

MPL-36

TO: Multics Performance Log
FROM: A. Sekino
SUBJECT: Results of Daily Multics Performance Measurements
(Period: September 8 through September 12) and
Result of CPU Quantum Experiment.
DATE: September , 1969

The results of daily Multics performance measurements of the period, September 8 through September 12, are given below. It includes the result of CPU quantum experiment.

Though many runs were not made successfully on account of the system crashes in the afternoons, the following three runs were made in three different system situations.

Date	Run No.	No. of Users	System	No. of temp-wired pages	Length of CPU quantum
9/8	MPM39	21	3.9	22*	8 seconds
9/11	MPM40	21	3.9	38	4
9/12	MPM41	23	3.10T	39	6

The corresponding performance statistics** observed by the PDP-8 User Simulator are given below and in Figures 1, 2, and 3.

Run No.	Total CPU time	Total No. of P.F.	Total real time	Average CPU time	Average no. of P.F.	Note
MPM39	67.211	3506	3090	1.018	53	whole script
	39.907	1922	1650	1.21	58	first half of the script
	28.304	1584	1440	.858	48	second half
MPM40	55.018	2938	2670	1.67	89	first half
MPM41	80.770	4222	3450	1.223	63	whole script
	50.235	2606	2010	1.52	78	first half
	30.535	1616	1440	.925	49	second half

*(See page 2)

** (See page 2)

*Newly temp-wired segments were temporarily unwired in MPM39, while these segments were kept wired in other two runs. However, because the effect of this difference is considered to be somewhat smaller than the effect of different quantum length, the performance results roughly represent the effect of different quantum length. For example, it appears that the additional 16K wiring of segments in MPM39 increased the total CPU time of Figure 1 by 1.4 to 6.2 seconds, increased the average number of page faults of Figure 2 by 2 to 7, and decreased the total real time of Figure 3 by 120 to 240 seconds, as shown by dotted lines.

**The new "fortran" command runs fast even at the first execution. Instead, "rename" runs slowly now.

AS/bm

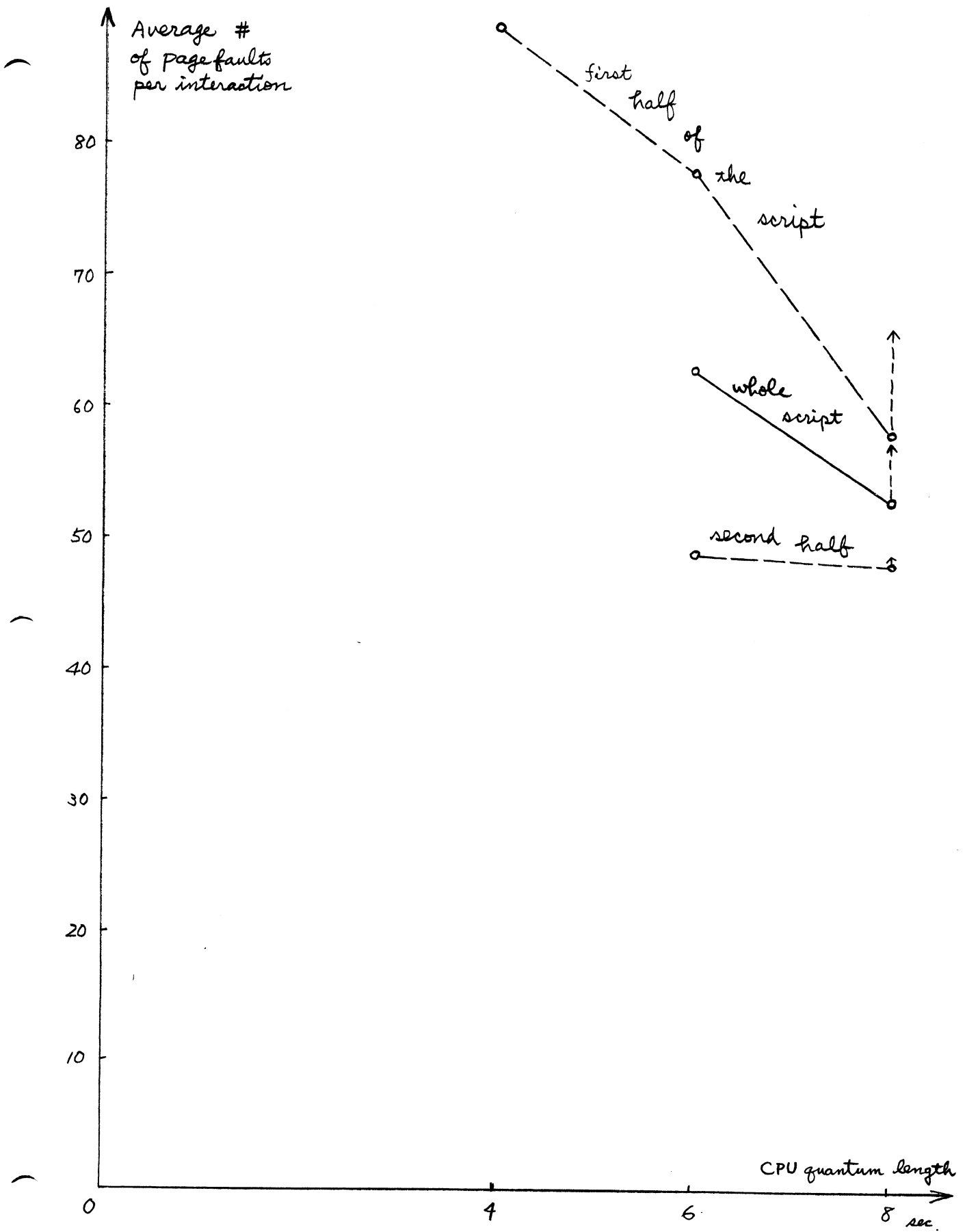


Fig. 2 Effect of the CPU quantum length on Average # of page faults

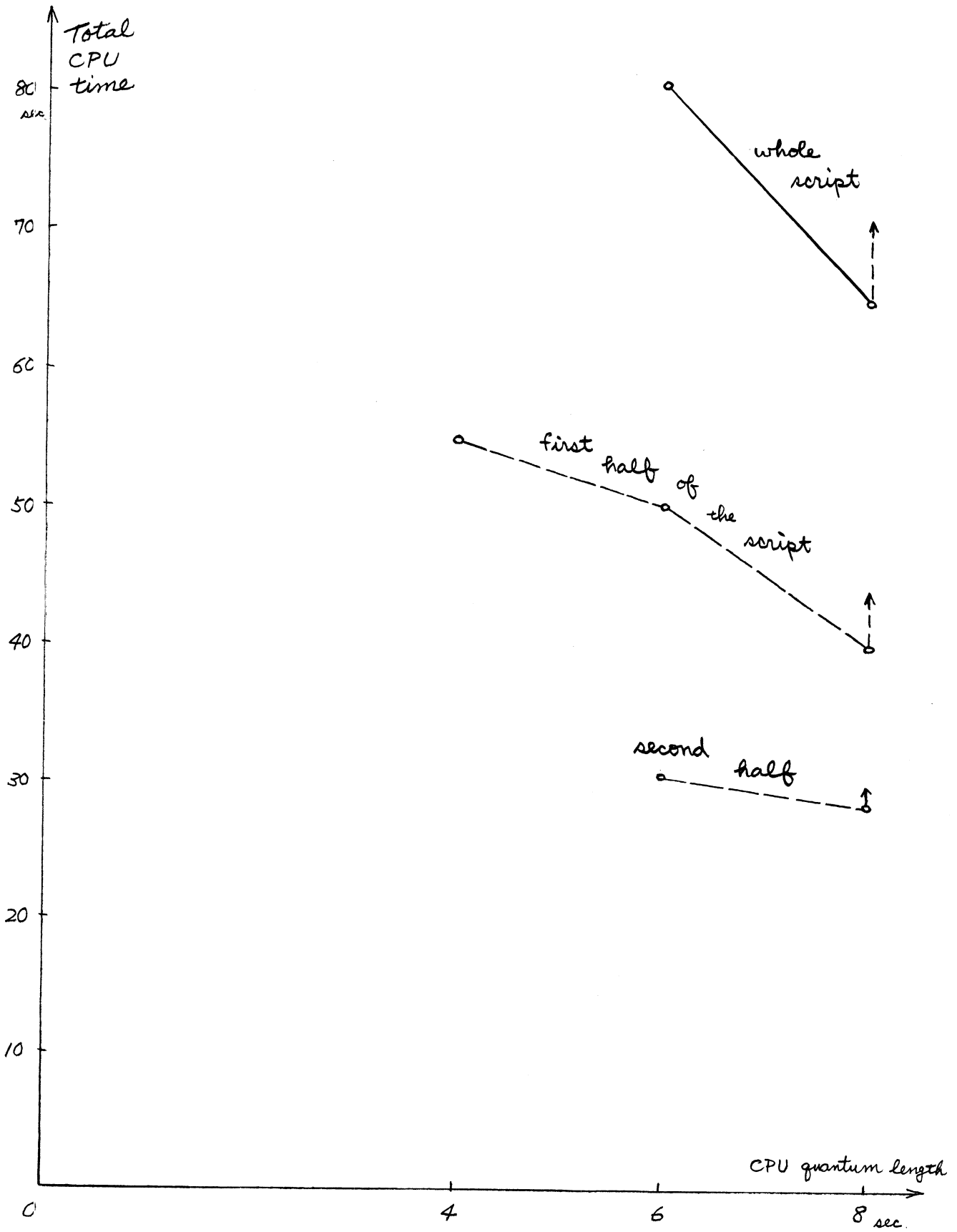


Fig. 1 Effect of the CPU quantum length on the total CPU time

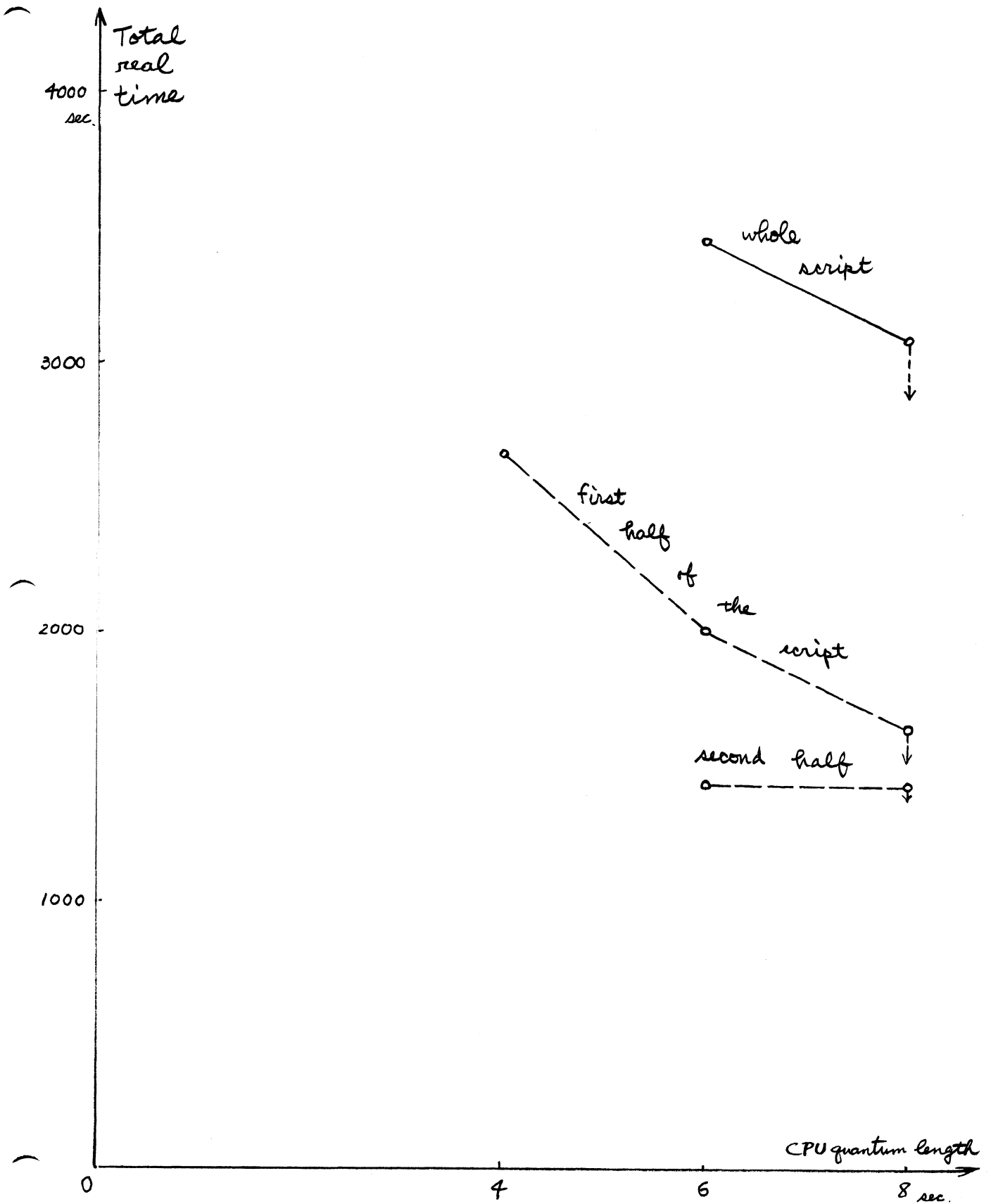


Fig. 3 Effect of the CPU quantum length on Total real time