Traditionally, augmentative and alternative communication (AAC) interventions are considered for people with post-stroke aphasia when traditional restorative interventions have been exhausted, or when the aphasia is so severe that spoken language is minimal. Less often, AAC is regarded as a viable tool for those with more significant comprehension challenges, or for those with a milder aphasia severity. This approach to the use of AAC in aphasia rehabilitation is likely multifaceted and based on myths that persist due to a lack of empirical evidence demonstrating the power of AAC (Dietz, et al. 2020). I will present a theoretical framework that explains how AAC can be implemented at all stages of rehabilitation and for people with all types of aphasia and severity levels (Dietz et al., 2014; 2018; 2020; Griffith et al., 2014). I will also share behavioral and neuroimaging data from a feasibility study (Dietz et al., 2018) and ongoing work that examines the impact of a novel high-tech AAC intervention designed to harness the principles of neural plasticity and serve as a dual-purpose tool that simultaneously supports communication and facilitates spoken language production for people with various types of aphasia and severity. These findings, especially when considered together the extant data on using no-tech AAC strategies such as gesturing, drawing, and multimodal approaches (e.g., Pierce et al., 2019) to elicit word retrieval offer strong incentive for clinicians and researchers alike to reconsider the role of AAC in aphasia rehabilitation.