Lemma 4.1 *Let P be a process of the asynchronous π-calculus. Assume that P can make two transitions $P \xrightarrow{\alpha_s} Q$ and $P \xrightarrow{\alpha_r} Q'$, where α_s is a send action while α_r is a receive action. Then there exists a process R such that $Q \xrightarrow{\alpha_r} R$ and $Q' \xrightarrow{\alpha_s} R$.*

Consider, for example:

$$P_0 \mid P_1 \Leftarrow\ c_0!\langle\rangle.o!\langle c_0\rangle + c_1?().o!\langle c_1\rangle \mid c_1!\langle\rangle.o!\langle c_1\rangle + c_0?().o!\langle c_0\rangle$$