

# The role of marriage patterns on the persistence of shared sign languages

Marriage patterns and hearing signers affect the likelihood that a shared sign language will persist

## Background Aoki & Feldman (1991)

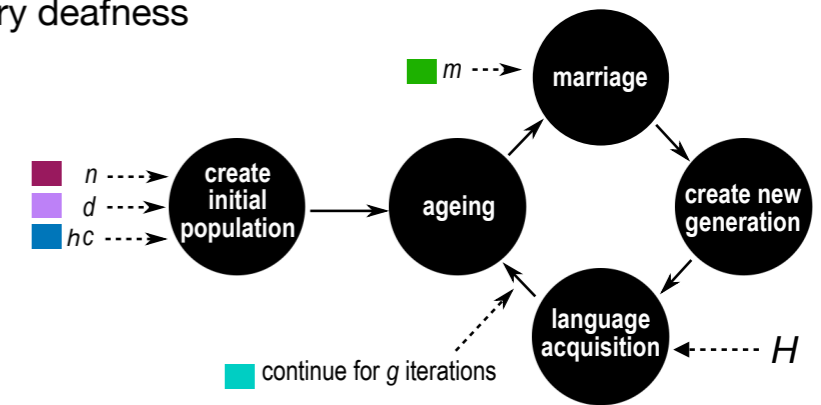
Condition for the persistence of a SL:  
 $m$  = % assortative mating for deafness,  
 $q$  = % of recessive alleles  
 $lc$  = % of deaf children acquiring SL from one parent signing

*assortative mating* refers to the tendency for an individual to marry another based on a feature

$$2lc \times [(1 - m)q + m] > 1$$

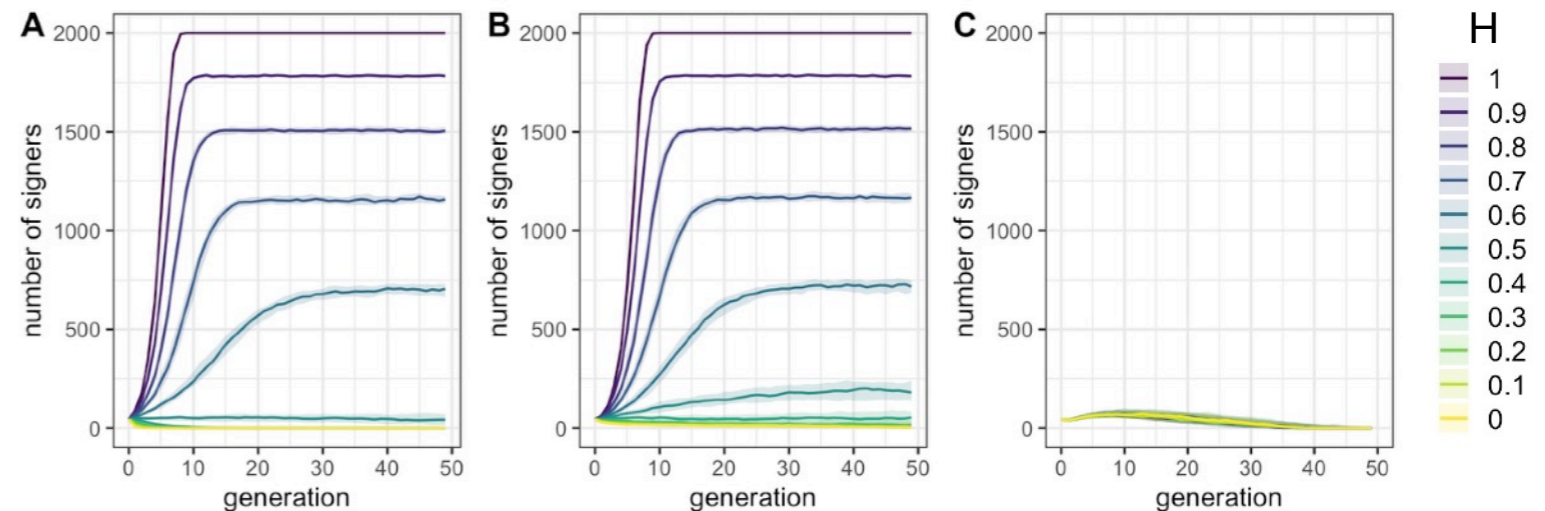
## Method Agent-based modeling

- population with recessive hereditary deafness
- number of agents = 2000 ( $n$ )
- % deaf = 2.2 ( $d$ )
- % hearing carrier = 17.2 ( $hc$ )
- % hearing acquisition ( $H$ )
- assortative mating ( $m$ )
- generations = 50 ( $g$ )



## Results

The number of signers over generations, with different proportions of hearing signers ( $H$ ) acquiring the sign language, when assortative mating is 0.0 (A), 0.5 (B) and 1.0 (C)



research supported by:

