Article

The role of empirical methods in investigating readers' constructions of authorial creativity in literary reading

Fabio Parente 🄳
University of Nottingham, UK; University of Derby, UK

Kathy Conklin
University of Nottingham, UK; Max Planck Institute for Psycholinguistics, the Netherlands

Josephine M Guy
University of Nottingham, UK

Rebekah Scott
University of Nottingham, UK

Abstract
The popularity of literary biographies and the importance publishers place on author publicity materials suggest the concept of an author's creative intentions is important to readers' appreciation of literary works. However, the question of how this kind of contextual information informs literary interpretation is contentious. One area of dispute concerns the extent to which readers' constructions of an author's creative intentions are text-centred and therefore can adequately be understood by linguistic evidence alone. The current study shows how the relationship between linguistic and contextual factors in readers' constructions of an author's creative intentions may be investigated empirically. We use eye-tracking to determine whether readers' responses to textual features (changes to lexis and punctuation) are affected by prior, extra-textual prompts concerning information about an author's creative intentions. We showed participants pairs of sentences from Oscar Wilde and Henry James while monitoring their eye movements. The first sentence was followed by a prompt denoting a different attribution (Authorial, Editorial/Publisher and

Corresponding author:
Kathy Conklin, School of English, University of Nottingham, Trent Building, Nottingham NG7 2RD, UK.
Email: aezkcc@nottingham.ac.uk

Typographic) for the change that, *if* present, would appear in the second sentence. After reading the second sentence, participants were asked whether they had detected a change and, if so, to describe it. If the concept of an author's creative intentions is implicated in literary reading this should influence participants' reading behaviour and ability to accurately report a change based on the prompt. The findings showed that readers' noticing of textual variants *was* sensitive to the prior prompt about its authorship, in the sense of producing an effect on attention and re-reading times. But they also showed that these effects did not follow the pattern predicted of them, based on prior assumptions about readers' cultures. This last finding points to the importance, as well as the challenges, of further investigating the role of contextual information in readers' constructions of an author's creative intentions.

1. Introduction

Within the broad discipline of English Studies, the concept of an author's creative intentions, and the role of this concept in literary interpretation, have long been contentious issues. For the last half century or so, excepting the genre of literary biography and some forms of text-editing, academic enquiry has tended to concentrate on investigating the structures – linguistic, cultural and historical – through which such creative agency is constituted by the reader, as well as the function of these constructs in the generation of literary meaning. However, in a recent overview of the rich body of linguistic, theoretical and philosophical literature devoted to these topics, Guy et al. (2018) pointed to the continuing absence of empirical support for almost all current hypotheses about how authors' creative intentions are constructed in the process of literary reading. They further suggested that understanding of this concept has been impeded by a lack of clarity about the extent to which authorial intention can be considered a primarily linguistic or text-centred phenomenon, and therefore the light that can be shed on it by stylistic analysis alone. While it is uncontentious to assert that authorial intention begins 'not at the moment of reading the text, but in the reader's culture' (Stockwell, 2016: 160), the precise relationship between these variables remains to be determined. Likewise, although Chatman's (1978: 147–150) elaboration of the concepts of the 'implied' and 'real' author have been useful for pointing to the distinctiveness of the concept of authorial creativity inferred from the text, the question of how precisely that construct is informed by contextual information about the biographical author continues to be under-investigated. Guy, Conklin and Davies ended their review by showing how the application of psycholinguistic methodologies, including the use of eye-tracking technology to test readers' actual (as opposed to hypothesised) responses to texts, might be employed to address these issues. The present study takes up this challenge.

Research by Carrol et al. (2015) has demonstrated how eye-tracking can be used to determine which linguistic features, including fine-grained ones such as punctuation, readers pay most attention to during literary reading. Experiments can therefore be set up to test literary stylisticians' hypotheses about what constitutes literary language, in the sense of demonstrating whether readers are actually noticing the specific linguistic

features posited as being implicated in the generation of literary meaning, such as those associated with foregrounding effects, or with stylistic novelty or complexity. In eye-tracking experiments, as explained more fully below, the measure of noticing or attention is the amount of time that the reader's eye lingers on some words or phrases – experimental regions of interest (ROIs) – relative to others. Eye-tracking can also be used to test whether readers' responses to certain textual features are affected by prior, extra-textual prompts. These may include contextual information about the words in front of them, such as who authored them. It is this latter facility that we exploit in the study reported here. Our aim was to determine whether assigning interpretative significance to given textual features is dependent on a framework of understanding brought to (rather than derived from) the text, when that framework involves information about how a text was authored.

There is much anecdotal evidence, including the enduring popularity of literary biography and the significance given to author publicity materials (such as photographs and interviews) in the marketing of literary fiction, to suggest that the concept of an author's creative intentions remains an important element in most readers' appreciation of literary works. Yet little empirical research has been undertaken to investigate whether and how the proliferation of information about 'real' biographical agents, and their creative intentions towards their texts, is deployed in literary reading. An important exception, discussed by Guy et al. (2018), is that of Claassen (2012), whose study of author representations in literary reading is different to that undertaken here. Because Claassen focused on an issue that does not pertain to all literary reading (how readers perceive the moral content of a story), and on atypical texts (those which had proved highly provocative, and about which there had been significant publicity), her findings are not easily generalisable to the question we address here: the nature of the relationship between textual and cultural factors in readers' construction of an author's creative intentions.

Testing the impact of the many and diverse kinds of information about authors and authorship on literary reading is clearly a challenging task. Our study focuses on just one kind of evidence commonly held to exhibit an author's creative intentions: the textual variations to be found in the processes of re-writing and revision which are recorded by text editors (for further discussion of the controversies surrounding the recording of these variants and their creative significance, see Guy et al., 2016). These variants are a useful resource for such enquiry both because they are authentic, meaning they are not the result of artificial manipulation. And because they typically involve small-scale changes to single textual features, such as a lexical item, or a change in punctuation, and this feature makes it easier, under experimental conditions, to isolate the effect of a prior input on the attention readers pay to them. (For a discussion of the limitations of psycholinguistic enquiry, in these respects, see Conklin and Guy, 2019; Conklin et al., 2018).

In the current study, we used eye-tracking to determine whether the attention readers paid to changes made to small-scale textual variants was influenced by prior information about the kind of creative agency behind them. The technology allows for natural reading – or natural reading from a computer screen – providing a rich moment-to-moment record of eye movements for actual readers. Eye-tracking assumes an 'eye-mind equivalence', whereby what is being fixated is thought to be what is being processed at any given time (Pickering et al., 2004), meaning that the amount of time that the eyes spend looking at a word or section of text indicates how much cognitive effort is being expended

to process the input. More precisely, eye-tracking technology tells us where people's eyes land (*fixation*), how many times they land in that position or region (*fixation count*), and how long each fixation lasts (*fixation duration*), as well as movements back to previously read sections of text (*regressions*). Longer and/or greater fixations, as well as longer and/or more regressions, provide an indication of greater processing effort or attention.

Ascribing 'value' to a textual variant necessitates readers looking at examples of the 'choices' that were made – be they by an author freely exercising his/her creative decisions, or by an editor or publisher, or perhaps by a typesetter or printer – alongside each other. If a variant is interpretively significant, readers' conscious and/or unconscious behaviour should reflect this. In the current study, we used eye-tracking to examine the effect of three different prompts on two sorts of textual changes (lexical and punctuation): (1) a prompt informing readers that they were looking for potential textual changes that had been brought about by a canonical, named literary author (in this case, Henry James or Oscar Wilde); (2) a prompt attributing potential changes to an editor, an agent not usually thought of as authorially creative in the same sense; or (3) a prompt indicating that potential changes were the result of an 'accident', such as a typographical error. When readers are presented with two extracts that are identical except for a change in one textual feature, we would expect that the second reading of the text would be read faster than the first (e.g. Hyönä and Niemi, 1990; Levy et al., 1992). The key question is how a textual variant is read when it has a different attribution. We hypothesised that if a concept of an author's creative intentions was strongly implicated in literary reading, and that if it derived – at least in part – from information brought *to* the text, there would be a differential between the amount of attention paid to the ROIs (where the textual change was located) depending on the prior prompt. We also anticipated that the kind of prompt would have a differential effect on readers' accuracy reporting lexical versus punctuation changes, with information about authorial agency leading them to expend more effort, and achieve greater accuracy, in the reporting of the latter changes. Notably, if a particular attribution leads to more and longer fixation and/or greater accuracy in detecting variants, it is important to note that this does *not* establish how the change is interpreted, nor whether and how it may be judged as 'artistic'. Alternatively, if a reader's concept of an author's creative intentions, as some literary stylisticians have assumed, is largely text-centred, there should be no (or only a very minimal) difference between attention to the ROIs for the three different prompts; with the prompt also making no difference to the amount of attention readers pay to ROIs involving lexical rather than punctuation changes.

As touched on above, eye-movement and reporting behaviour only provides evidence for the presence or absence of an interpretative act. Our assumptions about interpreting this behaviour derive from an eye-tracking study that presented readers with texts in which some words were replaced by semantically similar ones which were either in linguistic focus or not in the sentence; in other words, the change was either foregrounded by the preceding context or not (Ward and Sturt, 2007). Readers had more fixations and longer reading times for changed words when they were in focus, but not when they were out of focus. Because focus indicates the information that is the most important or prominent in a sentence (Halliday, 1967), one might argue that the findings by Ward and Sturt demonstrate that greater attention is paid to what are interpretively significant changes in a text.

Also important for the current study is previous research on how readers process punctuation (Hill and Murray, 2000; Hirotani et al., 2006). While most studies compared reading in sentences with no punctuation to those that were punctuated, two eye-tracking studies investigated the impact of changes in sentence internal punctuation to already well punctuated sentences, by presenting readers with extracts from the 1846 and 1867 editions of Charles Dickens's *Oliver Twist* and from the 1881 and 1908 editions of Henry James's *The Portrait of a Lady* (Carrol et al., 2015; Parente et al., 2019). In these two studies, readers encountered pairs of sentences that differed in some way between the two editions in terms of lexis and/or punctuation. Carrol et al. (2015), in sentences that had one or two changes, showed an increase in reading times to the ROI containing the change relative to the rest of the sentence that remained unchanged. There was no evidence in the reading record to suggest that changes to punctuation were less noticeable than changes to lexical items. However, changes in lexis triggered more re-reading of the whole sentence, whereas changes to punctuation did not, indicating that readers may implicitly ascribe more 'semantic load' to lexical changes, which causes them to reconsider the sentence as well as the change itself. This was not the case for punctuation changes, which may suggest that such features are deemed minor variations with limited interpretative significance. Parente et al. (2019), using pairs of sentences that only had one change, investigated the influence of reader expertise and whether performance was influenced by a task-specific 'spot-the-difference' effect. They found ROIs with punctuation changes required greater processing effort, demonstrating that identifying changes in punctuation is more effortful, which aligns with the participants' difficulty with consciously identifying changes in punctuation. They also found that expertise played little role in readers' greater sensitivity to lexical rather than punctuation changes and that the advantage for identifying lexical changes persisted when the time interval between exposures was increased. This evidence confirmed earlier findings that small-scale features – like changes to punctuation – may not possess the creative significance predicated of them by critics and text editors. The current study explores whether this is the case when readers are alerted to the source of the variant: whether that source is the author, the editor, or the change is due to a typographical error.

2. The study

2.1. Methods

2.1.1. Participants. Thirty-six participants from a UK university were paid for their participation. One was excluded from the data set due to poor data quality (i.e. too much track loss). Participants were undergraduate and postgraduate students from various departments (aged between 18 and 45, M = 24.63, SEM = 0.97).

2.1.2. Materials. We selected 60 pairs of sentences from two versions (the 1890 periodical text and 1891 book-text) of Oscar Wilde's *The Picture of Dorian Gray* (variants are printed in Bristow, 2005) and 60 from two editions (the 1881 Macmillan first book-text and the 1908 Scribner's New York Edition text) of Henry James's *The Portrait of a Lady* (select variants are printed in James, 2011), yielding a total of 240 experimental variants.

These were classified as substantive (i.e. involving lexical substitutions) and accidental (i.e. involving punctuation and capitalisation changes). An item initially erroneously classified as accidental was later re-classified as substantive, leading to the slight imbalance in the conditions reported in Table 1. A further 30 pairs of sentences were used as fillers, which contained no changes between the two sentences. The order of presentation of the items was randomised for each participant.

For the purposes of data analysis, sentences were divided into three ROIs as in previous studies (Carrol et al., 2015). A critical ROI was defined as the word or words that had changed between two versions. In the case of changes to punctuation, the punctuation mark plus the words immediately before and after it were the ROI. The non-critical ROI was defined as the portion of sentence in which no change had occurred, before and after the critical ROI. Additionally, the sentence as a whole was treated as a third ROI (Figure 1).

2.1.3. Apparatus and procedure. Eye movements were recorded with a desktop-mounted EyeLink 1000+ system from SR Research (SR Research Ltd) sampling at 1000 Hz. Stimuli were presented on a flat screen at a resolution of 1920 × 1080. Participants were seated approximately 60 cm from the screen, and their head was stabilised using a chin and forehead rest. Before beginning the experiment, the nature of the task was explained to participants; they were instructed to read each sentence for comprehension, at their own pace as naturally as possible. They were informed that the passages were taken from late-19th- and early-20th-century works of fiction, and both Henry James and Oscar Wilde

Table 1. Breakdown of the number of item pairs by variant type and attribution.

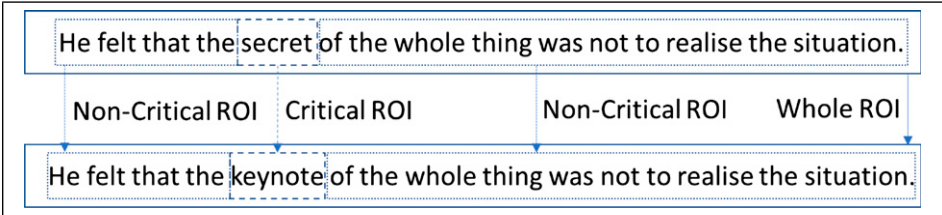| Item type	Attribution		
	Authorial	Publisher	Typographic
Substantive	20	20	21
Accidental	20	20	19
Filler	10	10	10

Figure 1. Example of the ROIs as defined for a substantive variant: critical ROI, region where the change occurred delimited by a dashed line; non-critical ROIs, regions before and after the critical ROI delimited by dotted lines; and whole ROI, region encompassing the entire sentence delimited by a solid line. ROIs: regions of interest.

were mentioned explicitly in the information sheet as possible authors; however, the authorship of each individual passage was not provided during the experiment.

The participants were told that the first sentence in a pair would be followed by one of three images, each denoting a different attribution (Authorial, Editorial/Publisher and Typographic) for the change that, *if* present, would appear in the second sentence. Except for the intervening image, the two sentences in each pair were presented back to back. After reading the second sentence in each pair, participants were asked whether they had detected a change and, if so, to provide as much detail as possible about it. Participants typed in their responses and no character or time limit was imposed. At the start of the experiment, a standard 9-point calibration and validation was performed, which was repeated as required throughout the experiment.

2.2. Results

2.2.1. Eye movements. Total reading times were computed for the ROIs. Total reading times (the sum of all fixation durations during a trial) on each ROI were then divided by the number of characters in the ROI to account for differences in length. This adjusted reading time measure was then entered as a dependent variable in a linear mixed-effect model in R (v3.6.1; R Core Team, 2017), using the lme4 package (v1.1-21; Bates et al., 2015). The model included as fixed effects the main effects of and interactions between presentation (1st vs 2nd, with 1st coded as baseline), variant type (Accidental vs Substantive), ROI (Whole vs Critical vs Non-Critical, with Whole coded as baseline) and attribution (Authorial, Publisher and Typographic, with Authorial coded as baseline). The random effect structure included random intercepts for items and participants (model comparisons revealed that the addition of random slopes did not improve model fit). Significant effects and interactions from this model are reported in Table 2.

These results showed that participants read the second sentence in a pair faster than the first one, but that the critical ROI of substantive variants was read more slowly than the rest of the sentence and more slowly than the critical ROI of accidental variants. Furthermore,

Table 2. Significant main effects and interactions. Due to non-normality of residuals, the 95% confidence intervals were produced by fitting the model 100 times to random samples of the data via bootstrapping.

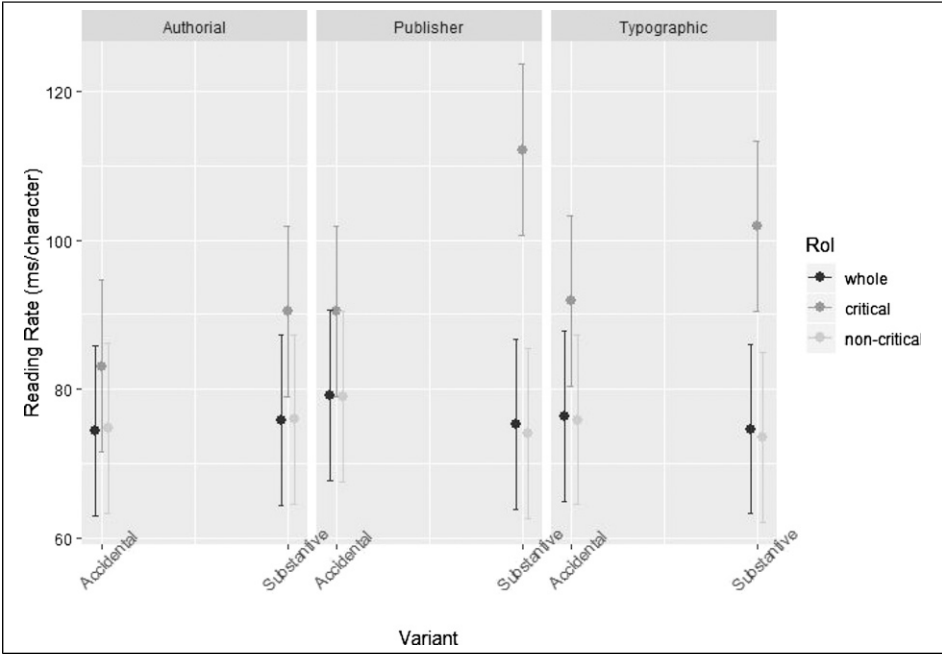|	Adjusted reading time		
Predictor	β	95% CI	p
(Intercept)	74.50	61.43–86.98	<0.001
PRESENTATION 2	−22.37	−28.19−−13.87	<0.001
Critical	8.61	1.33–15.08	0.017
PRESENTATION2:ROICritical	50.40	39.04–60.61	<0.001
PRESENTATION2:VARIANTSubstantive:ROICritical	26.66	12.97–41.56	<0.001
VARIANTSubstantive: ROICritical: ATTRIBUTIONPublisher	19.42	6.39–34.30	0.007

ROI: region of interest.

Figure 2. Adjusted reading time by regions of interest, variant type and attribution, showing longer reading times on critical regions for substantive changes compared to accidental changes, especially for changes attributed to the publishers/editors.

reading time on the critical ROI of substantive variants was longer when the change was attributed to the publisher/editor compared to the authors themselves, but such a difference was not found for typographic attributions (Figure 2).

2.2.2. Responses: Identifying changes. To determine whether the type of variant or the attribution had an effect on the relationship between reading pattern and accuracy in reporting the changes, we computed the adjusted reading time difference between the 2nd and 1st presentation of each sentence in a pair (2nd – 1st, so that positive values denoted a longer reading time during the second presentation) for critical and non-critical ROIs. The descriptive statistics for this measure can be found in Table 3. This was then included as a fixed effect together with variant type, ROI, and attribution in a model fitted to the response data. Responses were coded as follows: 0 = no difference reported (e.g. an answer of 'no' or equivalent, or no response); 1 = a difference was reported but with no or minimal detail provided (differences that were incorrectly identified were also included in this category on the grounds that something must have been noticed for the participant to consider reporting anything); 2 = a difference was reported and the type was indicated, but no specific detail was provided (e.g. an answer of 'punctuation' or 'words were changed' but without specifying what) and 3 = a difference was specifically and correctly identified. Table 4 contains the frequencies of coded responses by variant type.

Table 3. Mean adjusted reading time difference (ms/character) by variant type and attribution. Positive values indicate a longer reading time during the second presentation of a sentence. Standard error in parentheses.

		Attribution		
		Authorial	Publisher	Typographic
Accidental	Critical	26.4 (4.58)	29.1 (4.52)	40.3 (5.10)
	Non-critical	−28.9 (1.39)	−29.2 (1.65)	−25.0 (1.60)
Substantive	Critical	49.3 (5.71)	71.2 (6.76)	49.9 (6.64)
	Non-critical	−29.1 (1.41)	−27.4 (1.46)	−30.5 (1.31)

Table 4. Relative distribution of coded responses split between punctuation and lexical variants, as well as by attribution. Percentages are relative to the total number of available responses per type.

	Accidental			Substantive		
	Authorial	Publisher	Typographic	Authorial	Publisher	Typographic
Score	$n = 700$	$n = 700$	$n = 665$	$n = 700$	$n = 700$	$n = 735$
0	292 (41.71%)	291 (41.57%)	226 (33.98%)	306 (43.71%)	209 (29.85%)	376 (51.15%)
1	78 (11.14%)	96 (13.71%)	82 (12.33%)	78 (11.14%)	93 (13.28%)	96 (13.06%)
2	92 (13.14%)	74 (10.57%)	67 (10.07%)	44 (6.28%)	42 (6.00%)	33 (4.48%)
3	238 (34.00%)	239 (34.14%)	290 (43.60%)	272 (38.85%)	353 (50.42%)	230 (31.29%)

The analysis revealed a significant four-way interaction between all the fixed effects ($\beta = -0.005$, $t(12422) = -2.52$ and $p = 0.01$). In order to simplify the analysis, we divided the data set between critical and non-critical ROIs and fitted the model once more without ROI as a factor. This revealed a significant three-way interaction only for the non-critical ROI data ($\beta = -0.004$, $t(4083) = 2.02$ and $p = 0.04$), as shown in Figure 3, suggesting that the correct reporting of substantive changes with publisher attribution was less dependent on a decrease in reading time on non-critical regions.

This is consistent with the better change-reporting performance in these types of trials (Table 4); to better investigate this apparent advantage for publisher attributions, we further analysed participants' change detection accuracy for any effect of passage authorship and attribution. While the authorship of each sentence was not given in the experiment, mentions of known characters in several of them may have tipped off participants to their provenance. Indeed, this analysis (Table 5) revealed that participants were better able to detect substantive changes when these were explicitly attributed to the publishers and when the passages were drawn from Oscar Wilde's novel (Figure 4), even though the authorship of each passage was not explicitly provided. However, post hoc comparisons (performed using the multcomp package, v1.4-10; Hothorn et al., 2008) on the three-way interaction did not yield significant differences after correcting for multiple comparisons.
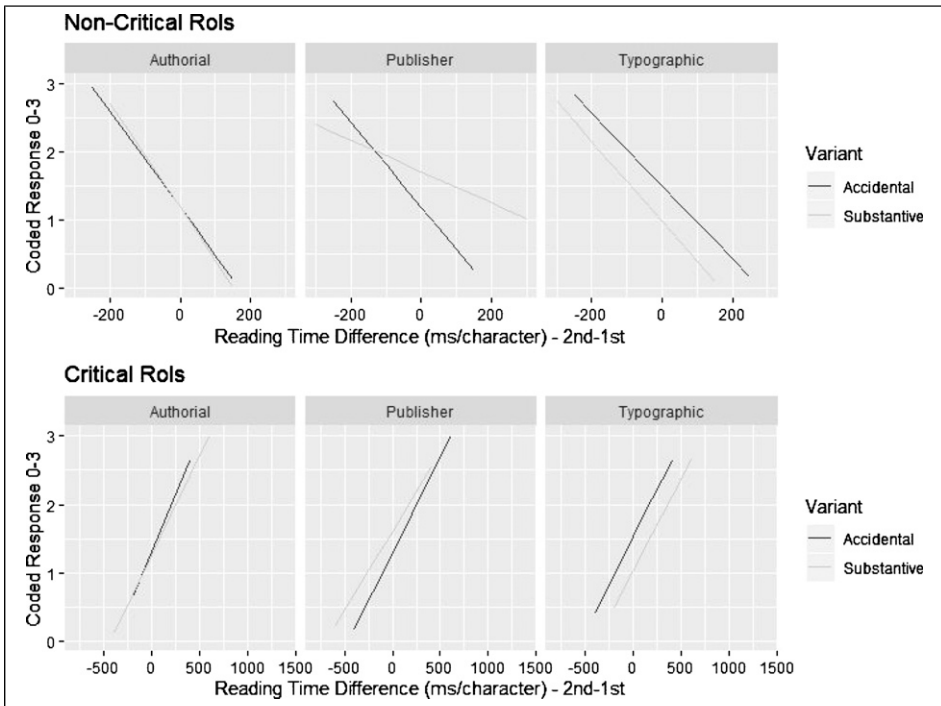
Figure 3. Three-way interaction plots between attribution, variant type and adjusted reading time difference for both critical and non-critical ROIs. Positive values of reading time difference (*x*-axis) indicate a longer reading time during the second presentation of a variant compared to the first. The interaction indicates that a longer reading time on the critical ROI during the second presentation was associated with higher change reporting accuracy for both substantive and accidental variants. Conversely, a longer reading time on the non-critical ROIs during the second presentation was associated with lower change report accuracy for both variant types. However, the amount of time spent inspecting non-critical ROIs during the second presentation had a less marked effect on response accuracy for substantive compared to accidental variants when these were attributed to the publishers. ROIs: regions of interest.

3. Discussion

Across a set of studies similar to the current ones, we see that when reading variants of a text encompassing changes to either punctuation or lexis, there was an increase in reading times to the ROI containing the change relative to the rest of the sentence that remained unchanged (Carrol et al., 2015; Parente et al., 2019). There was no evidence in the reading record to suggest that changes to punctuation were less noticeable than changes to lexical items or word order; in fact the results in Parente et al. indicated that ROIs with punctuation changes require greater processing effort, demonstrating that identifying small changes in punctuation is more effortful, which aligns with the participants' difficulty with consciously identifying changes in punctuation, with punctuation changes being identified significantly less accurately. Importantly, the findings from

Table 5. Significant main effects and interactions influencing change detection performance.

Predictors	Change detection (0–3)		
	Estimates	CI	p
(Intercept)	1.10	0.70–1.50	**<0.001**
Substantive	0.22	−0.30–0.75	0.406
Wilde	0.59	0.06–1.11	**0.030**
Publisher	0.39	−0.13–0.92	0.146
Typographic	0.35	−0.19–0.89	0.208
VARIANTSubstantive:AUTHORWilde	−0.43	−1.17–0.31	0.259
VARIANTSubstantive:ATTRIBUTIONPublisher	−0.27	−1.01–0.47	0.469
VARIANTSubstantive:ATTRIBUTIONTypographic	−0.75	−1.49––0.01	**0.050**
AUTHORWilde:ATTRIBUTIONPublisher	−0.83	−1.57–−0.09	**0.031**
AUTHORWilde:ATTRIBUTIONTypographic	−0.24	−0.99–0.51	0.539
VARIANTSubstantive:AUTHORWilde: ATTRIBUTIONPublisher	1.34	0.29–2.38	**0.014**
VARIANTSubstantive:AUTHORWilde: ATTRIBUTIONTypographic	0.58	−0.47–1.63	0.281

across the studies show that all readers, even non-expert ones, pay a certain amount of attention to minor textual features such as the presence or absence of a comma, or the change from a semicolon to a colon. Interestingly, in Carrol et al. where some sentences had more than one change, changes in lexis triggered more re-reading of the whole sentence, whereas changes to punctuation did not. This indicates that readers may implicitly ascribe more 'semantic load' to lexical changes, which causes them to reconsider the sentence as well as the change itself.

In the present study, we considered whether providing readers with information about the supposed origin of a variant would alter their reading behaviour and their ability to detect changes. Our hypothesis was that if extra-textual information about an author's creative agency was implicated in literary reading, providing such information would have an effect; and that the greatest effect would be observed in cases where the concept of creative agency was strongest – that is when a change was attributed to a known creative agent, such as a canonical author. However, the results were not in line with our original hypothesis, in that they showed that participants spent significantly *less* time overall fixating the critical regions of variants when they were told they were authorial, and more when they were told the change had been made by the publishers/editors or appeared in the text as a result of a typographical error. This was the opposite of what we had expected. Publisher attribution was related to a particularly marked increase in reading time on the critical region of substantive, lexical changes. However, neither the attribution of a change nor its nature appeared to significantly affect participants' ability to correctly report it. These findings run contrary to our most recent observations (Parente et al., 2019), while being more consistent with the original findings by Carrol et al. (2015). It is possible that the mere act of providing readers with an ostensible origin for a variant may change their attitude towards the task itself; this, coupled with the back-to-back presentation of each
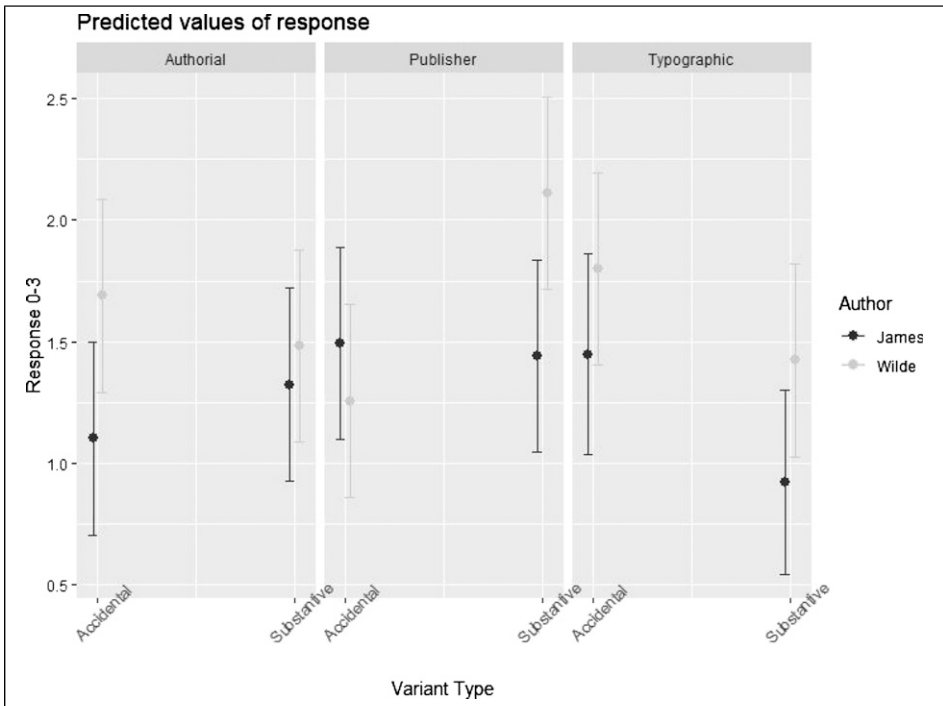
Figure 4. Plot of the model predicted values for change detection score (0–3, *y* axis) by variant type, attribution and authorship. This analysis revealed an apparent advantage for variants drawn from Oscar Wilde's novel, but especially so for publisher-attributed substantive changes. However, these differences were not significant after correcting for multiple comparisons.

pair of sentences, could have led to more engaged and attentive reading and to less discrimination between substantive and minor variants. However, the specific differences in attention allocation between authorial, editorial and typographical variants are more difficult to explain.

It is possible that changes attributed to authors may be questioned less by readers because this information about creative agency is in line with their expectations about how literary texts are produced. As an element of what might be termed a 'default' interpretative strategy, perhaps such information does not trigger a need for additional attention. By contrast, being informed that a change comes about through a publisher's hand may be novel, conflicting with readers' assumptions about the creation of literary texts and the presumed creative control of an author. Greater curiosity about a variant brought about by an agent other than an author may be the trigger of greater attention. Alternatively, that attention might equally be due to readers' perceptions that non-authorial variants are coercive or less legitimate than authorial ones, with editors perhaps being assumed to be less creative agents, and their interventions therefore requiring more scrutiny as to their significance. Such an explanation would explain why, after they have been detected, there is more re-reading of non-critical regions as well. By the same

token, the relatively lesser time spent reviewing texts where the changes were typo-graphical, as opposed to editorial, may be due to the judgement that, because these changes are the result of accident, they have little creative significance. Or it may be that unlike editorial changes, the concept of a typographical change is more familiar to readers, because it is something they encounter in their own writing.

Most modern readers are strongly influenced, often subconsciously so, by Romantic ideas about creativity, in which creative agency is associated with a single individual. Lack of knowledge of the processes involved in transforming what (for most of the 19th century) was invariably a hand-written article into a printed text intended for public consumption probably leads to a lack of awareness of the many opportunities for other agents to introduce changes to an author's text, whether deliberately or not. It needs to be stressed that these explanations for the differences we found in attention allocation are speculative, based on hypotheses about the cultures which the participants brought to the texts. To gain a clearer insight into our findings we would need to repeat the study, but this time requiring participants to complete a questionnaire designed to ascertain their prior knowledge of nineteenth-century print culture. The complex processes and agents in-volved in textual transmission are not necessarily well-appreciated by undergraduates and postgraduates even though they specialise in studying literary texts. This is because courses or modules in historical publishing practices and text-editing are typically specialist options, rather than a required element of the curriculum. Having established participants who did not possess such knowledge, it would then be possible to repeat the study contrasting the reactions of a group who were given information about details of nineteenth-century publishing practices with a group who were not. This might help us to ascertain whether it was simply the novelty of the input that was informing reaction times, as opposed to readers' different evaluations of the significance of editorial as opposed to authorial changes. It would also be useful to know, again through the use of ques-tionnaires, how open readers were to the idea of collaborative authorship, where editors are viewed, as some textual scholars argue (see Guy and Small, 2012), as co-creators of literary works. Readers unaccustomed to such an idea may find it difficult to accommodate the possibility of multiple creative agents, and then to mobilise such a concept in literary reading. A sense that they must choose between, or rank different agents of textual change, may also therefore be a factor in determining their attention. Finally, we also need to be aware that in our study, reactions may have been influenced by the canonical status of the writers from whose works participants were examining extracts. It is possible that readers may judge the significance of non-authorial variants differently in the case of writers famous for their style, as Wilde and James are, as compared to authors whose works they did not know, or whose modern reputations are less secure.

4. Conclusions

Overall, our study showed that readers' noticing of textual variants was sensitive to a prior prompt about its authorship, in the sense of producing an effect on attention and re-reading times. This finding suggests that in literary reading, the concept of an author's creative intentions does depend on the information readers bring to the text. However, the fact that our study did *not* show evidence that such a prompt affected a reader's ability to accurately

report a variant, leaves open the question of the precise role contextual information about authorship may play in literary interpretation. Although the nature of the prompt generated a demonstrable re-reading effect, it is not clear what this re-reading was in the service of. It is possible that the effect which our study measured was that of the novelty of the information given in the prompt; that re-reading was initiated when readers were surprised by the concept of agency implied by the prompt. Whether or not these different concepts of creative agency affected an *evaluation* of the variant detected is not something that the current study measured, although it would clearly be an important topic for further enquiry.

Other questions which this study raises concern the significance readers attach to the kinds of information they receive about authors (as opposed to editors) when engaging with literary texts. This study showed that prior information about the author of a variant did not affect noticing does not mean that authorship is therefore of no interest to readers. It is rather the opposite: it more likely indicates that the identification of creative agency with a single, named individual is so habitual, as to be part of a normative interpretive strategy. Here it is relevant that the prompt about authorship did not provide any information about the writing habits or character of the author, such as might impact judgements about the significance of a given variant. It only informed participants that a change had been undertaken by an authorial agent. It would therefore be useful to conduct further studies in which the prior prompt involved different information about the author. This might include information about writing habits: whether, like D.H. Lawrence or James Joyce, the author was a constant reviser, or, like George Gissing, who wrote quickly and often carelessly, an infrequent or light reviser. Likewise, and as noted above, it would also be useful to assess the significance of readers' general assumptions about authorship and creative agency in relation to their knowledge of nineteenth-century publication practices.

Our study provides a novel methodology for measuring readers' sensitivity to contextual information about authorship during the processing of literary texts. However, it needs to be stressed that our study examined the effect on literary reading of a very limited piece of information about authorial creativity, and under highly specific task conditions: identifying a textual change. Thus, while we have shown that such information does have a measurable effect on reading, further research is needed to determine the precise nature of the interaction between linguistic and contextual factors in the construction of a concept of authorial intention, as well as the specific kinds of information about authorship which have the most influence on the construction of an author's creative intentions. It also needs to be acknowledged that it remains a challenging task to design experiments which can measure the effects of the multiple elements that make up any individual reader's culture, and which have the potential to affect their constructions of authorial creativity, in 'real world' situations. Future researcher should also explore the possibility of embedding textual variants in longer text passages to better approximate the experience of literary reading at least with digital on-screen editions (e.g. Godfroid et al., 2018).

Open data statement

Eye-tracking and behavioural data available upon request.

Declaration of conflicting interests

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ORCID iD

Fabio Parente ⓘ https://orcid.org/0000-0003-4789-9511

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Author biographies

Kathy Conklin is a Professor in Psycholinguistics at the University of Nottingham. She is the author of many research papers using methods from psycholinguistics, in particular eye-tracking, to look at language processing in a first and second language, as well as in more applied contexts to address questions that are of significance to literary scholars. She co-authored *Eye-tracking: A Guide for Applied Linguistics Research* (Cambridge University Press, 2019).

Fabio Parente is a Postdoctoral Research Fellow in Psychology at the University of Derby. He has conducted eye-tracking research on language processing, reading behaviour and visual attention, as well as object recognition. He has also worked on measurements of text complexity.

Rebekah Scott is an Assistant Professor in 19th- and 20th-Century Literature at the University of Nottingham. She has published essays on Dickens, Wilde, Beckett, and numerous topics relating to Henry James. She is editor of a volume of tales for The Cambridge Edition of the Complete Fiction of Henry James and is currently completing a monograph on James and abstraction.

Josephine M Guy is a Professor of Modern Literature at the University of Nottingham. She has published widely on nineteenth-century literary and cultural history, on text-editing, and on literary and text-theory. She is also a member of the editorial team on the Oxford English Texts Edition of The Complete Works of Oscar Wilde. Her most recent book is the forthcoming: *Oscar Wilde: Vera; Or, the Nihilist and Lady Windermere's Fan* (2021), part of the on-going Oxford University Press edition of the Complete Works of Oscar Wilde.