative and qualitative analysis of the data we obtained. Section 3 discusses the import of our studies for literary theory.

2 The Production Studies

We conducted three production studies. All three studies are set up as paper-andpencil completion tasks. Participants received a sheet of paper with a story beginning and one or two tasks relating to a continuation of this beginning (Study 1: N = 27; Study 2: N = 16; Study 3: N = 17; totality of participants of all three studies = 60). For all three studies, we gave participants the additional option to name suspenseful stories known to them and to indicate their gender (36 female, 22 male, 1 diverse, 1 no answer). They were also asked to supply contact data in case they wished to take part in a prize drawing amongst all study participants.

While all three studies involve production tasks, they differ in design and methodology. In Study 1, we asked participants to produce a suspenseful story continuation, and the design of the study allows for both quantitative and qualitative analyses of the results. We therefore discuss it in some detail below. In Study 2 and Study 3, we also asked participants to produce story continuations, but this time we did not ask them to rely on their ability to relate something suspenseful. Rather, the stories produced by the participants are about a protagonist who experiences suspense, or reasons about the suspenseful nature of a narrative movie. Study 2 and Study 3 thereby supply accompanying qualitative evidence for the viability of our method. We will report on these studies below.

2.1 Study 1

Method

In Study 1, 27 participants received a story beginning comprised of two sentences and two completion tasks (Tab. 1):²

Tab. 1: Tasks and Prompts (Study 1)

Tasks:	ory beginning:	»Anna sat at her desk. What she didn't know was«
 »Write a continuation by completing the se that it is the beginning of a highly suspens 		
(2) »Write a continuation by completing the se that it is the beginning of a poorly suspens(3) Please explain why your first continuation is		

In complying with task (1), participants demonstrate suspenseful storytelling. We consider the prompt an apt beginning for a potentially suspenseful story because it insinuates an asymmetry of knowledge between a clearly recognizable protagonist (»Anna«) and the reader. According to Hitchcock, this is an especially suitable setting for suspenseful storytelling (cf. Friedrichsen 1996, 329); at the same time, this beginning does not determine the affective valence of the story in general or its suspensefulness in particular.

As to the formulation of the tasks, we opted for a continuation of the prompt by completing a sentence because we wanted to make task compliance easy, and possibly fun, for our participants. Moreover, the clearly delineated task facilitates the comparison of structurally (syntactically) similar results. We specifically did not ask participants to complete the story, because in that case, participants tend to aim for closure, i.e., give the ending of the story rather than the suspenseful middle part of the plot (cf. Klauk/Köppe/Onea 2016). Creating both closure and suspense with just a couple of words is, to say the least, difficult.³

² German original versions of tasks and prompts (Appendix D) along with all other appendices and all relevant data and data analysis scripts can be found here: https://osf.io/z2kcu/?view_only=e 8cbb5e666a741b28f0c7a51f7a1a8f6.

³ We conducted a pilot study that was set up as an online completion task in which we asked participants to complete a story beginning given in the task. We hypothesize that due to the formulation of the task people aimed for closure rather than suspense.

Study 1 also asked participants why the story continuation complying with task 1 is suspenseful (task 3). This is but an addendum to the production task in order to make sure that participants can use their more intuitive linguistic skills for the former without having to worry about matters of explanation, although participants did have the opportunity to rework their story continuations in light of their more explicit reasoning about suspense. Finally, we gave participants the opportunity to name suspenseful stories (books) they have read recently (task 4).

Annotation

We collected the answers in an Excel spreadsheets file and created categories to classify story continuations produced by participants. We extracted the categories qualitatively from the story continuations with the goal of being able to classify as many story continuations as possible, but we double-checked these categories with predictions from the theoretical literature on suspense in order to narrow down the number of categories to be taken into consideration. The resulting categories cover at least one story continuation and are mentioned in at least one scholarly piece on narrative suspense.

The categories we came up with using this procedure are (Tab. 2):

Tab. 2: Categories

	Name of Category	Explanation of Category
1	>potential danger‹	The story deals with a potential danger to the protagonist. The protagonist may or may not know about the dangerousness of the situation.
2	important event	The story deals with an event that is of great importance to the protagonist. The important event may be of either good or bad consequence to the protagonist. The protagonist may or may not know about the importance of the situation.
3	>general direction∢	The story may progress in different directions, and these can be assessed as positive, negative, or neither (neutrals) for the protagonist.
4	>mysterious aspect<	The story opens up questions concerning central aspects of the plot or even the very nature of the fictional world.
5	>delay<	The story is told such that there is no progression of the plot. Rather, the story, for example, elaborates on details or indulges in what is assumed to be a digression.
6	>not addressing the topic<	The story continuation does not comply with the task.

The categories target different aspects of the story continuations:

Category 1 ('potential danger') and Category 2 ('important event') focus on the protagonist's wellbeing. There is a number of theories which highlight that suspense has to do with a threat to a protagonist or with the reader's affective relation to a protagonist who is in danger (cf. Comisky/Bryant 1982; Zillmann 1996, 208; Appel et al. 2002, 151; Wenzel 2001, 24). Category 1 is more specific, as any situation that poses a potential danger to a protagonist counts as an important event for the protagonist (but not the other way around).

Category 3 (**, general direction*) allows for the possibility that suspense is connected to the anticipation of a positive event (cf. Zillmann 1996, 203; Brewer 1996, 115 sq.). While for 1 (**potential danger*) and 2 (**, important event*), the annotators only decide whether or not the category applies (1/0), the general direction of the story can be assessed as **positive*, **, negative* or **neutral* (-1/0/1).

Category 4 (mysterious aspect() pertains to the world of the story more generally. Various studies on suspense claim that mystery(is a sub-type of suspense that centers around a mysterious aspect of the story-world specifically (cf. Wenzel 2001, 29 sq.; Junkerjürgen 2001, 66–70).

Category 5 ('delay') concerns the information management of the story such that there is uncertainty concerning the occurrence of future events (irrespective of their valence in terms of good or bad). With 'delay', the plot is held on pause, so to speak (cf. de Wied 1995).

Category 6 (not addressing the topics) is reserved for story continuations which, for various reasons, do not comply with the tasks of relating a suspenseful (resp. not suspenseful) story continuation. For instance, this applies to incoherent story continuations or to continuations which appear to be meant funny, hilarious, or absurd.

Four annotators were asked to classify the story continuations using these six categories. For this purpose, they were made familiar with the categories as explicated above. On the basis of training items, they had the opportunity to ask questions concerning the classification or the categories. The annotators worked independently of each other.

An inter-annotator reliability analysis was conducted to measure the inter-annotator agreement. For this purpose, Fleiss' kappa was chosen. Fleiss' kappa is used to determine the level of agreement between two or more raters when the response variable is measured on a categorical scale. Fleiss' kappa is a chance-corrected measure of agreement. The kappa value expresses whether, and to what extent, the observed agreement exceeds the expected agreement given the data. Thus, kappa can also be negative. A negative kappa means that there is less agreement than would be expected based on chance. The analyses were conducted for (a) the inter-annotator agreement upon the composite of the six categories for the

suspenseful story continuations ($\kappa = 0.570$) as well as for (b) each of the six categories for the suspenseful story continuations separately (task 1) (λ) (λ) (λ) (λ) >potential danger $\kappa = 0.518$, >delay $\kappa = 0.420$, >important event $\kappa = 0.143$, >mysterious aspect $\kappa = 0.606$, λ not addressing the topic $\kappa = 0.790$; (c) for the inter-annotator agreement upon the composite of the six categories for the non-suspenseful story continuations ($\kappa = 0.340$) as well as for (d) each of the six categories for the non-suspenseful story continuations (task 2) (\times direction \times = 0.402, \times potential danger \times = 0.100, >delay $\kappa = -0.001$, >important event $\kappa = 0.343$, >mysterious aspect $\kappa = 0.633$, >not addressing the topic $\kappa = -0.189$; (e) for the inter-annotator agreement upon the composite of the six categories of the suspenseful story continuations and the non-suspenseful story continuations (task 1 and task 2) ($\kappa = 0.502$).

Our analysis showed a moderate inter-annotator agreement for (a) the composite of the six categories for the suspenseful story continuations (κ = 0.570), and (e) for the composite of the six categories for both the suspenseful and non-suspenseful story continuations ($\kappa = 0.502$), whereas (c) the composite of the six categories for the non-suspenseful story continuations separately exhibits a rather fair interrater agreement ($\kappa = 0.340$). However, especially the not quite satisfying result for (c) must be inquired into in more detail. The negative kappa value might be explained by the marginal distributions of the ratings. For this reason, we also conducted an inter-annotator reliability analysis for each of the six categories in both questionnaires. For example, those analyses showed for the category potential danger in (c) an expected probability of interrater agreement of 86.28 %. The observed probability of inter-annotator agreement amounts to 87.65%, resulting in a very low kappa value of $\kappa = 0.1$. Nevertheless, we should keep in mind that the high expected agreement is due to the extraordinarily consistent rating of the four raters, who agreed mainly that almost all of the 27 story continuations do not express potential danger. However, an observed inter-annotator agreement of 87.65% is, in spite of the low kappa value, a quite robust result and a reliable basis for our further analyses.4

Results

Quantitative Analysis

We received 54 story continuations, 27 for task 1 and 27 for task 2 from a total of 27 participants and employed a generalized linear mixed-effects model (GLMM) using the R-package lme4 (cf. Bates et al. 2015) with a binomial family to assess how sus-

⁴ The results of all analyses can be found in Appendix A (see note 2 above).

pense influences the perception of each of the categories across participants' story continuations. The model included <code>>suspense<</code> as a fixed effect and <code>>annotator<</code> as a random effect to account for inter-annotator variability. The analysis was conducted on a dataset comprising 216 observations, grouped by four annotators.

For each task, one story continuation was rated unanimously as >not addressing the topic (task 1: No. 16; task 2: No. 27) by our annotators. We decided not to exclude these story continuations from statistical analysis in order to allow for the possibility that these story continuations were meant to, and actually do, comply with the tasks while the annotators were wrong about this in their judgment.

Category 1: >Potential Danger«

The model's fixed effects revealed a significant positive relationship between suspense and the perceived potential danger (β = 2.6133, SE = 0.4302, z = 6.074, p < 0.001). This indicates that narratives classified under the suspense category are significantly more likely to be associated with potential danger than those without suspense. The intercept, representing the log-odds of perceiving potential danger in the absence of suspense, was significantly negative (β = -2.6532, SE = 0.4715, z = -5.627, p < 0.001), suggesting a low baseline probability of danger perception in narratives that were not meant to be suspenseful. The random effects structure indicated variability in the intercept across annotators, with a standard deviation of 0.5542. This reflects differences in the baseline tendency of annotators to perceive potential danger. The model fit was evaluated using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), resulting in values of 208.0 and 218.1, respectively. The scaled residuals ranged from -1.3667 to 3.6120, with the majority of data points falling within acceptable limits for binomial GLMMs.

Our findings robustly demonstrate that suspense significantly enhances the likelihood of potential danger in the story continuations, as evidenced by the strong positive effect in the GLMM. The significant intercept suggests a generally low potential danger level in the absence of suspense (see Fig. 1).

Category 2: >Important Event<

The fixed effects of the model showed a significantly positive association between suspense and the recognition of important events (β = 2.8226, SE = 0.4102, z = 6.881, p < 0.001). This result highlights that narratives categorized within the suspense genre are markedly more inclined to be linked with important events compared to

⁵ We have rated a story continuation as not complying with the task if it was judged so by the majority of our annotators (i.e., at least 3 out of 4 annotators opted for not complying with task).

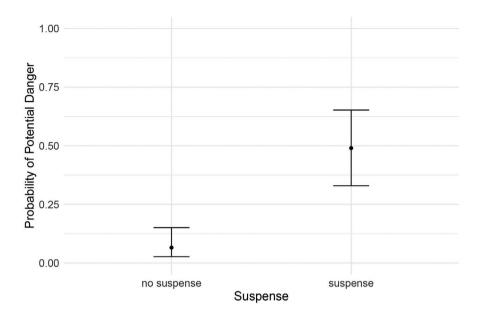


Fig. 1: Effect of Suspense on Potential Danger

those narratives not identified with suspense. Additionally, the model's intercept, which denotes the log-odds of identifying an important event in narratives lacking suspense, was significantly negative ($\beta = -2.2770$, SE = 0.6284, z = -3.624, p < 0.001). This finding suggests a baseline low probability of important events in narratives that are not suspenseful. The model's random effects structure showcased a variance in the intercept across annotators, with a standard deviation of 1.071. This variance underscores the individual differences among annotators regarding their baseline propensity to recognize important events. Assessment of the model's fit was conducted through the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), yielding scores of 209.4 and 219.5, respectively. The distribution of scaled residuals ranged from -2.4073 to 3.5876, indicating a majority of data points well within the expected boundaries for binomial GLMMs. Our findings suggest that suspense plays a significant role in enhancing the likelihood of important events within narratives, as demonstrated by the pronounced positive effect within the GLMM. The substantial negative intercept further indicates a generally low level of important events in the absence of suspense. The exponential transformation of the coefficient for suspense reveals an odds ratio of approximately 16.82, significantly elevating the odds of perceiving an event as important in the presence of suspense compared to its absence (see Fig. 2).

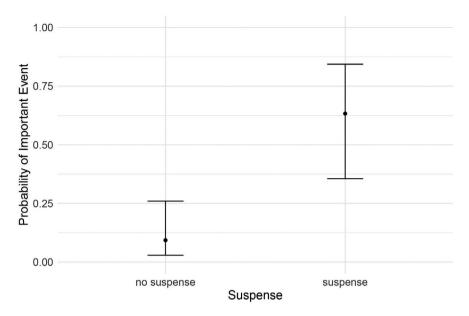


Fig. 2: Effect of Suspense on Important Event

Category 3: >General Direction«

Here we did two analyses: >negative general direction< and >positive general direction<.

The fixed effects analysis revealed no significant relationship between the presence of suspense and the expression of negative general direction (β = 0.19747, SE = 0.281, z = 0.70, p = 0.48). This finding suggests that narratives identified with suspense are not significantly more likely to be associated with negative general direction compared to those without suspense. The intercept, which approximates the log-odds of expressing negative general direction in narratives without suspense, was not significantly different from zero (β = -0.003, SE = 0.32, z = -0.01, p = 0.99), indicating a neutral baseline probability of negative event expression in the absence of suspense. The model's random effects structure indicated minimal variability in the intercept across annotators (Std.Dev. = 0.50), suggesting a relatively consistent baseline tendency among annotators to perceive a negative general direction in the narrative. Model fit metrics, including the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), were recorded at 297.3 and 307.4, respectively. The distribution of scaled residuals, ranging from -1.38 to 1.39, pointed towards an adequate fit for the binomial GLMM, with most data points adhering to expected distributions. Our investigation establishes that suspense

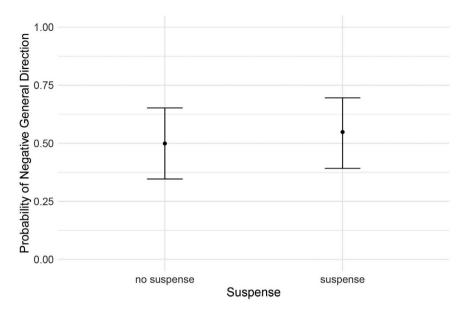


Fig. 3: Effect of Suspense on Negative General Direction

does not significantly elevate the likelihood of a negative general direction in narrative. The negligible intercept underscores the absence of a predisposed level of negative general direction in narratives not categorized as suspenseful (see Fig. 3).

The model's fixed effects did not demonstrate a statistically significant relationship between the presence of suspense and the expression of positive general direction ($\beta = -0.4264$, SE = 0.9355, z = -0.456, p = 0.648). This outcome suggests that the presence of suspense in narratives does not significantly influence the likelihood of a positive general direction. The intercept, indicative of the log-odds of expressing positive events in narratives not categorized as suspenseful, was significantly negative ($\beta = -4.1548$, SE = 1.1274, z = -3.685, p < 0.001), pointing to a generally low baseline probability of a positive general direction in the absence of suspense. Variability in the intercept across annotators was captured by the random effects structure, which exhibited a standard deviation of 1.185. This variation underscores the differences in annotators' baseline predispositions towards recognizing a positive general direction. Model fit was assessed using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), yielding values of 51.6 and 61.7, respectively. Scaled residuals ranged from -0.2641 to 7.1862, with the majority clustering within the expected bounds for binomial GLMMs, albeit with a notable outlier suggesting the presence of an extreme observation (see Fig. 4).

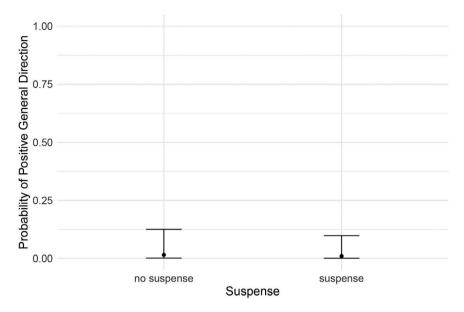


Fig. 4: Effect of Suspense on Positive General Direction

Category 4: >Mysterious Aspect<

The results from the fixed effects analysis indicated a significant positive association between the presence of suspense and the perception of a mysterious story-world aspect (β = 1.9459, SE = 0.3851, z = 5.053, p < 0.001). This finding suggests that narratives intended to be suspenseful are considerably more likely to invoke perceptions of mystery compared to those narratives without suspense. The negative intercept ($\beta = -2.2824$, SE = 0.3320, z = -6.875, p < 0.001) implies a generally low baseline probability of identifying mysterious aspects in narratives absent of suspense. Notably, the random effects structure revealed no variability in the intercept across annotators, suggesting a uniform baseline tendency among annotators to perceive mysterious aspects, regardless of individual differences. This lack of variability prompted a singular fit warning, indicating an overly complex model for the random effects structure given the data. The AIC and BIC for the model were 219.3 and 229.5, respectively. The scaled residuals showed significant dispersion, suggesting the presence of outliers or extreme values that could warrant further investigation to ensure robust model assumptions. Our analysis demonstrates that suspense plays a crucial role in enhancing the perception of mysterious aspects in narrative texts. The significant and strong positive effect found in the GLMM highlights the impactful role of suspense in narrative perception. However, the singular

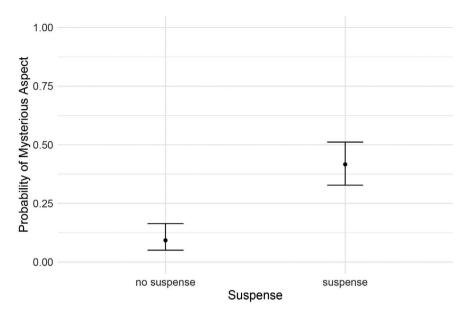


Fig. 5: Effect of Suspense on Mysterious Aspect

fit warning and the absence of variability in random effects requires cautious interpretation of the random effects structure (see Fig. 5).

Category 5: >Delay<

The results from the model's fixed effects highlighted a significant positive correlation between the presence of suspense and the perception of delay (β = 1.6062, SE = 0.3324, z = 4.832, p < 0.001). This finding underscores that narratives intended to be suspenseful are markedly more likely to exhibit delay strategies compared to ones that are not intended as suspenseful. Furthermore, the intercept – indicative of the log-odds of perceiving delay when suspense is absent – was significantly negative (β = –1.6392, SE = 0.3797, z = –4.317, p < 0.001), pointing to a relatively low base likelihood of perceiving delay in narratives without suspense. The model's random effects structure revealed variance in the intercept across annotators (Std.Dev. = 0.5442), illustrating the individual differences among annotators in their baseline perception of delay. Model fit was assessed using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), which yielded values of 249.4 and 259.6, respectively. The distribution of scaled residuals, ranging from –1.4535 to 2.8146, was within expected limits for binomial GLMMs, indicating no immediate concerns regarding model fit or residual anomalies (see Fig. 6).

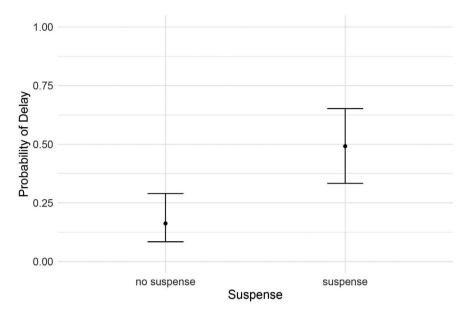


Fig. 6: Effect of Suspense on Delay

Our analyses included multiple generalized linear mixed-effects models to explore the impact of suspense across various narrative dimensions. To account for the risk of Type I errors associated with multiple comparisons, we adjusted our p-values using the Benjamini-Hochberg procedure for controlling the false discovery rate. The adjusted p-values using the Benjamini-Hochberg procedure for controlling the false discovery rate are as follows:

- For the **positive** general direction: **0.707** (no change, as this was already non-significant)
- For the **negative** general direction: **0.578**
- For the danger: < 0.01
- For the important event: < 0.01For the mysterious aspect: < 0.01
- For the delay: < 0.01

The adjusted p-values indicate that the effects of suspense on potential dangers, importances, mysterious aspects and idelays remain significant.

Qualitative Analysis

Generally, participants found it easy to produce story continuations as required by the tasks. Only two story continuations were rated as not addressing the topic.

These two continuations were not produced by the same participant. Some participants reworked their story continuations by way of cancellations and/or insertions (7 for task 1 and 5 for task 2, out of 27). These corrections indicate that they took the task seriously and wanted to improve their results. Some participants answered rather carelessly concerning orthography.

Most participants opted for a completely different content strategy in answering tasks 1 and 2, i.e., the story continuations evoke different scenarios (e.g., task 1: the book she is reading is not from this world; task 2: ther homework is unexpectedly complex.). Only one participant produced a continuation such that the suspenseful and the non-suspenseful conditions differ only in details (suspenseful: >she is watched by a stranger<; non-suspenseful: >she is watched by her father<).

For the suspenseful continuations (task 1), participants tend to describe situations with a small or even exceedingly low likelihood in the normal course of life (e.g., there is a doppelgänger in the closet, there is chased through the jungle by native people, an alien spaceship lands, the world ends, her desk has been replaced, the book she is reading is not from this world, or which are physically impossible (the mirror image acts independently of its sources). Strategies for indicating potential danger include describing immoral or otherwise horrible activities or events (e.g., a burglar lurks around the corner, the house was burning) such that a negative outcome is possible and the need for action is indicated. If there is a reference to people other than the protagonist who is already mentioned in the prompt (>Anna<), then they are male and have an unspecified identity (>a man<, >an unknown man().

For the non-suspenseful continuations (task 2), participants most often (23 out of 27) resort to describing humdrum everyday situations that involve household states of affairs or activities (e.g., she left the refrigerator door opens, the pen drops from the table, she was reading, she misplaced her car keys.). If there is reference to people other than the protagonist who is already mentioned in the prompt (Anna), then these people are familiar (mother, father).

How Do Participants Explain the Suspensefulness of Their Story Continuations (Task 3)?

In explaining their story continuations, participants most often refer to information deficits brought up in the reading process (19 out of 27). Thus, it is claimed that, e.g., the reader does not know why, the text evokes questions, the text withholds information, >text leaves many options open, >the text is mysterious, >there is an expectation that something important happens, there is a lack of understanding on the side of the reader, or the reader wants to know something. Unexpectedness, sforeshadowing, and sdisorientation, which also have to do with the reader's epistemic situation are mentioned one time each. Other explanations resort to content features of the story continuations. For these, a mixed bag of content features is used, for instance, participants stress that something unusual, drastic, or dangerous happens (because aliens feature in the story, drastic consequences are expected to happen«, the man seems threatening«), and there is one reference to the genre (vadventure/action()) and one to primal fear(being evoked. Some participants provide combinations of a reference to an information deficit in their continuations and content features.

A relatively small number of participants (4 out of 27) did not explain their continuation but rather elaborated on the story-world (the continuation >that this was not her desk after all is suspenseful because she merely dreams that this is her desk(), or merely repeated elements of the continuation () an alien spaceship is about to land is suspenseful because valiens feature in it.).

How Do Participants' Explanations Fit Their Story Continuations?

In explaining their continuations, participants point to salient features of their story continuations and specify their function in the reading process. For instance, the suspensefulness of >that she will make a terrible discovery (is explained by >because one desperately wants to know what it is that she discovers. Note that, while this story continuation also exemplifies >danger< as a content feature, the explanation does not mention this feature but rather points to the effect on the reader. Some participants even generalize over salient features of their story continuations. This indicates that they expect their continuation to meet the criteria of some general (possibly folk psychological) suspense theory. For instance, the suspensefulness of the story continuation that there is a doppelgänger in the closet who wants to kill her is explained as because this continuation raises several questions the reader wants answered«.

What Kinds of Suspenseful Stories are Read Recently (Task 4)?

Of 27 participants, 25 mentioned a suspenseful story they claim to have read recently, or at least pointed to an author (>a Stephen King novel<) or a genre (>mafia<). Most stories mentioned belong to the genres of crime (N=5), fantasy (N=5), or thriller (N=5); other genres are mentioned far less often (e.g., horror, N=1; science fiction, N=1).6

⁶ The results of the genre classification can be found in Appendix E (see note 2 above).

2.2 Study 2 and Study 3

Method and Annotation

In study 2, the task does not feature the word >suspense/suspenseful < (>Spannung/ gespannt(), but the story beginning is about a person who is in a state of suspenseful anticipation (Tab. 3). Participants are expected to complete the given story beginning such that the protagonist's condition is explained and thereby makes sense within the narrative. The question participants are expected to answer in doing so is something like: >How does my story have to go on such that my readers conclude that Anna is in a state of suspenseful anticipation? Study 2 thereby focuses on suspense as a psychological state rather than as a feature of some narrative text.

Tab. 3: Tasks and Prompts (Study 2)

Story beginning Task:	wAnna expected the news to arrive tomorrow. She was very excited [gespannt] because«
»Complete the following sentence:«	

In study 3, participants had the task of continuing the story such that the protagonist reasons about the underpinnings of her own judgment concerning a past visit to the movies (Tab. 4). In this study, neither the task nor the prompt disambiguate the notion of suspense. Thus 'suspense' can be understood as a property of the film or of the protagonist (i.e., her psychological state), or indeed in much broader (more unspecific) ways, too.8 Moreover, participants are free to narratively elaborate on Anna's judgment in any way they think is apt; in particular, they can also resort to, e.g., situational factors the protagonist deems relevant. In addition, participants do not have to confine themselves to completing just one sentence.

⁷ Note that the German original of the prompt explicitly features the word 'gespannt'; however, a more natural translation into English is 'excited' rather than the somewhat clumsy 'in a state of suspense«.

⁸ The German original version Sie fand den Film spannend, weile thus allows for several different readings, including >She thought that the film belongs to the suspense genre/features suspenseful scenes and She experienced suspense while watching the film.

Tab. 4: Tasks and Prompts (Study 3)

Task:	tory beginning:	»Anna went to the movies yesterday. She experienced suspense/thought that the film was suspenseful/thought that the film was exciting because«
»Continue the story which b	egins thus:«	

Four annotators were asked to classify the story continuations using the same six categories as in study 1. To measure the inter-annotator agreement, Fleiss' kappa was used in the same way as in study 1. Such analyses were conducted for (a) the composite of the six categories, and (b) for each of the six categories separately.

Study 2: Our analysis showed a moderate inter-annotator agreement for (a) the composite of the six categories ($\kappa = 0.526$), and (b) a good inter-annotator agreement for the category potential danger ($\kappa = 0.695$), a very moderate, almost good, inter-annotator agreement for the category **general direction (κ = 0.602), a fair inter-annotator agreement for the category important event (κ = 0.389), a poor inter-annotator agreement for the categories >delay ((κ = 0.050), >mysterious aspect < $(\kappa = -0.077)$, and >not addressing the topic $(\kappa = -0.085)$. However, these poor kappa values need to be seen in some context. When we investigate the results in more detail, we see that, for example, the analysis for the category ont addressing the topic reveals an expected probability of the inter-annotator agreement of 85.60 %, whereas the observed probability of the inter-annotator agreement amounts to 84.38 %, resulting in a negative kappa value of $\kappa = -0.085$. Nevertheless, we should keep in mind that the high expected agreement is due to the extraordinarily consistent rating of the four raters, who agreed mainly that almost all of the 16 story continuations do actually address the topic. However, an observed inter-annotator agreement of 84.38 % is a quite robust result and a reliable basis for our further analyses.9

Study 3: Our analysis showed a good inter-annotator agreement for (a) the composite of the six categories ($\kappa = 0.650$), and (b) a moderate inter-annotator agreement for the categories >delay ($\kappa = 0.536$), and >not addressing the topic ($\kappa =$ 0.441), and a good inter-annotator agreement for the categories >general direction« $(\kappa = 0.679)$, potential danger ($\kappa = 0.701$), important event ($\kappa = 0.648$), mysterious aspect ($\kappa = 0.764$). However, due to a lot of missing values (approximately 34%), the findings do not represent a robust basis. Thus, the analyses based on those results must be interpreted with caution.

⁹ The results of all analyses can be found in Appendix B (see note 2 above).

¹⁰ The results of all analyses can be found in Appendix C (see note 2 above).

Results

In creating story continuations in Study 2 and Study 3, participants have used strategies for explaining that the protagonist is in a state of suspense, or reasons about suspense, that were also used in creating a suspenseful story continuation (Study 1, task 1). Notably, in half of the story continuations produced in Study 2 (8 out of 16), participants explicitly refer to open questions or something unknown to the protagonist in order to explain her state of suspense (e.g., the unknown future is exciting(;) the reader is deprived of information().

In Study 3, 7 (out of 17) participants narratively elaborated on the protagonist's circumstances rather than the movie in order to explain her state or judgment. Thus, for instance, they claimed that the protagonist's excitement is grounded in personal relations to an actor or a character disposition. In these cases, participants did not resort to the textual strategies that are exemplified in our five categories from Study 1, which in turn is reflected by the missing values found in our analysis of inter-annotator agreement. The remaining 10 participants interpreted 'suspenseful' more as a property of the film Anna watched. Of those, 5 participants explained its suspensefulness with reference to epistemic deficits (open questions, uncertainty, or opaque character relations), but there is also a mixed bag of other features mentioned (such as surprise, risk, or film music).

3 General Discussion

Our results show that participants did not experience notable difficulties in producing suspenseful (resp. not suspenseful) story continuations (Study 1), or in narratively explaining the suspense experiences of the protagonist (Study 2, Study 3). Out of 87 continuations from all three studies (Study 1: 54 [27 suspenseful, 27 non-suspenseful]; Study 2: 16; Study 3: 17), only 2 were rated by our annotators as not complying with the task. Within the confines of the studies, participants are equally skilled in (a) suspenseful storytelling (Study 1, task 1) as well as non-suspenseful storytelling (Study 1, task 2); (b) storytelling such that it is true of the protagonist that she experiences suspense (Study 2); and (c) storytelling such that a protagonist reasons about suspense (Study 3). They are also skilled when it comes to explaining their narrative choices in suspenseful storytelling (Study 1, task 3).

We conclude that demonstration (as elicited by way of a production experiment) counts among the suitable methods of inquiry concerning the meaning of >suspense<. More generally, we suggest that storytelling is a method of inquiring into someone's conceptual competence concerning >suspense<.

Since we did not collect demographic data or data related to the writing experience of participants, we cannot tell whether, or to what extent, our findings are confined to certain groups within the general population. Participants' answers to >What was the last suspenseful book you have read? were a mixed bag: Of a total of 60 participants, 9 did not mention any suspenseful medium while the others mentioned books from different genres including popular and highbrow fiction, and 1 mentioned a film rather than a book. This suggests that our participants have reading experience and are in general able to fulfill the given tasks.

Our results are also consistent with the idea that short, one-sentence story continuations may feature suspense. This fact merits explicit mentioning, for one might be inclined to say that, as a narrative phenomenon, suspense needs some (more) story-time to build up or develop. Our findings concur with general claims in the literature that very short stories (sometimes called 'micro-stories or 'nano-stories feature important aesthetic properties (cf. Ette 2008, 1; Bonheim 1982, 1).

We can think of three possible limitations of our studies as presented above.

First, and pertaining to the tasks of Study 1, suspense may be more easily evoked than maintained. It is not clear whether our participants would be skilled enough to produce prolonged suspenseful stories. Since we specifically asked them to produce only beginnings of suspenseful stories, this issue is not addressed by our study. However, we are not aware of any predictions from the theoretical literature that suspense exhibits different features depending on story length, and therefore we see no reason to hypothesize that the relative brevity of the story continuations distorts our results. Moreover, any such limitations do not seem to affect our main goal in this study, namely getting a grip on how people understand the concept of suspense by way of a production study, as limitations in sustained suspenseful storytelling do not necessarily point to a limited understanding of the concept.

Second, the story continuations produced by our participants can be analyzed for content features of suspenseful stories (Study 1, see Categories 1–4 above), but very short one-sentence stretches of text do not easily lend themselves to an analysis of more elaborated structural features of stories, such as shifts in outcome probability (cf. Comisky/Bryant 1982; Carroll 1996, 101; Beecher 2007, 260) or erotetic features of narratives (cf. Köppe/Onea 2023).

With Category 5 (>delay<), however, our analysis does address one such structural feature, and we will turn to it in our subsequent discussion.

Third, the prompt of Study 1 (suspenseful story continuations) specifically does not allow for the analysis of any features of suspense that belong to the side of the reader, such as character identification or empathy, care for a particular outcome, or readers' estimations concerning the number of escape paths for a

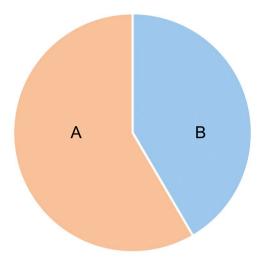
protagonist. 11 However, participants did have the chance to elaborate on the side of the reader in explaining their narrative choices (task 3), and indeed many participants opted for an explanation that features the effect of their narrative choices on the reader. Moreover, the tasks of Study 2 and Study 3 gave participants a chance to elaborate on the readerly side of suspense, too.

Our results provide some insights into semantic correlates of suspense. The qualitative analysis of participants' suspenseful story continuations (Study 1, task 1) revealed that, in light of current theoretical accounts of suspense, five categories were apt for describing the story continuations, namely potential dangers, simportant events, (positive/negative/neutral) general directions, mysterious aspects, and >delay<. The statistical analysis reveals highly significant correlations between suspense and story continuations featuring potential danger to the protagonist, events which are of importance to the protagonist, mysterious aspects of the story-world, and a delay of information concerning plot developments.

Two of these aspects are in line with the so-called >standard account(of suspense, which claims that suspense is a composite emotion consisting of hope, fear, and uncertainty (cf. Ortony et al. 1988; Tan/Diteweg 1996, 151; Madrigal/Bee 2005). A potential danger counts as the formal object of fear, and uncertainty results if information is withheld (cf. Henning 2009). However, there are two potential issues with this assumption. Firstly, with only one exception (primal fears), participants did not mention the ingredients of the standard account in explaining their narrative choices (Study 1, task 3). Specifically, participants did not claim that they wanted to produce (simple) fear, but most of them rather wanted to create information deficits on the side of the reader. Not a single participant mentioned hope in their response. Secondly, in our story continuations, there is suspense in the absence of potential danger. If a suspenseful story continuation was rated as including an important events, then there is a 58.44% chance that it was also rated as including >potential danger and/or >negative direction . However, 41.56 % of suspenseful story continuations were rated as including an important event but at the same time they were not rated as including potential danger or negative general direction (Fig. 7).

Moreover, we did not find a statistically significant correlation between suspense and a negative >general direction of the story. Cases of suspense in the absence of potentially fear-producing story features are thus not explained by the standard account, nor are they explained by any other account that claims that danger/dangerous events are essential to suspense. To name but one prominent

¹¹ The factors named here specifically can be found in Appel et al. 2002, 151; Delatorre et al. 2016, 33; Comisky/Bryant 1982; Smuts 2008, 284; Gerrig/Bernardo 1994.



A (Important Event and Danger/Negative General Direction = 58.44% B (Important Event but non Danger/Negative General Direction = 41.56%

Fig. 7: Important Event and Danger/Negative General Direction

example, our findings do not support the hypothesis, put forward by Zillmann, that suspense (in »drama«) »characteristically derives from the respondents' acute, fearful apprehension about deplorable events that threaten liked protagonists, this apprehension being mediated by high but not complete subjective certainty about the occurrence of the anticipated deplorable events« (Zillmann 1996, 208).¹²

The standard account also appears to have difficulties in explaining the statistically significant positive correlation between suspense and mysterious aspects, as ›mysterious aspect‹ is not just one way of establishing ›potential danger‹ but rather a genuine content strategy for creating suspense. While we do have some overlap between potential danger and mysterious aspect in the suspenseful story continuations, there are quite a few suspenseful story continuations which feature a mysterious aspect but not potential danger. Of all suspenseful story continuations (task 1), 41.67% opted for a continuation that fits the mysterious aspect category, while 49.07 % opted for a continuation that fits the potential danger category. Only 20.37 % of all continuations fit both categories (Fig. 8).

¹² Zillmann believes that »suspense can be generated through the anticipation of favorable, pleasing outcomes « (ibid.; cf. ibid., 219), but he explains that this is because »not winning « may produce fear, and thus count as a potential danger to a protagonist who is otherwise not endangered (ibid., 203). Cf. also Zehe et al. 2023; Hausenblas 2017, 135; Wilmot/Keller 2020, 1763.

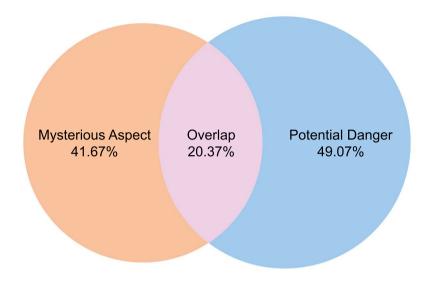


Fig. 8: Overlapping Categories

Finally, it is notable that in Study 2, only 12.5% of participants opted for a story continuation in which it is true that the protagonist is in a state of suspenseful anticipation because she is facing a potential danger. The majority of participants thus did not feel the need to narratively explain the protagonist's state in terms of a future threat.

A natural way to frame information deficits that are recognized as important to a reader is to say that a *question* comes up in the reading process. The statistically significant positive correlation of 'delay' and 'suspense' in participants' story continuations thus suggests that erotetic accounts of narrative suspense may be on the right track in claiming that suspense depends on open questions that are posed in the reading process (cf. Bentz et al. 2024). Erotetic theories of suspense differ in what properties of such questions are essential to suspense.

While the classical account of Carroll (1996) has it that suspense depends on both outcome probabilities and desirability ratings of anticipated answers to binary, plot-directed 'macro-questions', Köppe and Onea maintain that what matters to suspense is the relation of 'macro-questions' and 'potentially inquiry terminating micro questions' which suggest to readers that the end of their reading inquiry is imminent (cf. Köppe/Onea 2023). Since our findings are in line with any such theory, they do not speak in favor of any specification. But note that the claim that erotetic structure matters to suspense is also fostered by participants' explanations of their suspenseful story continuations (Study 1, task 3), for participants stress that infor-

mation deficits are important factors in creating suspense.¹³ Also, the statistically significant prominence of potential danger, pimportant event, and pmysterious aspect, in suspenseful story continuations could be explained as content features that are employed *in order to* promote an interest in the story and thereby trigger salient questions. Erotetic accounts may thus suggest themselves as both broad enough to cover a variety of possible content features of suspenseful storytelling while at the same time they identify a structural feature of suspenseful stories (their propensity to license questions of a particular type) that is not only common to all of them but also intuitively grasped by both readers and writers. Thereby, and in contrast to the standard account which appears to somewhat deviate from participants' common understanding of the term, erotetic accounts could be said to meet the criterion of conservativeness proposed by Carnap for the explication of scientific terms (cf. Carnap 1950).

We shall close these considerations with an important caveat, however. A suspense account that has deficits in explaining our results need not be bad. Rather, it has a number of options available in its defense. First, there is a difference between constitutive and contributive conditions for suspense. Constitutive conditions are necessary conditions such that any item that does not feature them does not count as an instance of the phenomenon. While hope and fear may not constitute suspense in this sense, perhaps they contribute to its felt intensity, or help bring suspense about, or else have another role in episodes of suspense. Second, an account may be meant to explain core empirical cases rather than provide necessary and/ or sufficient conditions for suspense. As such, it may still be useful – especially if it should turn out that the concept of suspense does not allow for a definition in terms of necessary and sufficient conditions. Third, an account of suspense may have an aspect of stipulation such that it proposes a more apt or useful understanding of the term that (willfully) departs from ordinary usage (cf. Carnap 1950). Conservativeness regarding the established use of a term is but one criterion of aptness for the stipulation of a scientific term. From what we can see, current suspense theory generally suffers from a lack of explicit indexing of both the explanatory target and intended scope of its results.

Comparing the results of our studies indicates the need to disambiguate the German term >spannend < (>suspenseful <). The results from Study 3 specifically indicate that our participants do not necessarily understand the German word >spannend as indicating either a psychological property or a narrative feature as predicted in theories of suspense. Rather, some of the participants may have understood

¹³ We note in passing that the importance that our participants assign to information deficits on the side of the reader may not sit well with theories claiming that uncertainty is not essential to suspense; see e.g. Gerrig 1989; Hoeken/van Vliet 2000; Smuts 2008; Delatorre et al. 2018.

>spannend(as a much more general term of (rather unspecific) approval. This is in line with the meaning explication of »spannend« as »interessant« (»interesting«) with the examples of "eine spannende Entwicklung" ("a promising development") or "ein spannendes Projekt" ("an exciting project"), as proposed by the Duden, an authoritative source on German language (Duden 2024). We take it that this is an important result for rating studies in which the German word >spannend (features in the task, for instance by asking participants to indicate the respective (spannend() scenes of a text (cf. Doust 2015, 196). It seems that participants do not automatically understand spannend as relating to either suspense-inducing narrative features or psychological states as predicted by suspense theories, and it is possible that, say, a passage of text is rated as >spannend((>exciting()) for reasons that have nothing to do with suspensefulness proper. Our participants are also familiar with >suspense((>spannend()) as a classificatory term that applies to whole books rather than elements of a story or psychological states. This is indicated by the fact that many participants readily mention books that fit the category (Study 1, task 4).

Our production studies differ in whether participants are asked to produce a (non-)suspenseful story continuation (Study 1, tasks 1/2) or a story continuation in which it is true of the protagonist that she is in a state of suspenseful anticipation (Study 2). The studies thus differ in what >suspense is predicated of. A qualitative analysis suggests that our participants do not understand the term >spannend < differently depending on whether they take it to apply to a story or to a person's psychological state. This is indicated by the fact that our participants apply the very same strategies in order to relate something suspenseful or to narratively elaborate on the protagonist's state of suspensefulness. (In terms of our study design, this means that the same categories apply to continuations complying with both tasks.)

A convenient way of explaining these results is to assume that >Spannung(/>spannend exhibit a centered ambiguity such that the term has different meanings depending on what it is applied to (compare healthy as applied to an apple or to a person; cf. Lienemann 2010, 325–327). When predicated of a text, spannend« denotes a functional property, i.e., a narrative qualifies as suspenseful if it is properly related (causally, perhaps) to certain psychological states on the side of the reader (Fig. 9). This hypothesis is well in line with the explanations our participants give for their narrative choices (Study 1, task 3) – as we have seen, our participants mostly refer to functional aspects of their story continuations in order to explain their narrative choices.

Concerning the internal conceptual structure, our findings suggest that there is no set of individually necessary and sufficient conditions that govern the concept of suspense. According to Strawson (1963), this is to be expected from natural language terms (such as >spannend< or >Spannung<). For the story continuations produced in Study 1, we have found significant correlations between suspense and

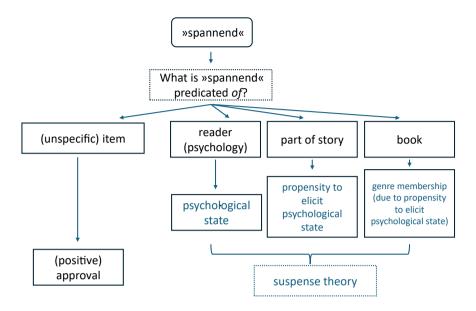


Fig. 9: Centered Ambiguity of >Spannung</>spannend<

story continuations featuring potential danger to the protagonist, events which are of importance to the protagonist, mysterious aspects of the story-world, and a delay of information concerning plot developments. We may represent these as a disjunctive set of necessary conditions for suspense, or else try to assign each of them a place in a theory of suspense. As discussed above, our results could be explained by a theory claiming that what is necessary and sufficient for suspense is the opening of plot-related questions which are made salient and important to the reader, which in turn is achieved by way of, e.g., introducing mystery or danger. However, we readily concede that much more is needed to establish a full-blown theory of suspense along these lines.

Finally, our results are not conclusive concerning the taxonomic structure of 'suspense' and its cognates such as 'mystery', or 'tension'. The theoretical literature offers different accounts in this regard, including a picture such that 'suspense' and 'mystery' are different specifications of textual information structure (cf. Hausenblas 2017). To the best of our knowledge, there is no full-blown discussion of these matters in the theoretical literature as of today. In any case, making sense of the data obtained from language users will be amongst the tasks a suitable taxonomy has to tackle.

4 Summary and Outlook

In the theoretical literature, there is a somewhat puzzling multitude of divergent approaches exploring the common phenomenon of suspense, i.e., something that is denoted by, e.g., the English word >suspenseful or the German >spannend <. Our production studies aimed at elucidating the way the German word >spannend< is understood in storytelling contexts. Our results suggest that, first, naïve (non-expert) speakers of German (as opposed to, say, established authors of literature) are very well able to produce story continuations that qualify as suspenseful or that narratively explain a protagonist's state of suspense. Second, the story continuations produced in the suspenseful condition show a statistically significant pattern, suggesting that suspenseful narration is comprised of a number of content features. Additionally, participants highlight that the narrative strategies employed have the intended effect of delaying outcome information. Third, these results can be compared to predictions from the theoretical literature on suspense, suggesting that the standard account of suspense may be explanatorily inferior to erotetic accounts of suspense.

In closing, we suggest that accounts of suspense that target the phenomenon of suspense as it is commonly understood should be attentive to how ordinary. readers use the term. We suspect that the standard account of suspense in particular may be based on a »one-sided diet of examples« (Wittgenstein 1999, § 593) and that it does not align too well with our participants' concept of suspense. Production studies may be of help when it comes to elucidating that very concept. To quote another master of the ordinary language program in twentieth-century analytic philosophy: »The right kind of attention to the ordinary use of expressions provides a means of refutation of theories founded on mistaken assimilations; it provides a description of the actual functioning of the problematic concepts, to take the place of the mistaken theory; and, finally, it helps, or may help, with the diagnosis of the temptations to the mistakes.« (Strawson 1963, 517)

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