

Longer descriptions for longer events: Iconic representation of duration

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The interpretation of a narrative can be thought of as “vicarious experiencing” of the events in the story [4], and the interpretation of individual sentences has been shown to involve perceptual simulations of the described events, e.g. [2]. An event can be perceived and described with a lesser or greater degree of detail. It takes longer to give a more detailed description. Presumably, it also takes longer to mentally process more details in perception [1], and the duration of the event itself must be long enough to allow for that. An event that lasts several minutes, e.g. watering flowers, gives an observer ample time to create an elaborate mental picture, whereas an event that takes only a couple of seconds, e.g. putting down a bag, might not. Therefore, if the narrator nevertheless presents a long, detailed description of such a short event, the reader might infer that the event must have taken longer than usual. In other words, we expect sentence length to iconically reflect event duration for inherently short events, but not necessarily for inherently long events.

In experiment 1 participants read long and short sentences describing events whose inherent duration was in the range of 1–5 seconds, cf. (1) in table 1, 5–60 seconds (2), 1–60 minutes (4), or more than 1 hour (5). The long versions of the sentences contained additional descriptive attributes (e.g. *restless*, *sweaty*, *with a bushy moustache*) and were 6–10 words longer than the corresponding short versions (separated into lists in a Latin square design). The attributes were chosen so as not to invite inferences of longer duration due to their lexical semantics. After reading each sentence, participants were asked *How long did that take?* and could answer by typing a number and selecting a time unit from a dropdown menu (verbal duration estimation task [3]). We found a significant main effect of sentence length on log-transformed duration estimates in a linear mixed-effects model with random intercepts for participants and items, where events described by long sentences received higher duration estimates ($p = 0.02$). No significant interaction between sentence length and inherent duration was found, but pairwise comparisons revealed a 48% increase in estimated duration on the original scale for long sentences in the 1–5 sec and the 5–60 sec conditions ($p = 0.02$), vs. 1.5% and 0.2% increases ($p > 0.05$) in the 1–60 min and >1 hour conditions, respectively, cf. figure 1.

However, most items in the 5–60 sec inherent duration bin received relatively low duration estimates below 10 sec. Experiment 2 ([preregistered](#)) zoomed in on the 0–60 sec region to test whether the iconic effect of sentence length would disappear at a lower threshold. Items were assigned to inherent duration bins 0–10 sec, 10–20 sec, and 20–60 sec, based on geometric means for the short sentences in a pretest, cf. (1)–(3) in table 1. Again, long sentences received higher duration estimates ($p < 0.001$) and no significant interaction of sentence length and inherent duration was found. Pairwise comparisons showed a 28% increase for 0–10 sec events ($p < 0.001$), 12% for 10–20 sec ($p = 0.272$), and 18% for 20–60 sec ($p = 0.002$), cf. figure 2.

The results suggest that longer, more detailed descriptions are interpreted as representing longer events. This effect is not limited to events of 1–5 sec ($\approx$ duration of an utterance), but persists for the entire range up to 1 minute. This challenges the hypothesis that utterance length of the description is directly limited by the duration of the event (or its perceptual simulation). It remains to be determined whether the effect is truly absent or just harder to measure reliably for events longer than 1 minute.

	exp. 1	exp. 2	example item
(1)	1–5 sec	0–10 sec	A (restless sweaty) passenger (with a bushy moustache) put his bag on the (empty) seat.
(2)	5–60 sec	10–20 sec	A (cheerful curly-haired) patient (in polka-dotted pyjamas) spread (apricot) jam over her toast.
(3)		20–60 sec	The (busy) nanny sliced a (Braeburn) apple (from the orchard) on the (carved wooden) cutting board.
(4)	1–60 min		A (slender elegant) employee (with a short haircut) watered the flowers in the (deserted) lobby.
(5)	>1 hour		An (inconspicuous local) contractor (in a grey overall) built a fence around the (square) plot.

Table 1: Example items in experiments 1 and 2. The greyed out words in parentheses were part of the sentence in the long sentence condition, but were absent in the short sentence condition.

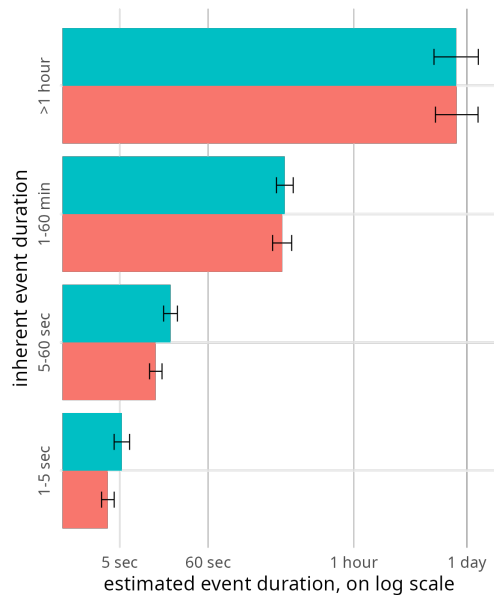


Figure 1: Experiment 1: 8 items per condition, 1600 observations from 50 participants

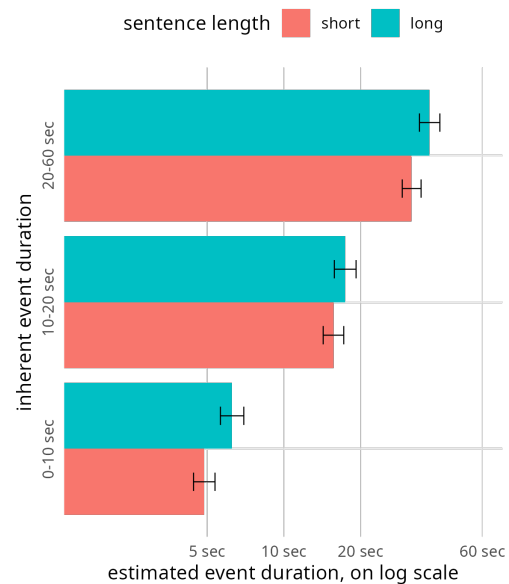


Figure 2: Experiment 2: 10 items per condition, 2672 observations from 90 participants

References

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