Resonant Inelastic X-ray Scattering (RIXS) provides direct access to elementary charge, spin and orbital excitations in complex oxides. As a technique it has made tremendous progress with the advent high-brilliance synchrotron X-ray sources. From the theoretical perspective the fundamental question is to precisely which low-energy correlation functions RIXS is sensitive. Depending on the experimental RIXS setup, the measured charge dynamics can include charge-transfer, phonon, d-d and orbital excitations [1]. The focus of this talk will be on RIXS as a probe of spin dynamics and superconducting gap of high-Tc cuprates [2-4] and the combined magnetic and orbital modes in strongly spin-orbit coupled iridium-oxides [5-7].