1.

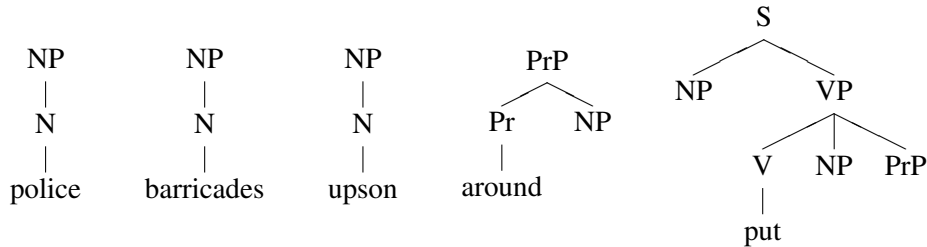1(**a**) Initial trees for a sample TAG (features omitted) or tree substitution grammar, with names α_{police}, $\alpha_{\text{barricades}}$, α_{upson}, α_{around}, and α_{put}, respectively.

```
  NP          NP          NP          PrP                    S
  |           |           |          /   \                 /   \
  N           N           N        Pr    NP             NP      VP
  |           |           |         |                         / | \
police    barricades    upson     around                    V  NP  PrP
                                                             |
                                                            put
```

1(**b**) A derived tree using substitution with the above set of initial trees.

```
                          S
                        /   \
                      NP      VP
                       |     / | \
                       N    V  NP  PrP
                       |    |  |   /  \
                    police put N  Pr   NP
                             |  |   |    |
                         barricades around N
                                          |
                                        upson
```