

Tobias Scheer, Université Nice Sophia Antipolis, CNRS 7320
(corresponding author, scheer@unice.fr)

Laurent Dumercy, Université Nice Sophia Antipolis, CNRS 7320

Frédéric Lavigne, Université Nice Sophia Antipolis, CNRS 7320

Markéta Ziková, Masaryk University Brno

Anything goes: Czech initial clusters in a dichotic experiment

Some languages restrict word-initial clusters to TR (T = obstruent, R = sonorant), while others also allow for RT, TT and RR. The former, TR-only languages, instantiate words with *all* logically possible muta cum liquida clusters. By contrast, the latter, anything-goes languages, may (e.g. Moroccan Arabic) or may not implement all logically possible #RT, #TT and #RR clusters (e.g. in Czech only 28 out of 108 possible #RT clusters occur).

The question raised is thus whether the missing non-#TRs in Greek, Czech etc. are accidental or systematic gaps. The zero hypothesis is that for each language, the set of occurring and non-occurring clusters shares some property. In Slavic languages neither set forms a natural class in any sense (e.g. Cyran & Gussmann 1999 for Polish). This as well as the diachronic situation in Slavic (#CCs are created by the loss of yers) speaks in favour of the accidental gap analysis. On the theoretical side, the accidental gap analysis matches the claim that there are only two types of grammars (regarding initial clusters): one imposes a restriction on #CCs, the other does not. The former produces TR-only-, the latter anything-goes languages. The prediction of a binary typology follows from the idea that the beginning of the word has a true phonological identity: syllabic space (Lowenstamm 1999, Scheer 2012).

In this talk we experimentally test the prediction that really anything goes in anything-goes languages. In dichotic experiments, subjects are exposed to two distinct stimuli through two distinct perceptive channels. They then perceive neither: the brain has fused them into something that is not present in any perceptive input; the best known case is the McGurk effect (McGurk & MacDonald 1976). Dichotic effects may also be achieved with two distinct audio channels, perceived through the left (L) and right ear (R). Cutting (1975) has shown that English natives perceive *play* when inputted with *pay* (L) and *lay* (R). Interestingly, the perception *play* is still achieved when *lay* has a 50 ms lead on *pay*, i.e. when in the physical input the #l precedes the #p. That English natives will not perceive *lpay* is understandable since (1) there is no such lexical item and (2) their TR-only grammar prohibits #lp.

If the accidental gap hypothesis is correct, the grammar of Czech for example does not prohibit any #RT, independently of whether it does or does not occur in some lexical item ((2) above). Like English natives, however, the perception of Czechs may be guided by the existence of a lexical item that instantiates a given #RT ((1) above). We have run an experiment with 24 Czech natives along the audio-audio dichotic protocol mentioned (54 word pairs distributed over all types of #CCs). We report that there is a strong lexical bias favouring the perception of existing lexical items, as compared to non-existing ones; e.g. on an input {*dousit* (R), *rousit* (L)} speakers will report that they perceive *rdousit* "to throttle" (while *drousit* is not a word in Czech). This behaviour extends to all types of #CCs, and is pervasive even if the non-existing target is favoured by a 50 ms lead ({*dousit* (R), *rousit* (L, 50 ms later)}). Combined with this lexical bias there is also (against the prediction) an existing-cluster-effect: when target word 1 exists (e.g. *lpět* and *prak*) but target word 2 does not (**plět* and **rpak*), the perception of the latter is significantly more frequent when the non-existing word begins with an existing #CC (#pl of **plět*), as compared to when it bears a non-existing #CC (#rp of **rpak*). The trouble is that both biases (lexical and existing-cluster) are interleaved. In order to tease them apart, i.e. to make sure that the stimulus is only assessed by the grammar (rather than by a simple lexical access), we need to get the lexical bias out of the

way. We therefore probed only pairs made of target words that do not exist, e.g. {*touk* (R), *rouk* (L)}, neither **trouk* or **rtouk* exists. This time the result conforms to the prediction: the existing-cluster-effect disappears. That is, there is no statistically detectable effect induced by cluster existence: as predicted, the perception of speakers stubbornly follows lead time, independently of the result (existing or non-existing cluster). We conclude that once the lexical bias is eliminated, the prediction that literally anything goes is supported.