Yield-stress liquids respond as elastic or viscoelastic solids below a critical imposed stress, and they flow as liquids at higher stresses. The prototypical example is paint, which must flow easily under the brush during application but must not flow under gravitational stress following application. Many complex fluids of commercial interest, including consumer products, foods, cement, filled polymers, mineral waste streams, waxy crude oils, and others containing colloidal particles, exhibit yield stresses. Classical descriptions of yield-stress liquids assume that yielding is a reversible process that occurs at an invariant surface in stress space. This description is usually inadequate to describe real fluids, however, where a "thixotropic" response caused by disruption of the microstructure following the initiation of flow can lead to unexpected results such as "avalanche" behavior. This talk broadly reviews yield-stress liquid behavior and looks at current ideas about incorporating microstructural response into continuum descriptions.