Diffusion Algorithm for Reliable Broadcast

**R_bcast(m):**
- Tag m with senderID and seqNo
- Send m to all processes, including self

**On recv(m):**
- If not delivered m already
  - If m.senderID ≠ self
    - send(m) to all processes
  - R_deliver(m)

FIFO Reliable Broadcast Algorithm

Initially:
- msgSet = ∅
- next[q] = 1 for q=1...N

**F_bcast(m):**
- R_bcast(m)

**On R_deliver(m):**
- s = m.senderID
- msgSet = msgSet ∪ {m}
- while there exists m’ ∈ msgSet such that (m’.senderId = s and m’.seqNo = next[s])
  - F_deliver(m’)
  - next[s] = next[s] + 1
  - msgSet = msgSet – {m’}

Causal Reliable Broadcast Algorithm

Initially:
- recentDel = ⊥

**C_bcast(msg)**
- F_bcast( (recentDel, msg) )
- recentDel = ⊥

**On F_deliver( (m₁, m₂, ..., mₖ) ):**
- For i=1...K
  - If not previously executed C_deliver(mᵢ)
    - C_deliver(mᵢ)
    - recentDel = (recentDel, mᵢ)