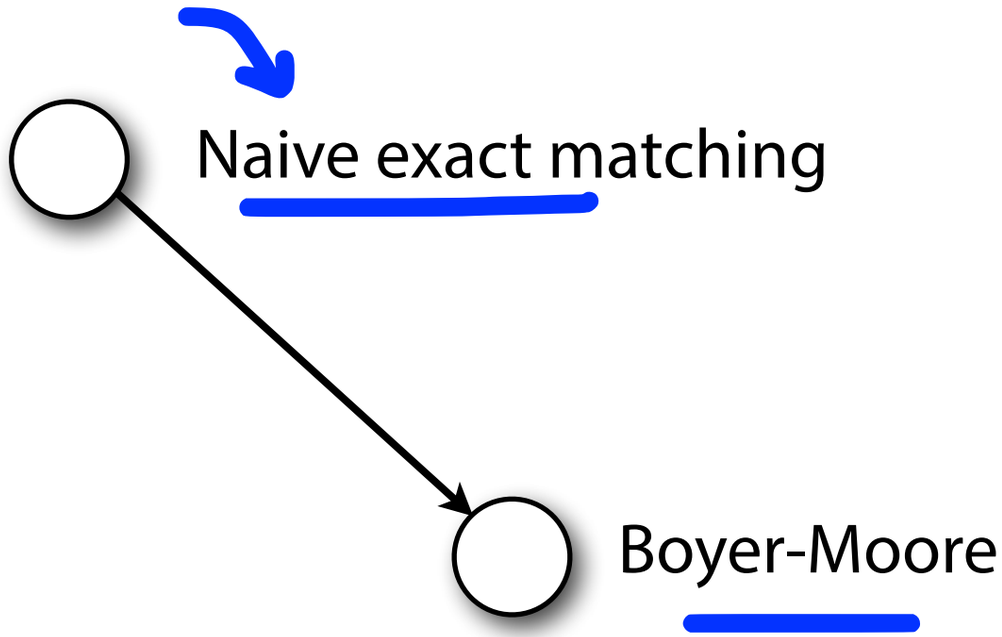
Boyer-Moore



Exact matching: better naïve algorithm

P: word
T: There would have been a time for such a word
word

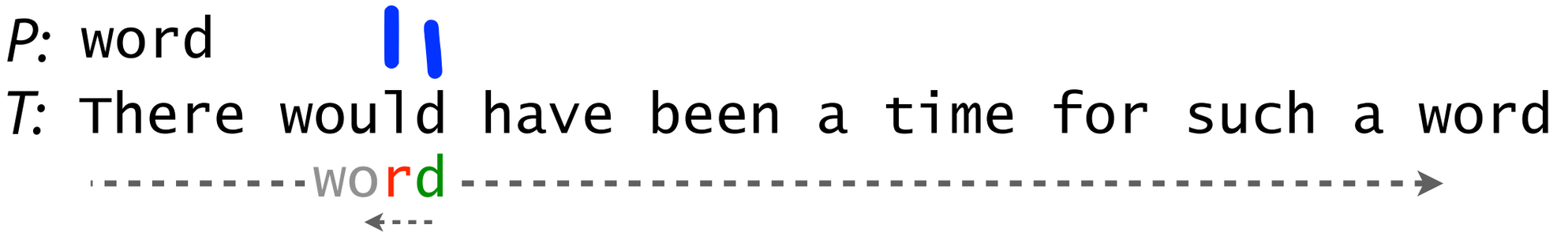
u doesn't occur in *P*, so we can skip next two alignments

P: word
T: There would have been a time for such a word
word
word skip!
word skip!
word

Boyer-Moore

Learn from character comparisons to skip pointless alignments

Try alignments in left-to-right order, and try character comparisons in right-to-left order



Boyer, RS and Moore, JS. "A fast string searching algorithm." *Communications of the ACM* 20.10 (1977): 762-772.

Boyer-Moore: Bad character rule

Upon mismatch, skip alignments until (a) mismatch becomes a match, or (b) *P* moves past mismatched character

Step 1:

T: G C T T C T G C T A C C T T T T G C G C G C G C G C G G A A

P: C C T T T T G C

Step 2:

T: G C T T C T G C T A C C T T T T G C G C G C G C G C G G A A

P: C C T T T T G C

Step 3:

T: G C T T C T G C T A C C T T T T G C G C G C G C G C G G A A

P: C C T T T T G C

Boyer-Moore: Good suffix rule

Let *t* = substring matched by inner loop; skip until (a) there are no mismatches between *P* and *t* or (b) *P* moves past *t*