Despite brave efforts at automation, ARIMA modelling still carries an off-putting mystique and complexity, so that the simpler autoregressive models are much more attractive, particularly in the multivariate or non-linear context of time series prediction. The scope of the autoregressive model for accurate representation of time series structure can, however, be considerably extended by generalising the shift operator used in its classical representation. Examples will be used to illustrate the improvements in univariate, multivariate and non-linear prediction, by use of this relatively simple idea.