AB 11 high school students learned a 9-pair paired-associate (PA) list in which 6 terms served both as S and R: the list was divisible into 3 4-unit implicit chains. Following learning, S was shown each of the 12 terms in the PA list as stimuli in a reaction time (RT) situation, with each chain's terminal term being the correct response. Additional PA and RT trials followed. RT was a negatively-accelerated increasing function of the number of mediating steps. In PA learning, differences in the difficulty of the various pairs reflected the intrusion of backward and forward remote associations, which suggested possible explanations of the failure to find a linear relationship between RT and number of mediating steps.