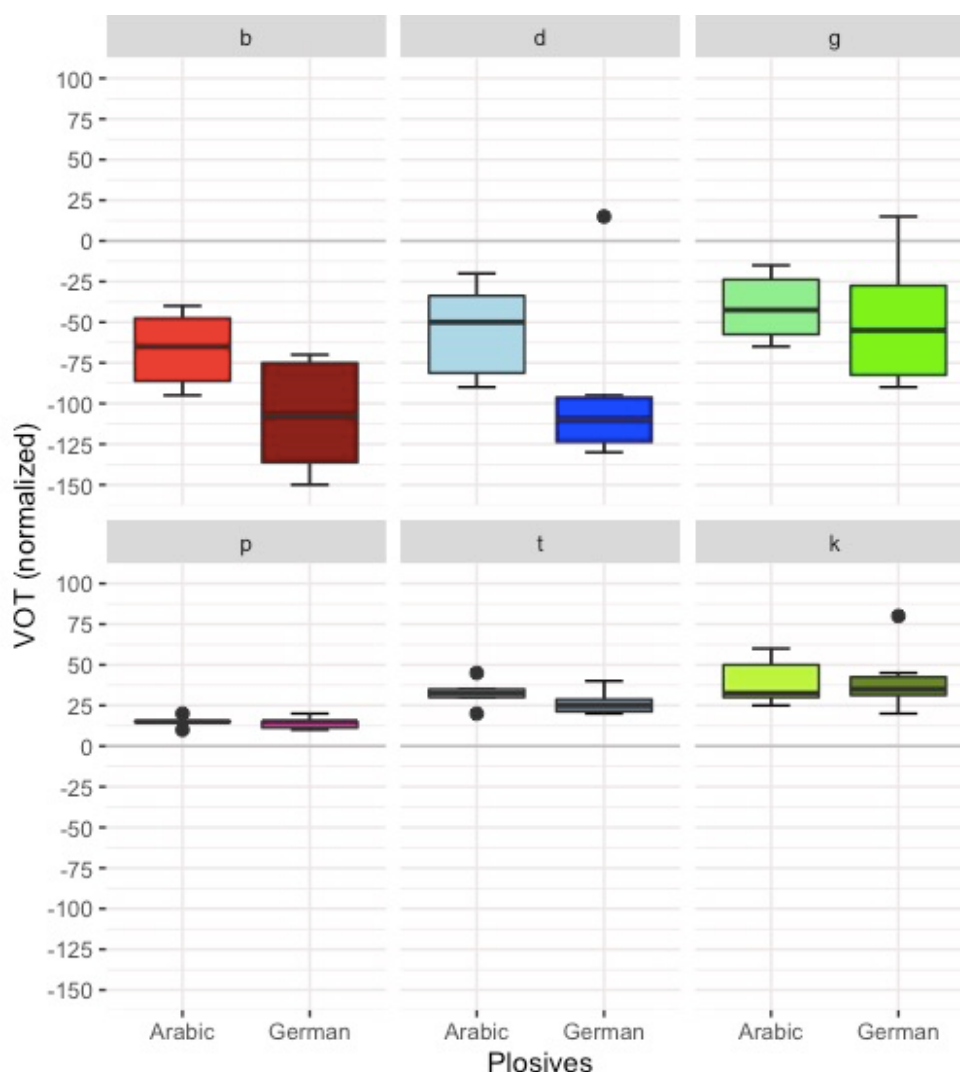


Differences in VOT in one speaker of L1 Arabic and L3 German

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In this project, I wanted to investigate, whether an L1-speaker of Arabic adapts his VOT to the phonology of his L3 German or not. The participant speaks Arabic as L1, French as L2 and German as L3. Arabic phonology has a strict voicing distinction between voiced and voiceless plosives. Voiced involves pre-voicing and voiceless means short lag [1]. German plosives do not show this clear distinction. They are primarily differentiated based on the feature [tense]. /p, t, k/ are classified as [+ tense], whereas /b, d, g/ are [- tense]. Because [+ tense] involves the feature aspiration, and aspiration is a feature of long lag, they are used as counterparts to the voiced plosives, which typically have short lag in German [2]. There are few studies about the phonology of the Arabic dialects, especially regarding the topic VOT [3]. Also, the topic of L3-phonology is quite new, even though significant differences can be found between L2- and L3-phonology acquisition. While L2 experience may be helpful in acquiring an L3, if they belong to the same language group, having learnt an L2 of another language group than the L1 and L3, can lead to transfer [4, 5]. This study aims to investigate the production of VOT in plosives produced by a multilingual speaker of Arabic and German. For the recordings, I used Praat on a MacBook Air 2015. The participant sat in front of it and read two word lists out loud, one containing 36 words for each language. The items' wordinitial sounds were analyzed regarding their VOT. The target sounds were the plosives /b,d,g,p,t,k/. For each plosive, there were six words. The analysis showed that the VOT-findings in the speakers' native language fit the expectations of an Arabic phonology (see figure 1). Almost all voiced plosives show pre-voicing. The VOT approaches 0 the further back the place of articulation is. In both languages, /b/ has the lowest VOT of all values. /d/ is where the biggest difference between the languages can be found. /g/ again shows a large difference between the languages. In German, the 3rd quartile lays above 0. The average is still lower than in Arabic. In the case of the voiceless plosives, all values have positive VOT and have less variation than their voiced counterparts. /k/ has the greatest variation of all voiceless plosives. The only plosives where the VOT is longer in German than in Arabic are /p/ and /k/. In general, the speakers' productions don't conform with the L3 phonology. Moreover, the VOT of the voiced plosives in German is more negative than in Arabic. I presumed that the speaker would try to move his VOT more to the positive range, which is a behavior reported by [6] for learners of an L2. Since this cannot be found here, I concluded that the reason for this could be the status of his L2 French leading to negative transfer on his L3 German. The VOT in French is like the Arabic, with voiced meaning pre-voicing and voiceless meaning short lag [7]. The reason I don't suppose his L1 is causing the interference is this: with an advanced L2, VOTs are tending towards the target language, whereas values similar to L2 were often found in L3 learners, but fewer values similar to L1 [6]. An L3 speaker is assumed therefore to have a native and a foreign register. The phonology of the L2 then dominates in the foreign language register, whereas only the L1 phonology is used in the L1 register [5]. German is the L3 here, which is why I suspect the speaker being in the foreign language register while speaking German and therefore makes use of the phonology of the L2. Since this is not an absolute truth, this behavior must be verified. Therefore, one would have to compare L2 speakers of German with a mother tongue with a clear voice distinction, as in Arabic and French, with L3 speakers of German with a clear voice distinction of the L2.

Figure 1. Normalized VOT of the participant by plosive and language
The whiskers of the box plots stand for the 1st and 3rd quartiles and the dots display outliers



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