Tate homology and cohomology originated in the realm of group algebras, and through a series of generalizations it evolved to the setting of Gorenstein rings. The cohomological theory has a more far-reaching generalization to the setting of associative rings; it is now called stable cohomology. On the homological side, the picture is not quite this clear. In the talk I will discuss recent work on that topic. (Received September 21, 2015)