# Examining interrogative marking in French Sign Language with the AZee approach

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Work on Sign Languages (SLs) underline the role of different non-manual markers depending on the type of question: the eyebrows would be raised, and the chin lowered for the production of *closed-ended questions*, while the eyebrows would be lowered for *open-ended questions*. Work on French Sign Language (LSF) also seem to validate this contrast but without quantitative analysis. We tested this in the framework of AZee, a formal approach to SL modeling. It is based on the identification of linguistic associations between forms (i.e. timed body articulations) and identified meanings (of which 'information request' constituted a relevant instance for this work), called *production rules*. A corpus-based methodology exists to extract AZee production rules from SL data (Hadjadj et al. 2018). It consists in data searches alternating meaning and form criteria, gradually converging to strong associations ultimately leading to production rules. We applied it on approximately 1 ½ hours of semi-elicited dialogues in LSF. This process is summarized below.[1]
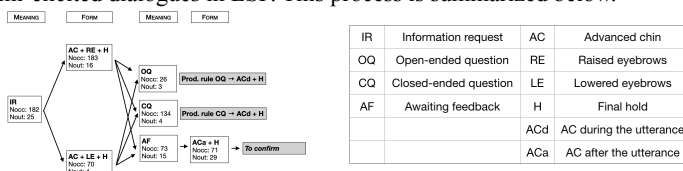
Results do not show that eyebrows would be *the* marker of IR in LSF. Additionally, the type of question does not seem to trigger a specific shape of eyebrows. This work instead highlights the role of AC for *all* questions. However, AC also seems to be involved in other utterances that are not questions: AF. Further studies would confirm the difference of timing of AC observed between IR and AF. Finally, another blind spot is the change in eyebrows shape alongside questions, regardless of its type. Having a closer look at the signer's biases could also shed new light on this point.

References: • Hadjadj, M., Filhol, M., Braffort, A. (2018). Modeling French Sign Language: A proposal for a semantically compositional system. In *Proceedings of the Language Resources and Evaluation Conference,* 4253-4258, Miyazaki, Japan.

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[1] *Nocc* corresponds to the total number of occurrences found for the concerned criterion; *Nout* corresponds to the number of occurrences that do not fit into any of the next groups.