An empirical assessment of how readers value text: an adaption of the willingness-to-wait paradigm

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Abstract

Print experience is critical for becoming a skilled reader and leisure reading is a major source of print experience. Therefore, it is important that we understand what motivates individuals to read in their leisure time. Existing questionnaires measuring reading motivation are trait-based, generally involving self-reported ratings such as, "I enjoy reading." These do not capture the dynamic, moment-to-moment changes in motivation that could occur (e.g. due to the text, social context). In this study, we used a willingness-to-wait paradigm to quantify the subjective value participants assign to books, based on the principle that people only wait for items that they find rewarding. We asked 40 adult participants to read book synopses and rate how much they enjoyed each synopsis. We then assessed whether participants would wait to learn more information about the book, predicting that adults would only wait when they rated a book as enjoyable. Our findings supported this prediction, and additionally demonstrated that enjoyment ratings were associated with reading comprehension. A traditional reading motivation questionnaire was not a good predictor of waiting decisions or reading comprehension. This novel paradigm allows us to investigate the decisions people make about reading and opens future avenues for investigating the factors affecting their choices.

An empirical assessment of how readers value text: an adaption of the willingness-to-wait paradigm

Reading has a large positive impact on learning and well-being[1,2] and print experience is critical for becoming a skilled reader. Leisure reading is associated with large differences in print exposure. For example, the most avid readers (top percentile) read over 3 million words more than the least frequent readers (bottom percentile)[2]. Indeed, high intrinsic motivation to read has been linked with larger vocabularies and better reading comprehension skills[3,4,5,6,7,8,9]. Consequently, understanding how to motivate someone to read is important to educators and policy makers. Our existing measures tend to focus on children's overall motivation for reading, rather than trying to quantify the dynamic contextual factors that might influence an individual's motivation to read. In the present study, we use a novel experimental method to measure dynamic changes in reading enjoyment, demonstrating how this measure links to reading motivation and comprehension.

Reading motivation is typically assessed through self-report questionnaires[10]. Such questionnaires rely heavily on people's memory of events and are prone to biases. An item on a popular reading test, the Progress in International Reading Literacy (PIRLs) questionnaire[11] is, "I enjoy reading". The use of such items means that motivation will be confounded with people's reading proficiency (better readers read more[12,13]), as well as their self-concept of their reading proficiency. It is also unclear whether available questionnaires all tap the same construct, i.e., reading motivation. For instance, a review of sixteen available reading motivation questionnaires showed that different scales used vastly different terminology, and the subdivision of items into sub-constructs was not consistent across studies[10,14]. However, and most importantly, these questionnaires only measure enjoyment at the trait level,

inherently implying that an individual's motivation to read is an invariant construct that remains stable over time. This is very unlikely to be true. For instance, someone is more likely to read a text about a topic they enjoy, and less likely to do so when the text is perceived as dense or boring. They are more likely to read when they have easy access to books, and less likely to read if they must travel long distances to obtain them. These contextual factors could help us understand how we can improve motivation for reading.

To capture dynamic changes in motivation, we first need to understand and define motivation. Berridge and colleagues have suggested that motivation involves at least three separable psychological components, "liking", "wanting", and "learning", which typically cohere. Liking is at the heart of motivation and refers to the hedonic impact of a stimulus[15,16,17]. For example, the sensation of sweetness typically triggers positive facial reactions in human infants, non-human primates and rodents, and is considered likeable[18]. Liking can also be triggered by higher-order cognitive stimuli such as social stimuli[19,20] or music[21,22] or text[23,24,25]. Asking participants to subjectively rate their enjoyment of different stimuli to read could consequently offer a dynamic measure of motivation, as this would index the enjoyment or hedonic impact of different texts. In work conducted by Ripollés and colleagues, behavioural ratings of enjoyment during a word learning task offered a good index of intrinsic reward, showing convergence with activity in reward processing regions of the brain, as well as galvanic skin responses[23,24,25].

Wanting indexes the process where reward cues become attractive enough to trigger goal-directed actions to obtain the reward in question. To our knowledge, wanting has not been studied in the reading literature. However, it is only when someone "wants" a book that they would decide to buy it, or make the effort to go to the library to borrow it. To assess

"wanting", we need to go beyond measuring simple "liking" of a stimulus and assess a participant's willingness to take on a cost to obtain it[17]. This allows us to understand if stimuli are not just liked, but desirable. In humans, monetary, temporal, or physical effort costs are typically used to assess the desirability or value of a presented stimulus[16,26,27,28], as rewards are discounted by the costs needed to obtain them. Kang and colleagues observed that when participants were in states of high intrinsic motivation (such as curiosity about an answer to a trivia question), they were more likely to spend one of their limited number of tokens to obtain the answer to the question[29]. Participants are also more likely to wait for information when they are curious[30,31]. These studies demonstrate that people are willing to take on a cost when they find information intrinsically rewarding. Willingness-to-wait designs work with children, as well as participants with poor reading ability[25,32]. Here, we plan to assess if people are willing to take on temporal costs for reading, as this will provide us with an empirical index of wanting.

The aforementioned studies also highlight a close link between states of high intrinsic reward and later learning, as postulated by Berridge[15,16,17]. Kang and colleagues demonstrated that participants were more likely to remember answers to questions they were curious about, even 1-2 weeks post-test. This finding has been consistently replicated[30,31,32]. Extrinsic reward is known to be associated with enhancements in long-term memory, as reward primes memory networks leading to improvements in long-term memory through dopamine release in the hippocampus[18,42]. This work has suggested that intrinsic states of reward could have the same effect. In this vein, Ripolles and colleagues found words assigned high enjoyment ratings were remembered better than those with lower ratings and demonstrated that this was due to a strengthening of reward-memory links at the neural level[23,24]. This link is important, as it suggests a close mechanistic link between motivation and reading, which would occur at

the state level rather than the trait level. For instance, we might expect that information that is enjoyed would be remembered or comprehended better than information that is less enjoyable.

In the present study, we used a willingness-to-wait design to validate whether participants' enjoyment ratings for a text were a good index of subjective value, and also assess if enjoyment was linked to comprehension of a text. In our task, participants encountered a variety of book synopses, sampled from multiple genres. We assessed if participants found items intrinsically valuable by investigating if they would wait for more information about the book (specifically, the book cover). This design allowed us to assess how enjoyment was associated with participants' decisions to take on temporal costs in an ecologically valid way. We then examined if enjoyment was associated with participant's comprehension of a text, predicting that book extracts that were enjoyable would be more likely to be remembered. We expected that higher enjoyment ratings would be associated with: (1) a greater likelihood of waiting for more information about a book; and (2) higher comprehension scores.

Results

Over the course of this experiment, 40 native English speakers aged 18-40 encountered forty book synopses to read. Once participants had read a synopsis, they were asked how much they enjoyed it, and had to answer two questions that assessed their comprehension of the synopsis. Finally, they were presented with a choice to see more about the book – they had to wait for an unspecified period of time if they wanted this information. If they waited, we showed participants the book's cover, which gave them much more detail (book title, author, genre) and would allow them to purchase the book at a later date. A wait time of between 3-6 seconds was imposed on choosing 'yes', such that seeking this information about the book

was associated with a temporal cost (see Figure 1 for a schematic of willingness-to-wait task). The financial compensation associated with taking part in the experiment was fixed, so we expected that participants would only choose to wait if they wanted to seek further information about the book – they obtained no financial reward from waiting.

We excluded data from three participants who chose to wait for all the synopses, as we did not know if this reflected a misunderstanding of task instructions. We consequently retained data from 37 participants. We constructed linear mixed effects models to address the two key hypotheses.

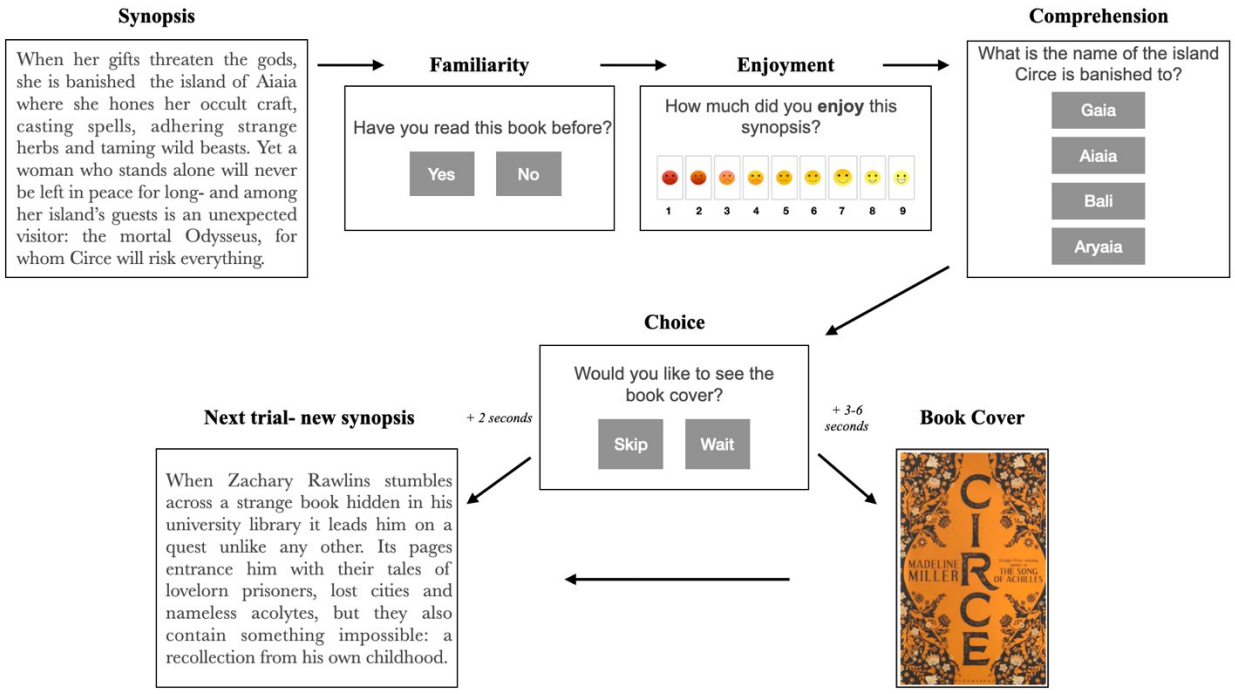

Figure 1. The experimental paradigm. Participants encounter a synopsis. They are asked whether they previously read the book and then to rate how much they enjoyed reading each synopsis. Following this, they answered two comprehension questions about the text. Finally, they were asked whether they would be willing to wait to see the associated book cover a text. If they choose "*skip*" they would wait 2 seconds before starting the next trial. If they choose "*wait*", they would wait between 3-6 seconds before seeing the book cover and beginning the next trial.

Hypothesis 1: Higher enjoyment ratings are associated with greater likelihood to wait

We first assessed correlations between the number of decisions to wait across the experiment and: a) reading motivation scores from the Adult Reading Motivation Questionnaire, r=-.09, p = .6, b) accuracy scores from the sentence verification task; r=-0.06, p=.72, and c) the reading engagement questionnaire; r=.015, p=.72, to assess whether these needed to be accounted for in the main model. As these scores did not significantly correlate with the decision to wait, they were not included in the final model.

A logistic mixed effects model was conducted with decision to wait as the dependent variable, enjoyment was modelled as a fixed and random effect (see Methods for further details about model construction). As predicted, participants were more likely to wait to learn more information about a book if they reported higher enjoyment ratings when reading the corresponding synopsis, β= 0.94, SE= 0.11, z= 8.73, p<0.001 (*see Figure 2a).*

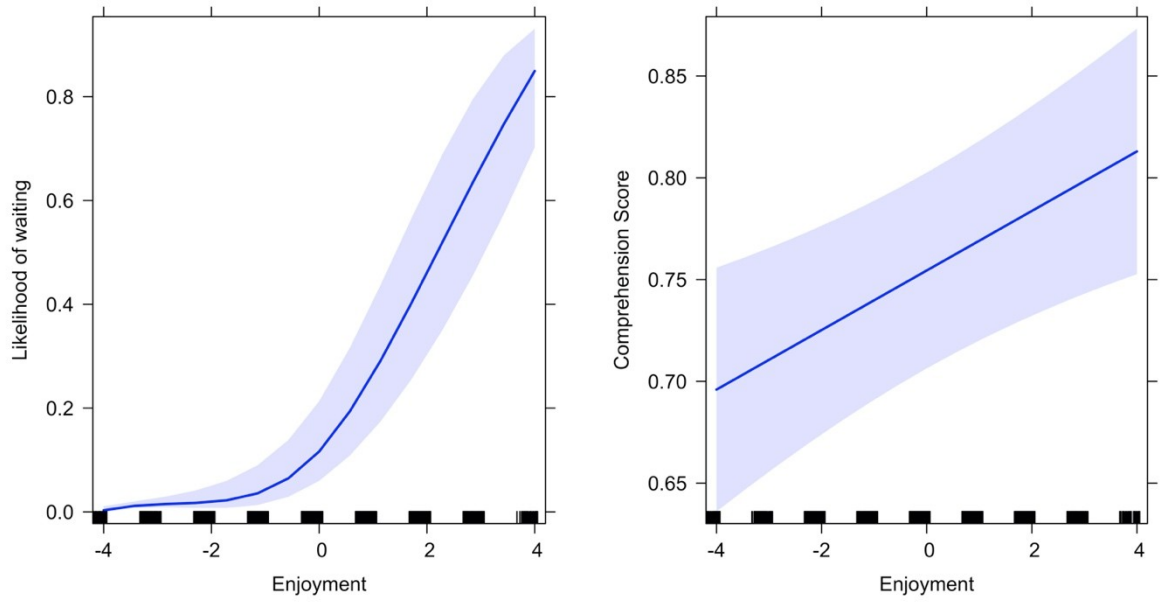

Figure 2. Participants were more likely to wait to see the book cover when they reported higher enjoyment, with the solid blue line indicates the influence of enjoyment on the probability of the decision to wait (a). Enjoyment was positively associated with

comprehension accuracy. The solid blue line indicates the influence of enjoyment on the probability of having high accuracy on the comprehension questions (b). The shaded area around the solid line shows the 95% confidence interval. The black boxes on the x-axis indicate the number of observations at each level of the factor of enjoyment.

Hypothesis 2: Enjoyment ratings are positively associated with comprehension scores.

As before, we assessed the relationship between our key dependent variable, comprehension, and scores on the Adult Reading Motivation Questionnaire, sentence verification accuracy, and time spent reading, to assess if these needed to be included as factors in our models. Correlations between comprehension and Adult Reading Motivation Questionnaire (r = -0.062, p = 0.72) and the reading engagement questionnaire (r = -0.17, p = 0.32) were not significant. As we anticipated, sentence verification scores and comprehension scores were significantly correlated (r = 0.36, p = 0.028). We therefore included reading proficiency (scores from the sentence verification task) as a fixed factor in our models, to account for individual participant-level differences in reading comprehension.

We then conducted a linear mixed effects model with comprehension scores as the dependent variable, and enjoyment ratings and reading ability as fixed effects (see Methods for further details about model construction). We included random effects of item and participant. Comprehension was positively associated with enjoyment ratings, β= .015, SE= .005, t= 3.19, p=.001 (*see Figure 2b*)**,** but not with reading ability (β= .003, SE= .002, t= 1.79, p =.08). Comparison of the full model with enjoyment and reading ability as fixed effects to a reduced model where enjoyment was removed found that the full model was a better fit to the data ($X^2(1)$=10.11, p =0.001). This indicated that the association between comprehension scores and enjoyment ratings was significant even when accounting for reading ability.

Discussion

Previous studies have investigated reading motivation in children and adults using trait-based measures such as questionnaires[10,11,14]. Our aim was to measure dynamic changes in enjoyment during reading, that is, exploring states of high intrinsic reward. To do so, we used a willingness-to-wait design allowing us to assess enjoyment or the hedonic impact of 40 different texts. We also assessed how hedonism was related to "wanting", i.e., whether people would be willing to take on a temporal cost to receive further information, and whether it was related to learning from the text. We found that higher enjoyment scores were associated with the desire to learn more information about the associated book. We also observed a positive relationship between enjoyment and comprehension, which remained even when controlling for reading ability. This indicates we can measure dynamic changes in enjoyment, and that these dynamic changes appear to be indexed to meaningful aspects of reading. Somewhat surprisingly, we found that a trait-based measure of reading motivation did not have strong links to waiting decisions or comprehension. We discuss each of these issues in further detail below.

Enjoyment predicts the likelihood of waiting for information

We hypothesised that there would be a positive association between enjoyment and likelihood of waiting for more information, demonstrating a link between "liking" and "wanting". This would additionally demonstrate validity of the "liking" ratings, mitigating against potential demand characteristics, as people would be unwilling to take on temporal costs for information, they did not consider valuable. Indeed, we demonstrated that higher enjoyment scores for a synopsis were associated with a greater likelihood to wait for more information about the associated book. This finding therefore fits with the literature

suggesting that states of high intrinsic motivation for information are associated with a greater likelihood to take on temporal costs[27,28,30]. While other work has demonstrated this phenomenon using construct like trivia questions, this is the first demonstration of this effect using book synopses. Crucially, this demonstrates states of high intrinsic motivation experienced during reading can affect the decisions people make about further reading.

The fact that people were willing to take on temporal costs to learn more about books is important. There was no extrinsic value to seeking the information we provided, for instance, there was no test of book cover knowledge, and no monetary advantage. Participants were fully aware of the trial structure, having completed some practice trials at the start of the experiment. Indeed, as we offered fixed financial compensation, there was a financial disincentive for waiting (as participants would take longer to complete the experiment). Yet, we found that participants were willing to wait when they enjoyed the synopsis. This has important ramifications, suggesting that enjoyment of a text might lie at the heart of engaging in behaviours such as making the trip to a library, paying for a book, or choosing to spend time reading. Enjoyment may therefore be a fruitful target when designing reading interventions.

Additionally, we did not find evidence of a significant correlation between the motivation scores reported on the Adult Reading Motivation Questionnaire and the decision to wait. Previous literature reports that motivation (particularly intrinsic motivation) is a predictor of reading behaviours and engagement[7,34,35,36]. We consequently expected that high scores on the Adult Reading Motivation Questionnaire (reflecting a highly motivated reader) would predict the likelihood of waiting for more information about a book. Yet, individuals who self-identified as highly motivated readers were not more likely to wait to learn more information

about a book than those with lower motivation scores. We did get a range of scores (33-92) from the Adult Reading Motivation Questionnaire, suggesting that the lack of a correlation was not driven by a lack of variation in our sample. These differences point to the need to whether constructs tapped by these questionnaires fit with real-world decisions, and how state-based measures relate to more common trait-based measures.

Enjoyment during reading is associated with enhanced comprehension of a text

We included comprehension questions after each passage for a number of reasons. First, we wanted to ensure that participants paid attention to the texts, rather than just skimming them. Second, their inclusion also allowed us to test the link between enjoyment and comprehension. Multiple studies have suggested reading motivation is positively linked to achievement[7,38] and comprehension[3,4,5,6,7,8,9]. However, recent cross-sectional genetic studies suggest that reading ability is predictive of reading enjoyment, rather than the other way around[16]. In contrast, longitudinal genetic studies have indicated there is a bidirectional link between reading proficiency and reading enjoyment, especially in older children[38,39]. One issue with these studies is that they use a trait-based approach. They implicitly imply that the links between enjoyment and ability are stable. Yet, there are situations where a good reader might not enjoy reading (or vice versa). Here, we wanted to ask if **states** of enjoyment could predict learning within individuals. Previous studies have demonstrated this effect for trivia questions, wherein states of high curiosity are associated with better long-term learning[23,24,25,30,31,39]. Neuroscience studies point to a close coupling of activity in reward processing regions of the brain and regions associated with learning and memory, such as the hippocampus, during high reward states[25,40]. In our study, we find that enjoyment scores positively predict comprehension accuracy. Notably, this association between enjoyment and comprehension remains when controlling for individual reading proficiency, suggesting that

this is not driven by people who enjoy texts being better readers. This points to a link between reward processing and learning systems during reading, suggesting boosting enjoyment during reading could lead to better learning. This might be an important finding for education, helping us design targeted intervention strategies focusing on reading enjoyment to promote positive reading behaviours.

However, an important caveat is that it is not possible to establish the causality of this relationship from our study. Better comprehension of the text might produce greater enjoyment, rather than the other way around. This is somewhat unlikely given that we were testing proficient adult readers, but future studies which look to enhance state-based enjoyment could help reveal whether this method is effective in driving better comprehension. Additionally, we designed comprehension questions to be quite specific to each synopsis and they were presented after the synopsis. As such, they are likely to depend on memory, not merely reading comprehension. While our results still point to a role of enjoyment in learning from text, such effects may be memory-based. By presenting the synopsis alongside comprehension questions that require making an inference from the synopsis, we could disentangle memory and comprehension-based effects in future studies.

State vs trait-based measures of reading motivation

We have drawn a dichotomy between state- and trait-based approach to motivation. However, it is likely that the two are related, and that those with greater reading motivation are more likely to spend a greater proportion of time in a state of high intrinsic motivation. Studies focusing on trait-based motivation have helped establish links between individual motivation and reading skill[3,4,8,9,37] and reading behaviours[1,2,41]. In addition to this, we believe characterising states of high motivation for reading can help us understand how we can

stimulate reading enjoyment. For instance, people's enjoyment of music can be enhanced through social influence[19,20]. Choice is another factor that is purported to influence enjoyment and valuation of experiences[42,43,44]. Could these factors affect reading enjoyment? What is their impact on future learning? It is extremely challenging to establish how these can influence reading enjoyment using trait-based measures. However, state-based measures easily lend themselves to such enquiry and can help us establish how these different factors affect reading enjoyment. Importantly, we can also assess the degree to which factors matter for each individual, through assessing interactions with reading ability. The development of this state-based measure will allow us tailor strategies and interventions to enhance reading enjoyment.

Conclusion

For the first time, we empirically assessed dynamic changes of enjoyment during reading. We found that higher levels of enjoyment are linked to greater engagement with the text in question, and improved comprehension of the text. These findings show the importance of reading for pleasure and suggest that targeting enjoyment during reading might boost the decision to read, as well as learning from reading.

Methods

Participants

Determination of sample size

We a ran power analysis using the SimR package[45] using data from a pilot study (n = 23). The pilot study employed a similar, but not an identical design to the current study. This analysis indicated that using an alpha of .05, a sample size of 20 would yield a power of 0.9. As this

study employed four counterbalanced lists, we recruited 40 participants, assigning 10 participants at random to each list.

Participants

We recruited 40 participants (M_{age} = 31.10 years, SD = 10.18, 29 females) using the Prolific platform, www.prolific.ac. Three participants were excluded from our analyses because they made the decision to wait on every trial. All participants were between the ages of 18 to 50 years old. All participants were native English speakers with normal or corrected-to-normal vision and hearing. Participants were excluded if that had any known developmental disorders affecting learning (e.g. dyslexia), or any neurological disorders (e.g., epilepsy).

Materials and procedure

Participants provided informed consent and were invited to complete the experiment online with all tasks presented on Gorilla.sc, an online experiment platform[46]. Access was restricted to participants using tablets and computers, to ensure that the text displayed correctly. Participants were informed that the study would last for 1 hour. Before beginning the experiment, all participants provided consent and completed a demographics form stating their age, gender, any known language disorders, developmental disorders, or any neurological disorders. Participants completed an adult reading motivation questionnaire (ARMQ), a reading engagement questionnaire. a sentence verification task, followed by the willingness-to-wait task. The methods were performed in accordance with relevant and guidelines by Royal Holloway, University of London Ethics Committee [ethical approval code: 2543-2021-02-05-17-21-PJJT001].

Adult Reading Motivation Questionnaire

The Adult Reading Motivation Questionnaire[47] was administered to obtain a measure of self-reported motivation. This questionnaire provides an overall score for reading motivation, as well as scores for four factors contributing to reading motivation: reading efficacy, reading recognition, reading as a characteristic of self, and reading to do well in other realms. This questionnaire was selected as it is the only reading motivation questionnaire for adults that was easily accessible[12].

Reading engagement questionnaire

We developed a reading engagement questionnaire to measure how frequently participants read. We asked participants what they had read and how much time they spent reading one day prior to the experiment. They were given four options of 0 to 30 minutes, 30 minutes to 1 hour, 1 hour to 2 hours or more than 2 hours. In a pilot study, we established that completing this questionnaire 3 times did not yield substantially different information. During analysis, the four options above were coded as 1, 2, 3, and 4. These levels were then correlated with an individual's likelihood to wait and comprehension scores.

Sentence Verification Task

To determine reading proficiency, we administered a sentence verification task[30]. This task captures both reading comprehension and reading fluency. The task consisted of 80 sentences. Each sentence stayed on the screen for three seconds, during which time participants were asked to decide whether the sentence was either true or false. The statements were simple sentences based on real world knowledge, for instance, "Grass is green". For each correct response, the participant was given 1 point, with 80 points being the maximum score. Participants had 90 seconds in total to read and verify all sentences.

The willingness-to-wait task

During the task, participants encountered forty synopses (see below for details on synopsis selection). Participants were allowed a maximum 1 minute to read each synopsis. Participants were also asked about whether they had read the presented book previously. They were then asked how much they enjoyed reading the item on a likert scale from 1 ("hated it") to 9 ("loved it"). To measure arousal, they were asked how tired they were on a scale of 1 ("very tired") to 9 ("not tired at all"). Subsequently they encountered two comprehension questions for the synopsis (see below for the development of questions), See Figure 1 for task schematic.

Participants were then asked whether "they would like to know more about this book". During the task participants were provided with two response choices, either "skip" or "wait". They were instructed to select "Skip" if they were not interested in learning more information. Participants would then wait 2 seconds before moving on to the next trial. Participants were instructed to select "Wait" if they wanted to find out more about the book. Participants were told they would have to wait between 3-6 seconds before further information was revealed. The time delays for each item varied between 1s, 2s, 3s or 4s. Time delays were counterbalanced for each item across participants. For each book, the book-cover showing the author and title was displayed to the participants (see figure 1). Participants were told the entire task was expected to take 1 hour, and they would be paid a fixed amount (£5.10).

Synopsis Selection

Forty novel synopses were selected. Synopses were taken verbatim from a popular online book merchant (amazon.co.uk). Both fiction and non-fiction books were selected. Synopses

were sampled based on their novelty and genre. First, well-known books or books with a high number of accolades were avoided to maximise the likelihood that they were unfamiliar to participants. Then, we ensured that a variety of genres were represented. Then, these synopses were sampled further by their word count and reading ease. Synopses with a minimum word count of 60 and maximum word count of 200 were included in the final sample. Reading ease for each synopsis was measured using the Flesch Kincaid Grade level scores. A low reading ease score suggested a text was more difficult to read and a high reading ease score being an easier text to read. For instance, a score between 0 and 30 suggested the text would be at a graduate reading level. Synopses with a minimum reading ease score of 7.5 and maximum reading ease score of 85 were included.

Comprehension Questions

All participants answered two questions to assess their comprehension of each synopsis. One question was literal; where the participant would be able to answer the question verbatim from the synopsis. The second was non-literal where the participant would have to make an inference from the synopsis to answer[48]. All questions were multiple choice with four options giving a 25% chance of a correct response. Comprehension questions were piloted prior to the experiment (N = 20), and we ensured that no item was answered with more than 40% accuracy when read in isolation (i.e. the corresponding synopsis was no presented), and accuracy was more than 40% for all questions when presented after the synopsis (as done in the experimental task).

Statistical Analyses

All analyses were performed in R[49], with logistic regression models and mixed effects models created using the lme4 package[50]. Plots were created using the effects package[51].

Before beginning the analysis, we removed any items where participants had stated they had read the book before, to ensure we measured responses from participants when they encountered novel items. We first ran correlations between the decision to wait/ comprehension and reading motivation scores from the Adult Reading Motivation Questionnaire, accuracy scores from the sentence verification task and time spent reading to assess if these needed to be included in the model. Any correlations where $p<0.2$ were included into the models.

Hypothesis 1: Higher enjoyment ratings are associated with greater likelihood to wait

A logistic regression model was created with the decision to wait as the dependent variable and reported enjoyment ratings as a fixed effect. To account for random variance by item (synopses) and participant we included these as random intercepts. To account for the random variance in the reported enjoyment ratings we included these as random slopes by item and participant. Enjoyment ratings were mean centred prior to inclusion in the model. Correlations between the decision to wait and reading motivation scores from the Adult Reading Motivation Questionnaire, accuracy scores from the sentence verification task and time spent reading all returned a $p>0.2$ therefore were not included in the final model. The best fitting model was a maximal fixed effects model which included random slopes of enjoyment:

Wait_choice ~ 1 + enjoyment_centred + (1 + enjoyment_centred | ID) + (1 + enjoyment_centred | Item)

Hypothesis 2: Enjoyment ratings are positively associated with comprehension scores.

A mixed effects model was created with comprehension scores from the willingness-to-wait task being the dependent variable, enjoyment ratings and reading ability scores being the fixed effects. To account for random variance by item and participant we included these as random intercepts in the model. Enjoyment ratings were also centred prior to model fitting. Correlations between the decision to wait and reading motivation scores from the Adult Reading Motivation Questionnaire and time spent reading all returned a $p>0.2$ therefore were not included in the final model. However, as expected correlations between comprehension scores and accuracy scores from the sentence verification (measure of reading ability) returned a $p<0.05$ and therefore was included in the final model as a fixed effect. During model fitting, a maximal model with random slopes of enjoyment by participant and by item did not converge. Therefore a simple model with just fixed effects and random intercepts of participant and item was executed:

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ComprehensionScore ~ 1 + enjoyment_centered + Reading_ability + (1 | ID) + (1 | Title)
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Data availability

The data and analysis code are openly available at the Open Science Framework: https://osf.io/ftexh/

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Author Contributions

Amrita Bains: conceptualisation, methodology, resources, analysis, writing- original draft. Saloni Krishnan: conceptualisation, methodology, resources, analysis, writing- review and editing, funding acquisition. Jessie Ricketts: conceptualisation, writing- review and editing. Carina Spaulding: conceptualisation, writing- review and editing.

Competing interests

The authors declare no competing interests.

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