```
typeT buf[n];       /* an array of some type T */
int front = 0, rear = 0;
sem empty = n, full = 0;   /* n-2 <= empty+full <= n */
process Producer {
  while (true) {
    ...
    produce message data and deposit it in the buffer;
    P(empty);
    buf[rear] = data; rear = (rear+1) % n;
    V(full);
  }
}
process Consumer {
  while (true) {
    fetch message result and consume it;
    P(full);
    result = buf[front]; front = (front+1) % n;
    V(empty);
    ...
  }
}
```

Figure 4.4 Bounded buffer using semaphores.