In my talk, I present the data of two linguistic experiments that investigate the perception of verbal prefixes in Russian. I concentrate on natural perfectives and semantic/lexical perfectives. Natural perfectives are built with prefixes that are semantically empty and have only aspectual function (na-pisat’), semantic/lexical perfectives are built with prefixes that have not only aspectual but also semantic/lexical function (pere-pisat’). In a word selection task and a prime study where I use the prefixes po- and za-, I investigate whether a Russian native speaker distinguish the two mentioned prefix types and whether the perception of prefixes can be manipulated by showing the prefixes as stimuli before the word selection task started. I argue that natural prefixes are more easily recognized than lexical prefixes, since the latter change the verb not only on the grammatical level but also on the semantic level.