## $so(oid1, oid2, sv) \stackrel{\triangle}{=}$ Is oid1 totally ordered before oid2 according to sv? LET $pos1 \triangleq FirstIndexOfElementSafe(sv, oid1)$ 0 if oid1 is not in sv $pos2 \stackrel{\triangle}{=} FirstIndexOfElementSafe(sv, oid2)$ 0 if oid2 is not in sv IF $pos1 \neq 0 \land pos2 \neq 0$ Case (1): both have been at the server IN THEN pos1 < pos2 using the order they reach the server ELSE IF $pos1 = 0 \land pos2 = 0$ Case (2): none has been at the server THEN oid1.seq < oid2.seq using the order they are generated ELSE $pos1 \neq 0$ Case (3): the one has been at the server is ahead