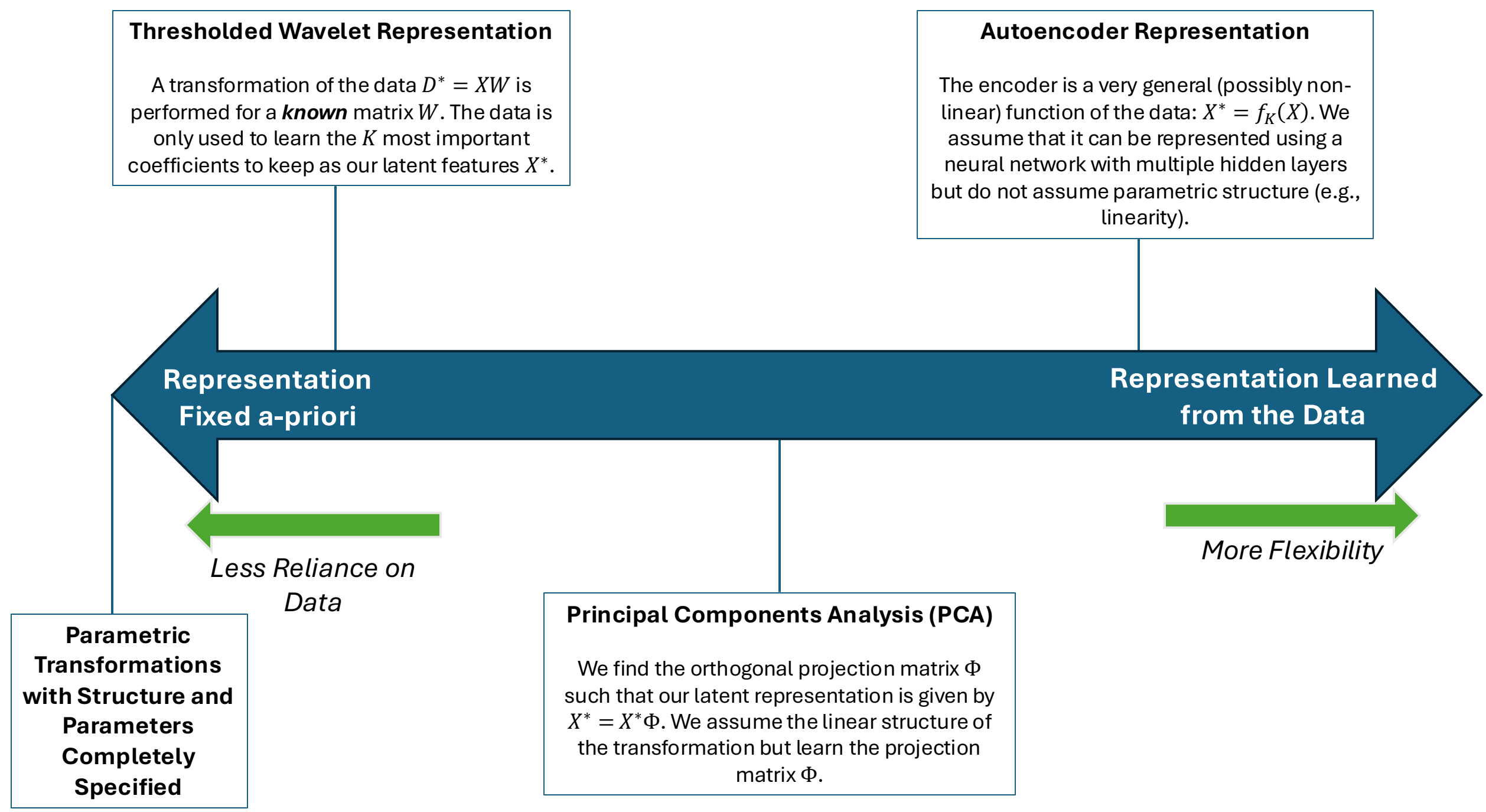
Thresholded Wavelet Representation
A transformation of the data $D^* = XW$ is performed for a ***known*** matrix W. The data is only used to learn the K most important coefficients to keep as our latent features X^*.
Autoencoder Representation
The encoder is a very general (possibly non-linear) function of the data: $X^* = f_K(X)$. We assume that it can be represented using a neural network with multiple hidden layers but do not assume parametric structure (e.g., linearity).
Representation Fixed a-priori
Representation Learned from the Data
Less Reliance on Data
More Flexibility
Parametric Transformations with Structure and Parameters Completely Specified
Principal Components Analysis (PCA)
We find the orthogonal projection matrix Φ such that our latent representation is given by $X^* = X^*\Phi$. We assume the linear structure of the transformation but learn the projection matrix Φ.