Silbert & de Jong (JASA, 122: 3092) investigated correlations between response bias and segment frequency in a number of previously published segment identification data sets. In general, bias tends to be positively correlated with frequency. When applied to second language (L2) learning, this pattern predicts biases toward identifying novel L2 categories as L1 categories, since the number of instances of L1 categories far outweighs those of novel categories in learners’ experience. Nagao, Lim, & de Jong (2003, ICPhS) confirm this: Japanese listeners tend to label ambiguous English coda consonants as onsets. However, younger and less experienced learners of English tend to label ambiguous tokens as codas; they tend toward using the novel category even though it is less frequent in their experience. This paper reports experiments in which Korean EFL learners identified English obstruents and in which they produced them. Cases of novel category response bias are observed in identification, and less so in production. Such novel category effects suggest a model in which novel categories serve, in part, as indicators of the L2 itself and stand out as response options in L2 identification tasks. These effects are likely counteracted by motor difficulties in L2 production tasks.