A verbal and non-verbal task battery for first- and second-order theory of mind - data from adults and primary school children from Germany and Greece

Anna Czypionka[1], Maria Andreou[2], Dafni-Vaia Bagioka[3], Angelika Golegos[1], Theo Marinis[1], Eleni Peristeri[4], Arhonto Terzi[3]

[1]University of Konstanz, [2]University of the Peloponnese, [3]University of Patras, [4]Aristotle University of Thessaloniki

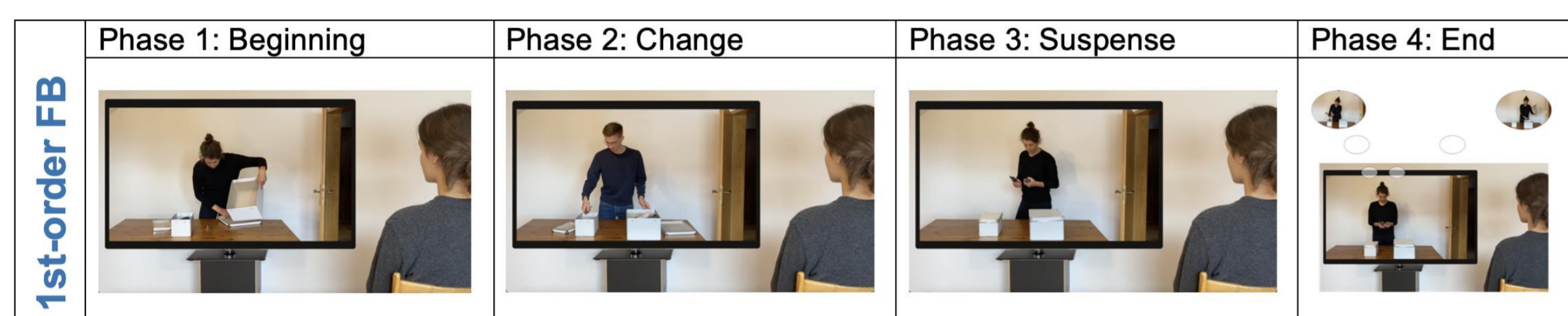## Background

Theory of Mind (ToM)

- Ability to attribute mental states to others that may be distinct from one's own [1];
- 1st-order ToM: taking into consideration another person's beliefs;
- 2nd-order ToM: taking into consideration another person's beliefs about someone else's beliefs;
- False Belief (FB): understanding that a person's belief can differ from reality.

ToM and language skills

- Language skills powerful predictor of ToM performance [2];
- Autistic children often fail ToM tasks [3], unclear if due to ToM deficits or high language demands of the tasks;
- There are low verbal tools for 1st-order FB ToM [4];
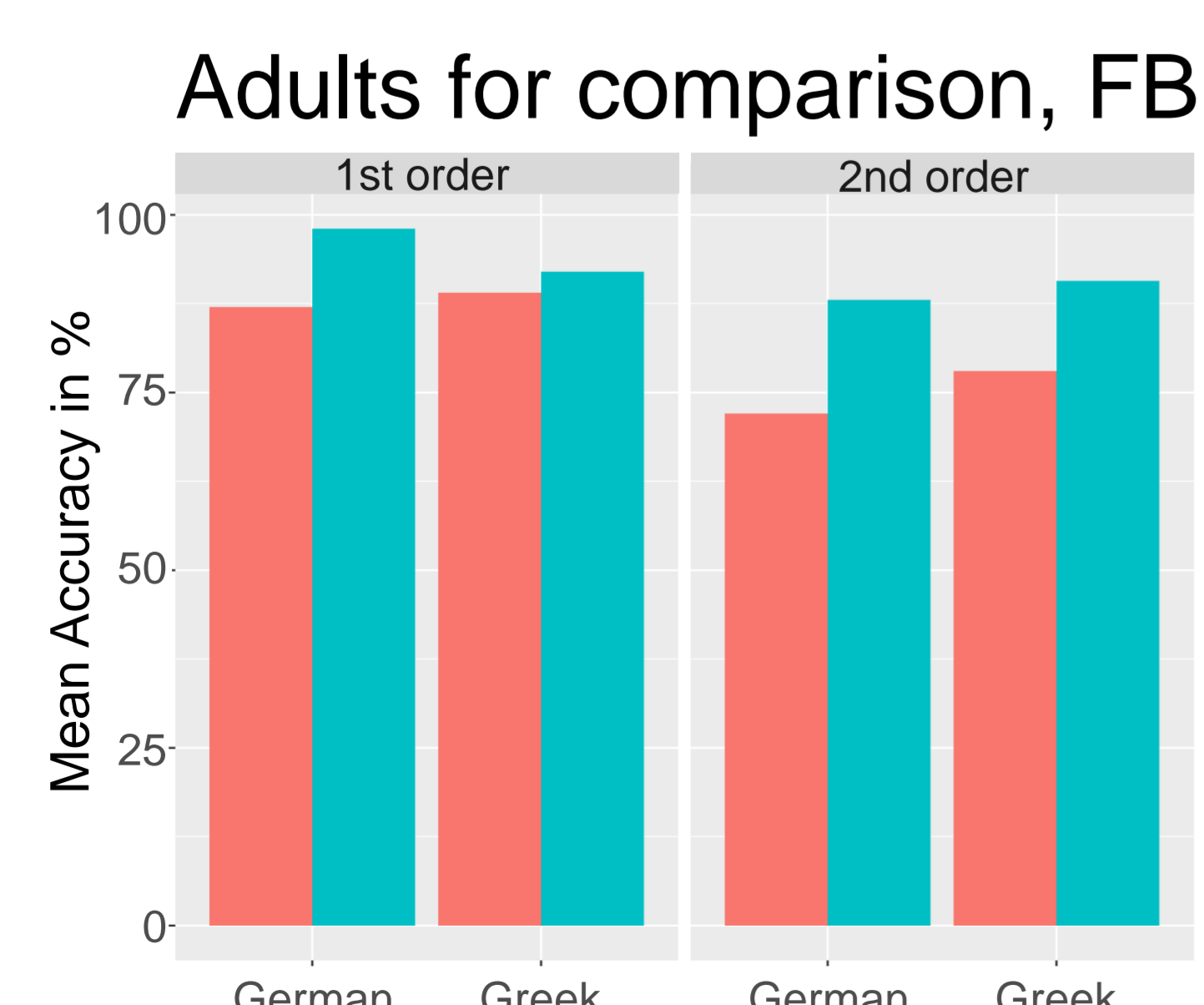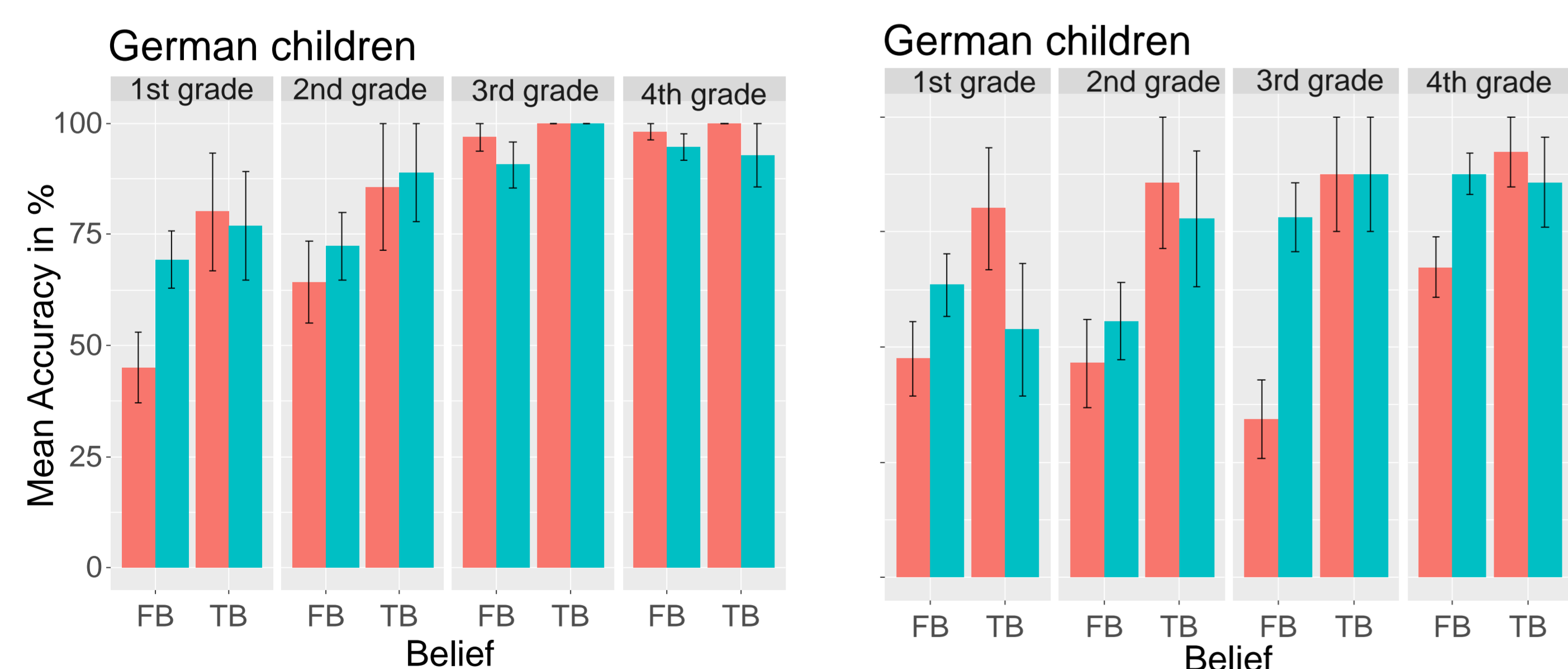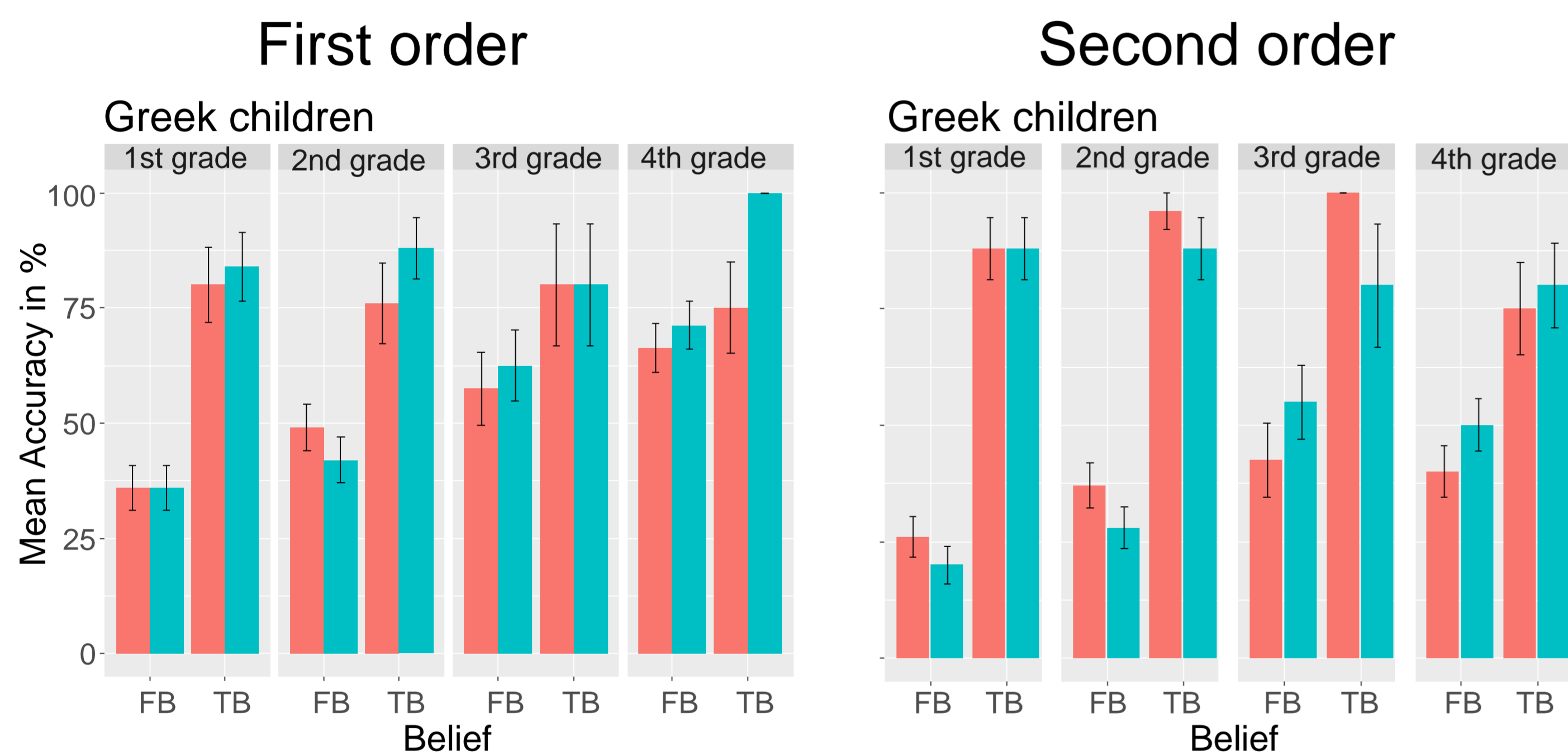- No existing non-verbal tools that test both 1st- and 2nd-order FB ToM.

Study aim: Developing a new tool that enables testing for 1st- and 2nd-order FB ToM in a **verbal and non-verbal task** and is appropriate for both adults and children.

Method

Child study: 3 practice + 10 experimental videos; adult study: 3 practice + 16 experimental videos [5]; see laptop presentation for details.

Results

Discussion

Results

- Adults score higher than children.
- Adults and children score higher for 1st-order than 2nd-order.
- Adults benefit from language (verbal > non-verbal).
- Children score higher on TB than FB tasks.
- Children's FB performance improves over primary school years.
- Currently: Some difference between Greek and German children.
  - Due to different cultures, school systems, sample sizes …?
  → Establish culture-specific baselines.

Conclusion

➢ The tool is suitable for assessing ToM skills in neurotypical adults and typically developing children.
➢ Culture-specific baselines with neurotypical children are advisable.
➢ Non-verbal task sufficient to assess children's ToM skills.
➢ Promises to be suitable for autistic children with low verbal abilities → direction of future research.

References

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Overview participants

Grade	Greek	German
1	N = 25, mean age = 6;9, SD = 0;5, age range = 5;6-7;7, 15 m, 10 f	N = 13, mean age = 7;3, SD = 0;5, age range = 6;1-7;10, 7 m, 6 f
2	N = 25, mean age = 7;9, SD = 0;5, age range = 6;8-8;5, 11 m, 10 f	N = 9, mean age = 7;9, SD = 0;7, age range = 6;8-8;10, 3 m, 6 f
3	N=10, mean age = 8;7, SD = 0;2, age range = 8;5-9;0, 3 m, 7 f	N = 8, mean age = 9;1, SD = 0;3, age range = 8;7-9;10, 4 m, 4 f
4	N=20, mean age = 9;9, SD = 0;5, age range = 9;3-11;1, 5 m, 15 f	N = 14, mean age = 9;7, SD = 0;5, age range = 9;7-10;10, 6 m, 8 f
total	80	44