Hybrid systems with memory are dynamical systems exhibiting both hybrid and delay phenomena. In this note, we study the asymptotic stability of hybrid systems with memory using generalized concepts of solutions. These generalized solutions, motivated by studying robustness and well-posedness of such systems, are defined on hybrid time domains and parameterized by both continuous and discrete time. We establish Lyapunov-based sufficient conditions for asymptotic stability using both Lyapunov-Razumikhin functions and Lyapunov-Krasovskii functionals. Examples are provided to illustrate these conditions.