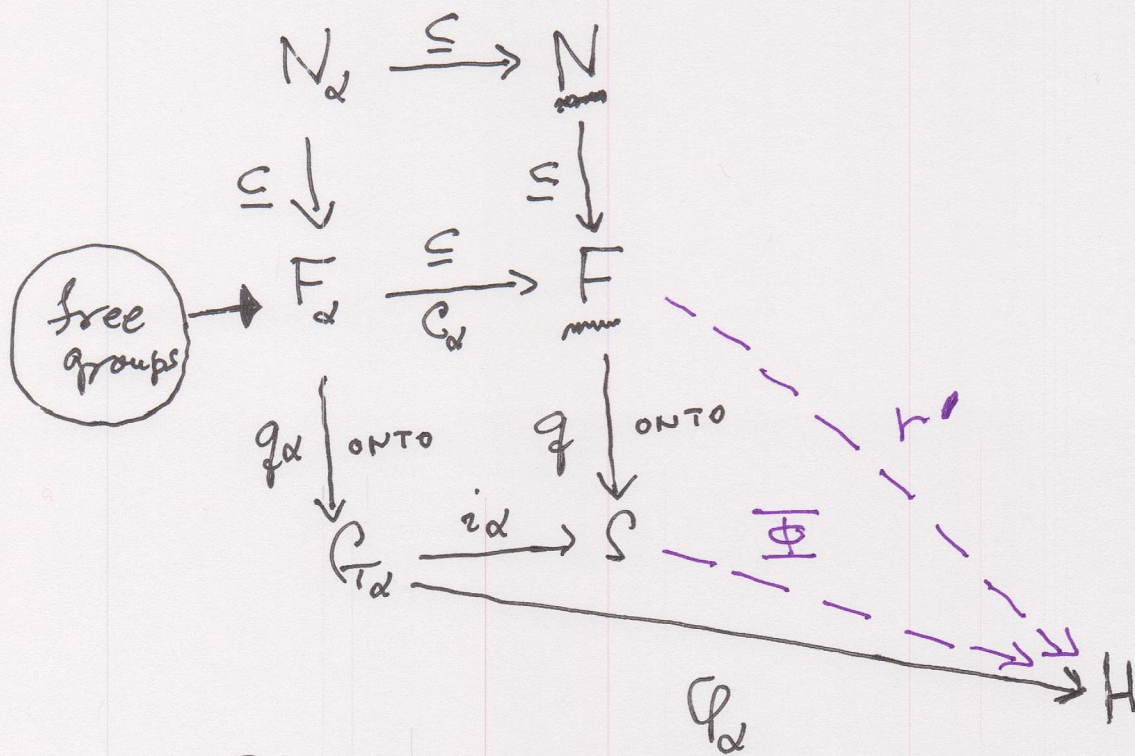


Commutative diagram for the

file free-product.pdf



The columns
are quotient data $B \triangleleft A \rightarrow A/B \cong G$

The existence of r' follows because F_α is a free group with ^{free} generating set $\coprod_\beta X_\beta$, where X_β freely generates F_β for all β .

The existence of Φ follows because $r' \upharpoonright N$ is trivial.