int buf, p = 0, c = 0;
\{PC: c <= p <= c+1 ∧ a[0:n-1] == A[0:n-1] ∧
   (p == c+1) ⇒ (buf == A[p-1])\}

process Producer {
  int a[n];  # assume a[i] is initialized to A[i]
  \{IP: PC ∧ p <= n\}
  while (p < n) {
    \{PC ∧ p < n\}
    〈await (p == c);\}  # delay until buffer empty
    \{PC ∧ p < n ∧ p == c\}
    buf = a[p];
    \{PC ∧ p < n ∧ p == c ∧ buf == A[p]\}
    p = p+1;
    \{IP\}
  }
  \{PC ∧ p == n\}
}

process Consumer {
  int b[n];
  \{IC: PC ∧ c <= n ∧ b[0:c-1] == A[0:c-1]\}
  while (c < n) {
    \{IC ∧ c < n\}
    〈await (p > c);\}  # delay until buffer full
    \{IC ∧ c < n ∧ p > c\}
    b[c] = buf;
    \{IC ∧ c < n ∧ p > c ∧ b[c] == A[c]\}
    c = c+1;
    \{IC\}
  }
  \{IC ∧ c == n\}
}

Figure 2.4  Proof outline for the array copy program.