Most of models on language comprehension, although making different proposals regarding nature of competitors, postulate that identification and comprehension of words are the results of competitions between different linguistic units (see for example NAM, Luce and Pisoni, 1998; the revised Cohort model, Marslen-Wilson et al., 1996, TRACE, McClelland and Elman, 1986, or Shortlist, Norris, 1994). In this context, situation in which speech is masked by others speech signals could be critical. Our goal is to examine psycholinguistic processes implicated in the situation of speech-in-speech comprehension and to identify information levels in which linguistic interferences can occur. To determine this, nature and language of background noise were manipulated. In a series of experiments, we used cocktail-party signals in different world languages: French, Breton, Irish and Italian. These babbles were composed of 4 talkers and were chunked into sequences of 4s. In each sequence, a French target word was inserted 2.5s from the start of the sequence, with signal-to-noise ratio of -5dB or 0dB. Forty native speakers of French had to write down the target words. Interesting results were observed only at -5dB since differences in masking effects were obtained between the different languages manipulated. Native French speaking participants had more difficulties to understand French words in French babbles than in unknown languages. This result could reflect the fact that in the case of 4 talkers in the French babble, some words in the background are still activated and therefore compete with the identification of the target word. Then, level of difficulties varied depending on language spoken in background, demonstrating that some languages interfered more with French than some others. This way, it appears that the interference effect is not purely acoustic but also linguistic. To isolate linguistic effects, we ran a second experiment in which we controlled for acoustic effects. In this experiment, cocktail-party signals in the different world languages were used again as babble noises and also served to generate language specific fluctuating speech noises. These two types of background carried the same acoustic information, while cocktail-party signals are the only ones carrying linguistic information. A lower identification of target words was observed with cocktail-party signals than with matched fluctuating noises of about 20%, clearly showing that part of interferences is linguistics. Finally, a bigger difference between the two types of backgrounds (cocktail-party signals - fluctuating noises) was observed in French compared to all the other languages, while no difference between the unknown languages was observed. These results suggested a strong effect of lexical competition in the French-in-French situation. These studies explored situation of speech-in-speech with an “off line” task, i.e. intelligibility task. Therefore answers are given once process of target words is fully completed and not during process of identification. In the discussion we will look at the differences observed between “off line” and “on line” tasks, i.e. intelligibility and lexical decision tasks.