Can categorization and generalization difficulties explain word learning characteristics in Developmental Language Disorders?

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**Introduction**
- Children with Developmental Language Disorders (DLD) cope with:
  - difficulties in word learning, (Rout & Widowson, 2004)
  - limited processing resources, (van Riper, McGrother & Perriam, 2004)
- Categorization and generalization processes are involved in word learning.
  - The rules (bias) a learner has acquired could accelerate word learning and help generalization, (Perry & Samuels, 2011)
  - Generalization can be defined as a multi-level process, (Perry & Samuels, 2011)
- Bayesian theories of cognition offer an interesting approach to study word learning, (Perry & Tenenbaum, 2011), which can be understood as the result of an inductive inference mechanism.

**Aims & Objectives**
- Can children with DLD use inductive inference in order to acquire and generalize new biases in a categorization task?
- Are children with DLD sensitive to the nature (perceptual vs relational) and/or number of features which define a category?

**Methods**
- **Participants**
  - N = 20
  - DLD
  - Special schools
  - French-speaking
  - Age-matched controls
  - N = 20
  - Similar non verbal IQ
  - French-speaking
- **Materials and procedure**
  - Word learning task – 1 feature
    - 2 categories
      - « This is a mopis. Can you find another mopis ? »
  - Generalization – 1 feature
    - 3 unfamiliar categories
      - « Let’s try the same with new families. This is a baté. Can you find another baté ? »
  - Word learning task – 2 features
    - 4 subcategories
      - « We grouped mopis together and dufans together, but all mopis are not the same and all dufans are not the same. Can you help them to split them apart? This is a boussu. Can you find another boussu? »
  - Generalization – 2 features
    - Unfamiliar categories
- **Word learning task – example of an item defined by one perceptual feature**
- **Generalization task – one perceptual feature**
- **Word learning task – example of an item defined by two perceptual features**
- **Generalization task – two perceptual features**
- 2 conditions : categories perceptually (e.g. : number of fingers) or relationally (e.g. : spatial relation : big part above small part) defined
- Word learning task :
  - Rule/Bias acquisition via inference mechanism with feedback
  - Generalization of the learned rule: Extension of the category
  - Progressive learning :
    - When the classification rule defined by one feature is acquired, a second feature is introduced

**Predictions**
- DLD children :
  - Will be able
    - to discover a categorization rule based on 1 perceptual feature, (Dauvister & Maillart, 2011)
    - to abstract this rule and apply it at a second level of abstraction in order to extend the category further.
  - Will encounter difficulties
    - With relational features;
    - With the introduction of a second feature, as the learning of a category based on two features will recruit more processing resources.

**References**

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