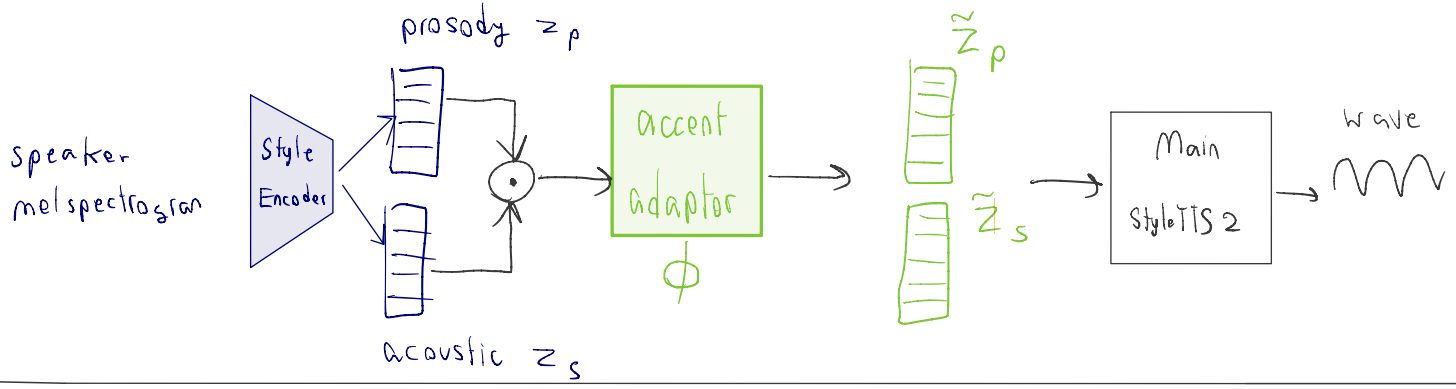

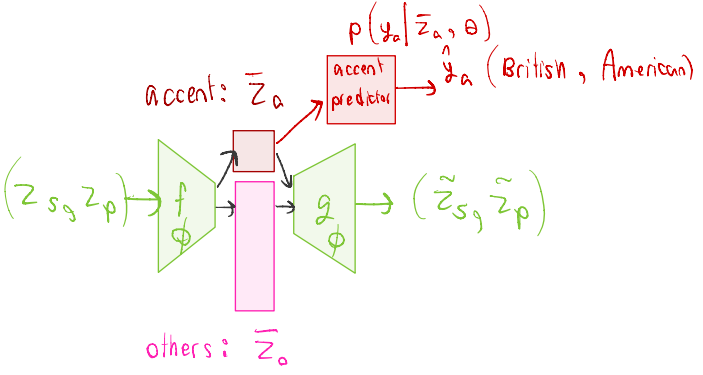

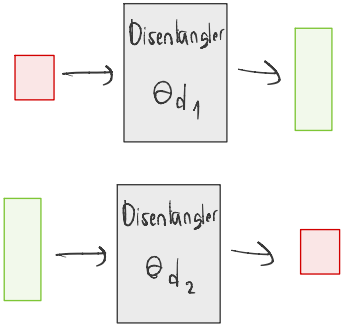

$$\min_{\theta_{d_1}, \theta_{d_2}} \max_{\phi, \theta} \mathbb{E}_{z_s, z_p \sim p_{data}} [\log p(y_a|\bar{z}_a; \theta, \phi) + \log p(\tilde{z}_s, \tilde{z}_p|\bar{z}_a, \bar{z}_o; \phi) - \log p(\bar{z}_o|\bar{z}_a; \phi, \theta_{d_1}) - \log p(\bar{z}_a|\bar{z}_o; \phi, \theta_{d_2})]$$