A series of recent studies among different language populations have shown that lexical information affect spoken-word recognition in their native languages. However, not many studies have been conducted on how such lexical information affect non-native word recognition processes. Imai and her colleagues conducted a research on how lexical information and word representations could affect word recognition in native and non-native languages (Imai, Walley, and Flege, 2005). They found that lexical information such as neighborhood density, lexical frequency and lexical familiarity affect listeners' word recognition in L2 and that L2 proficiency is highly related to the development of phonological representations of L2 words. This talk will report on a series of experiments to see whether the findings in the Imai et al.'s (2005) study are also applicable to Japanese native listeners. The same experiments were conducted with Japanese native listeners with low English proficiency, Japanese native listeners with high English proficiency, and English native listeners. The results seem to suggest that L2 proficiency affects L2 word recognition as reported in Imai et al. (2005). However, the different performance patterns were also observed in our study. Based on the findings, this talk will also discuss the similarity and differences between the two studies. [This study was partially supported by Grants-in-aid for scientific research granted to the first author (Category: Young Scientists (B): no.18720110).]