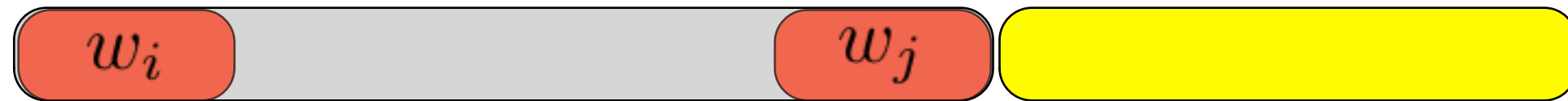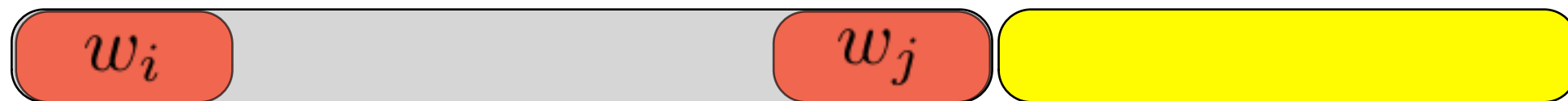# Typesetting

It was the best of times, it was the_____
worst of times, it was the age of wisdom,_
it was the age of foolishness, it was the_
epoch of belief, it was the epoch of_____
incredulity, it was the season of Light,__
it was the season of Darkness, it was the_
spring of hope, it was the winter of_____
despair, we had everything before us, we__
had nothing before us, we were all going__
direct to heaven, we were all going direct
the other way - in short, the period was
so far like the present period, that some
of its noisiest authorities insisted on
its being received, for good or for evil,
in the superlative degree of comparison
only.

WHAT ABOUT $S_{i,j}$

$S_{i,j}$

slack when line
starts with w_i
and ends w_j

WHAT ABOUT $S_{i,j}$

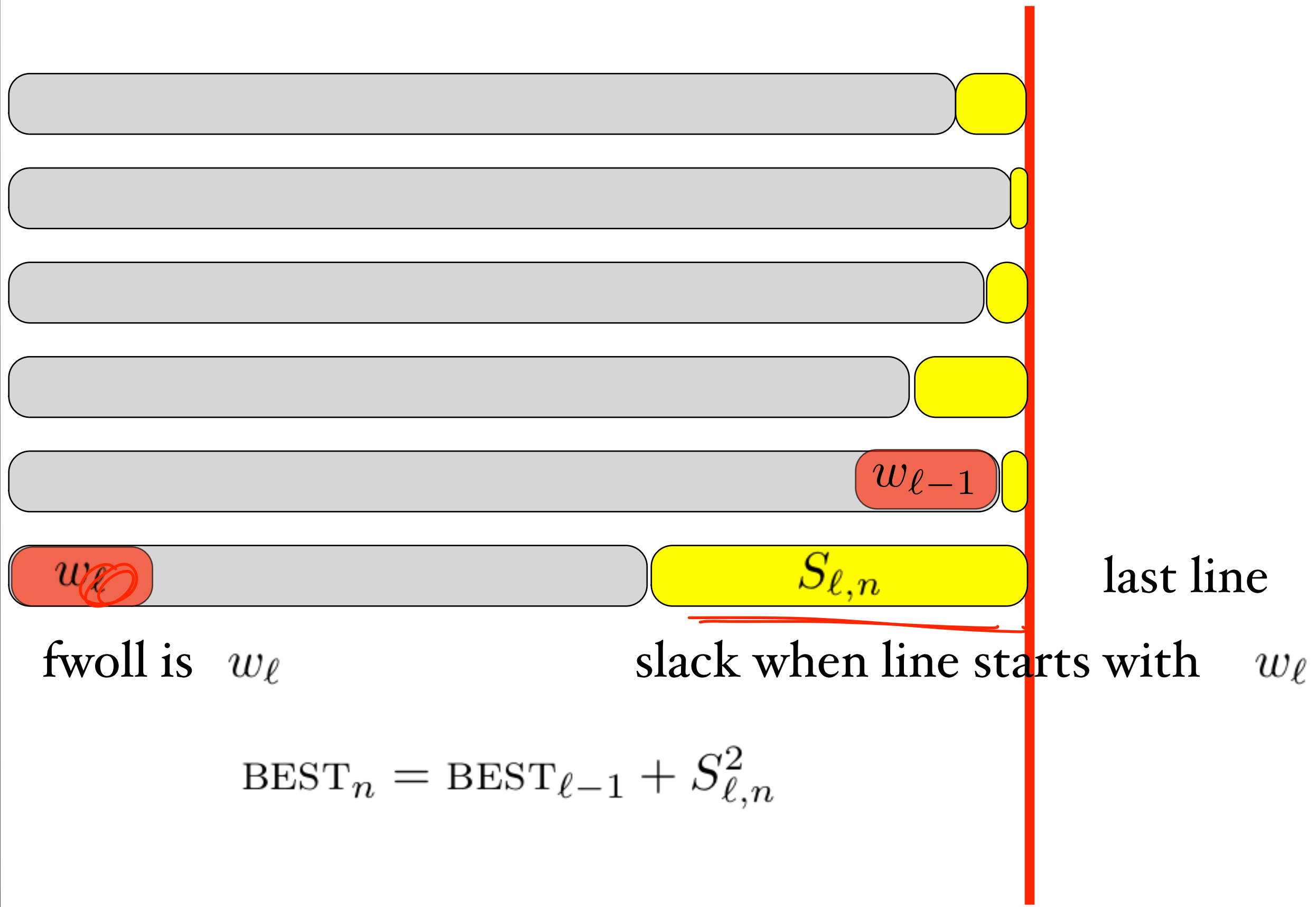$$S_{i,j}$$

slack when line
starts with w_i
and ends w_j

$$S_{i,j} = \begin{cases} M - c_i & j = i \\ S_{i,j-1} - c_j - 1 & i < j \end{cases}$$

∞ if $S_{i,j} < 0$

IMAGINE OPTIMAL SOLUTION

last line

fwoll is w_ℓ slack when line starts with w_ℓ

$$\text{BEST}_n = \text{BEST}_{\ell-1} + S_{\ell,n}^2$$

WHICH WORD IS FWOLL?

$$\mathrm{BEST}_n = \min \begin{cases} \mathrm{BEST}_0 + S_{1,n}^2 \\ \mathrm{BEST}_1 + S_{2,n}^2 \\ \mathrm{BEST}_2 + S_{3,n}^2 \\ \quad ... \\ \mathrm{BEST}_{\ell-1} + S_{\ell,n}^2 \\ \\ \quad ... \\ \mathrm{BEST}_{n-1} + S_{n,n}^2 \end{cases}$$

TYPESETTING ALGORITHM

1 make table $S_{i,j} = \begin{cases} M - c_i & j = i \\ S_{i,j-1} - c_j - 1 & i < j \end{cases}$

$\quad\quad \infty$ if $S_{i,j} < 0$

2 compute $\text{BEST}_0, \text{BEST}_1, \ldots, \text{BEST}_n$

using

$\text{BEST}_0 = 0$

$\text{BEST}_n = \min \begin{cases} \text{BEST}_0 + S^2_{1,n} \\ \text{BEST}_1 + S^2_{2,n} \\ \ldots \\ \text{BEST}_{n-1} + S^2_{n,n} \end{cases}$

3 keep track of choices & backtrack
to determine line breaks