Event duration and pace in fictional narrative: An experimental study

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In a modern novel, the narrative typically alternates between two pacing patterns: the narrative summary and the scene (Gingrich, 2021). A narrative summary, such as (1), is characterised by a fast progression through story time and a low level of granularity in the presentation of events. A few sentences can span hours, days, or even years in the world of the story, and each of the described events can take minutes (eat in a restaurant, have a tantrum), or hours (have the best morning), or longer.

(1) Harry had the best morning he'd had in a long time. He was careful to walk a little way apart from the Dursleys so that Dudley and Piers, who were starting to get bored with the animals by lunch-time, wouldn't fall back on their favourite hobby of hitting him. They ate in the zoo restaurant, and when Dudley had a tantrum because his knickerbocker glory wasn't big enough, Uncle Vernon bought him another one and Harry was allowed to finish the first.

A scene progresses slowly through the story time and has a high level of granularity. In roughly the same amount of text as (1), (2) covers probably about half a minute of events, and each event (Harry said "Confuse it!", Harry threw the tap, the troll stopped, etc.) only takes a few seconds. (Both examples are from J.K. Rowling's *Harry Potter and the Philosopher's Stone*.)

(2) "Confuse it!" Harry said desperately to Ron, and, seizing a tap, he threw it as hard as he could against the wall.

The troll stopped a few feet from Hermione. It lumbered around, blinking stupidly, to see what had made the noise. Its mean little eyes saw Harry. It hesitated, then made for him instead, lifting its club as it went.

"Oy, pea-brain!" yelled Ron from the other side of the chamber, and he threw a metal pipe at it.

Furthermore, according to practical guides on the craft of writing, the pace of scenes, in the sense of the number of events happening per unit of story time, can be further modulated by manipulating the length of sentences and paragraphs. For instance, Hall (2019, p. 13) advises authors to use sentences like (3-b) instead of (3-a) to create the impression of a faster pace.

(3) a. He waved his double-barrelled revolver, drawn in a hurry from wherever in the folds of his greatcoat he kept it.
b. He whipped a revolver from the folds of his greatcoat.

This paper explores the hypothesis that the effect in (3) is the result of the *iconic representation of event duration*, a less well studied manifestation of temporal iconicity in narrative than the more widely known iconic representation of event order (Jakobson, 1971). Here, the longer

reading time that (3-a) requires iconically reflects the duration of the described event, which in turn leads to the slower pace effect in a sequence of events.

I propose that temporal iconicity, in turn, is a consequence of a specific mode of narration used ubiquitously in fiction: the narrator relates the events of the story *as if* the perspectival centre—the character who has the point of view, e.g. Harry Potter in (1) and (2)—gives a *live report* of those events. It takes about 2-3 seconds to utter a short sentence. If the events are equally short and happen in a rapid succession, the perspectival centre does not have the time to add elaborate descriptions and produce longer sentences. If they nevertheless do, that serves as a signal to the reader that the event took long enough to allow that. The effect should appear primarily in scenes because of their high level of granularity and the second-by-second mode of presentation.

However, if the events take much longer to happen than the duration of utterances, e.g. eating in a restaurant in (1), then it does not matter if it is a relatively short or a relatively long event for eating-in-a-restaurant standards, the perspectival centre has enough time to describe it in as much detail as needed in either case. Therefore, we do not expect sentence length to have an effect on the perceived event duration in coarse-grained narrative summaries.

Literary studies and practical guides like Hall (2019) do not provide an answer to the question whether the faster/slower pacing effects only concern the reader's experience of faster/slower progression through the narrative or the actual semantic representation of the events in the story. Using the duration estimate task from Wittenberg and Levy (2017), I conducted an experiment to test if the greater amount of descriptive detail, which inflates sentence length and leads to longer reading times, increases the duration of reported events in the readers' mental representation.

The experiment consisted of two subexperiments—two sets of stimuli mixed together in a single session. The goal of subexperiment 1 was to test the iconic duration effect in sequences of events. Participants read 20 sentences (10 per condition) like those in (4) and answered the question *How long did that take?* by giving a number and choosing a time unit (seconds, minutes, etc.) from a dropdown menu. The sentences presented a sequence of two events, whose typical duration was in the range of a few seconds. In the short sentence condition (4-a), the subject of the second clause was a short DP (*the curtains*). In the long sentence condition (4-b), that DP was enriched with descriptive adjectival and PP attributes (*the sheer lace curtains with delicate floral patterns*).

(4) a. Olivia pulled the cord and the curtains swished open. — short sentence
b. Olivia pulled the cord and the sheer lace curtains with delicate floral patterns swished open. — long sentence

The goal of subexperiment 2 was to test whether the effect is present across the board or only in events that last a few seconds. The sentences (64, 8 per condition) presented a single event, but the typical inherent event durations were varied (instant, short, medium, and long), cf. (5). 34 additional filler sentences were presented.

(5) a. A (restless sweaty) passenger (with a bushy moustache) put his bag on the (empty) seat. — instant: 1–5 sec
b. A (cheerful curly-haired) patient (in polka-dotted pyjamas) spread (apricot) jam over her toast. — short: 5–60 sec
c. A (slender elegant) employee (with a short haircut) watered the flowers in the (deserted) lobby. — medium: 1–60 min
d. An (inconspicuous local) contractor (in a grey overall) — long: >1 hour

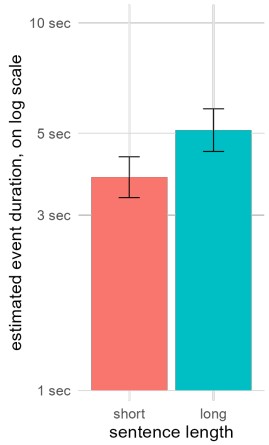

Figure 1: Results of subexperiment 1

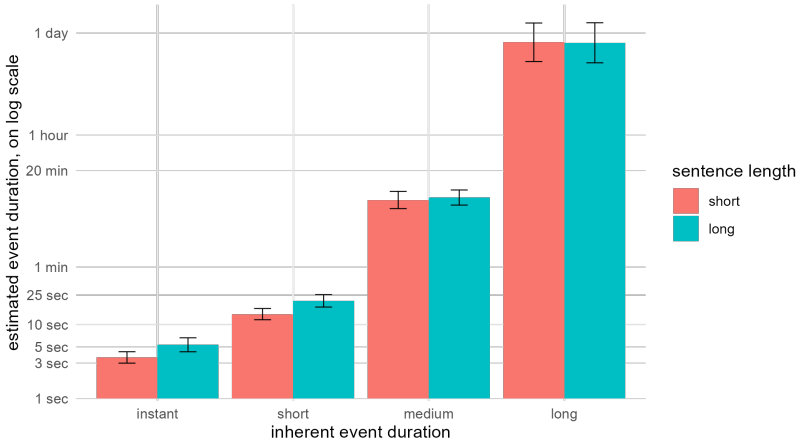

Figure 2: Results of subexperiment 2

built a fence around the (square) plot.

50 self-reported native speakers of English from the UK and Ireland (17 male, 33 female; aged 26–70) were recruited via Prolific to participate in the study. A linear mixed-effects model with random intercepts and random effects of participant and item was fitted to both data sets, using the lme4 package in R (Bates et al., 2024). Both parts of the experiment showed a significant effect of sentence length, where long sentences were associated with an increase in log-transformed event duration (subexperiment 1: $\beta = -0.295, SE = 0.079, t = -3.717, p < 0.001$; subexperiment 2: $\beta = -0.200, SE = 0.085, t = -2.350, p = 0.019$), cf. Figures 1 and 2. However, in subexperiment 2 this effect was only seen in the instant and short conditions, which presented events that typically last a few seconds.

These results suggest that the intuitions about the effect of sentence length on the perceived duration of the described event are based on a real measurable effect. Duration can be represented iconically by sentence length in narrative. Moreover, the results of part 2 of the experiment corroborate the live-report hypothesis, as the duration effect is present in the instant condition (inherent event duration 1–5 sec) and absent in the medium and long conditions (inherent event duration longer than a minute), and therefore should generally be absent in narrative summaries. Somewhat less clear is the status of the short inherent event duration condition (5–60 sec). As such, an event that inherently lasts 30 seconds is long enough to allow for a detailed description with a long sentence, so based on the live-report hypothesis one would expect events of that length to pattern with medium and long events and show no duration effect, which is not reflected by the results. More research is needed to determine the exact cut-off point where the duration effect disappears.

These new findings also raise questions about the place of temporal iconicity in natural language semantics and pragmatics. One could argue that for a literal live-reporter, the duration effect is an instance of *natural* (Grice, 1957) or *symptomatic* meaning (Sperber and Wilson, 1986), as the effect is not necessarily intended by the reporter, but is simply a consequence of the time constraints of the communicative situation. However, to the extent that writers use it deliberately to create a certain impression of the passage of time in the reader, sentence length and related utterance duration is a true iconic sign and should be treated as such in a comprehensive theory of language.

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