

METAMEMORY IN TURNER SYNDROME: A STUDY COMPARING EPISODIC AND SEMANTIC MEMORY

Céline Souchay, LPNC UMR 5105, Université Grenoble-Alpes, France
Laurène Gourisse, LEAD, UMR 5011, Dijon, France

Brigitte Mignot, Magali Avila and Anne-Marie Bertrand, Encodrinologie Pédiatrique, CHU Besançon, France
Laurène Faivre, Centre de Génétique, CHU Dijon, France

OBJECTIVES

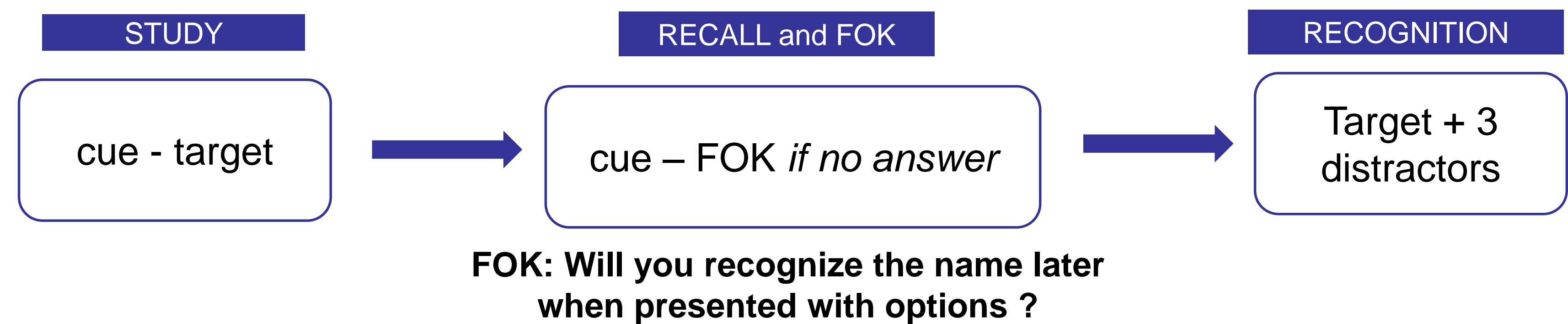
Turner syndrome (TS) is associated with a distinctive cognitive profile including memory impairment for visual material (Lawrence et al., 2003).

The current study focuses on **metamemory**, defined as our knowledge about our memory function (Flavell, 1977) which is, as yet unexplored in TS.

The aim of this preliminary study was thus to determine **what patients with TS know about their memory function** - when their memory is impaired are they aware of that impairment?

METHODS

To assess **metamemory**, this study focused on the **Feeling-of-knowing paradigm (FOK)**. This paradigm consists of asking participants to predict whether or not they will be able to recognize later an information that they currently *cannot* recall.



EPISODIC MEMORY CONDITION

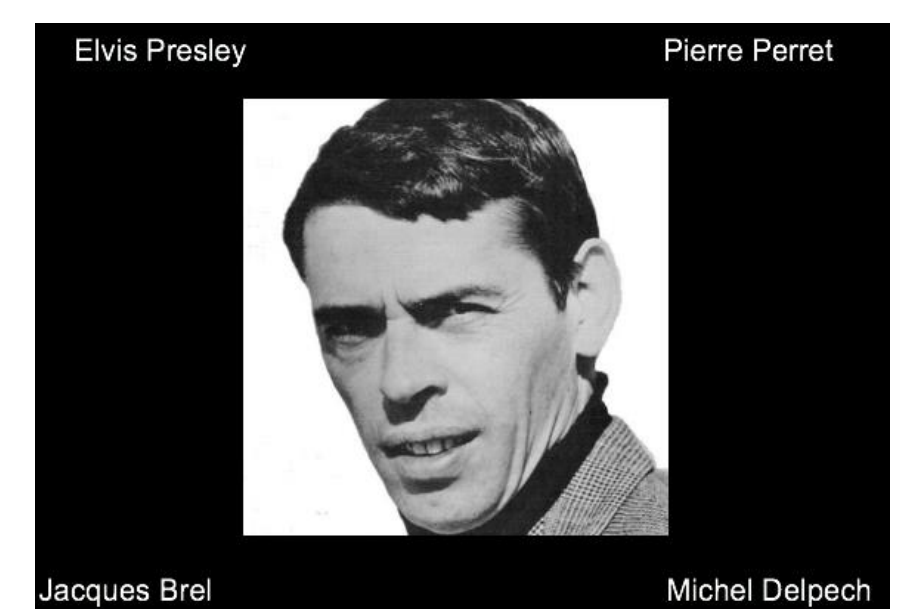
Aim: to assess metamemory knowledge on newly learnt information



30 face-name associations to learn

SEMANTIC MEMORY CONDITION

Aim: to assess metamemory knowledge on general knowledge



30 famous names to recall

PARTICIPANTS

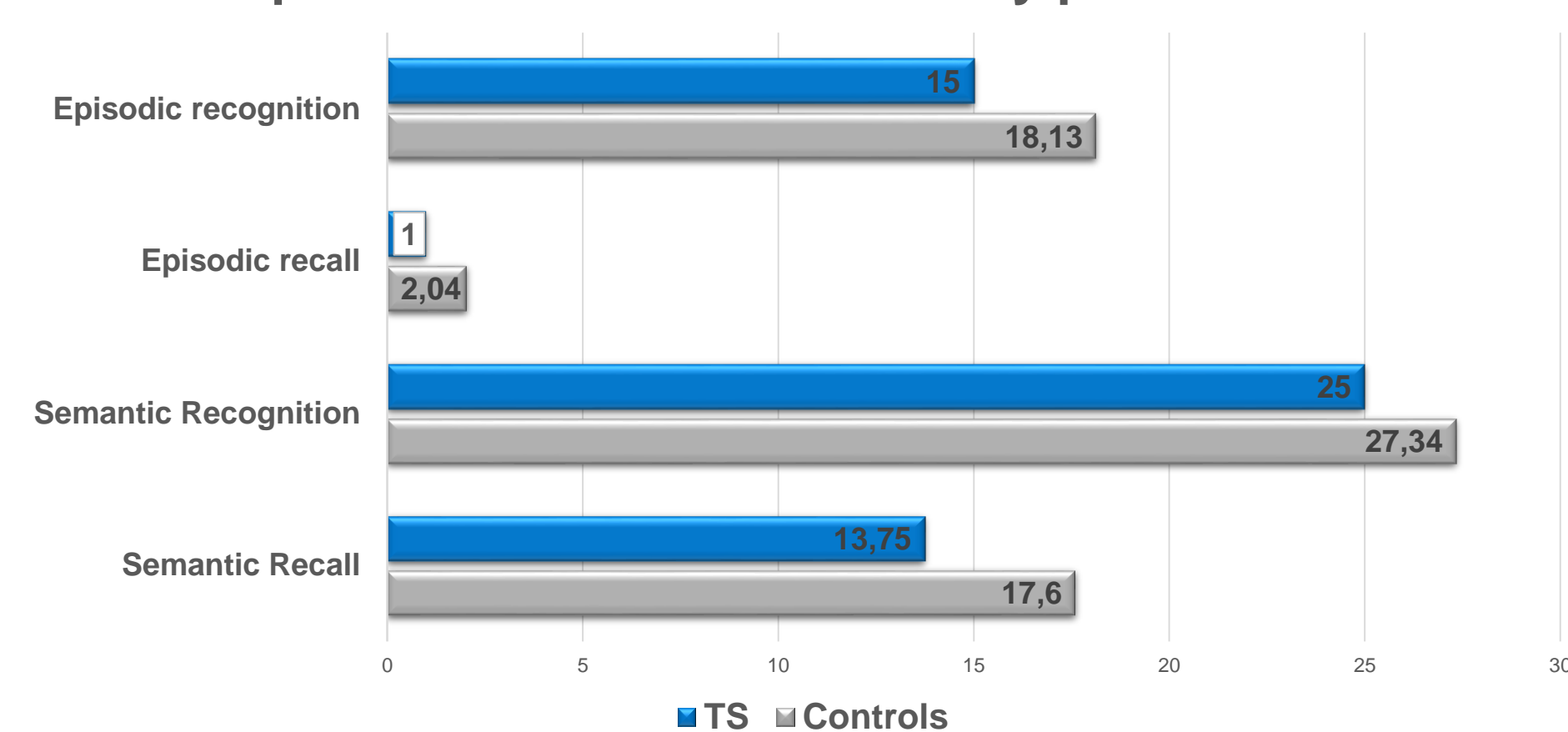
	TS group (n=9)	Control group (n=23)
Age	24.81 (9.74)	20.49 (1.95)
IQ (WAIS-IV) Verbal scales		
Similarities	11.5 (1.51)	12.5 (2.86)
Vocabulary	12.75 (4.56)	10.91 (3.23)
Arithmetic	9.86 (3.39)	9.95 (3.03)
IQ (WAIS-IV) Performance scales		
Block design	7.12 (1.96)	9.23 (3.38)
Matrix reasoning	8.62 (2.13)	8.69 (2.77)
Autism spectrum quotient (AQ)	17.75 (7.55)	15.70 (1.34)
Theory of mind	80.32 (14.99)	82.19 (7.26)

Autism spectrum quotient (AQ, Baron-Cohen et al., 2001), Theory of mind (Faux-pas, Baron-Cohen et al., 1999)

No group differences in Age, IQ, Autism spectrum Quotient, or Theory of mind scores

RESULTS

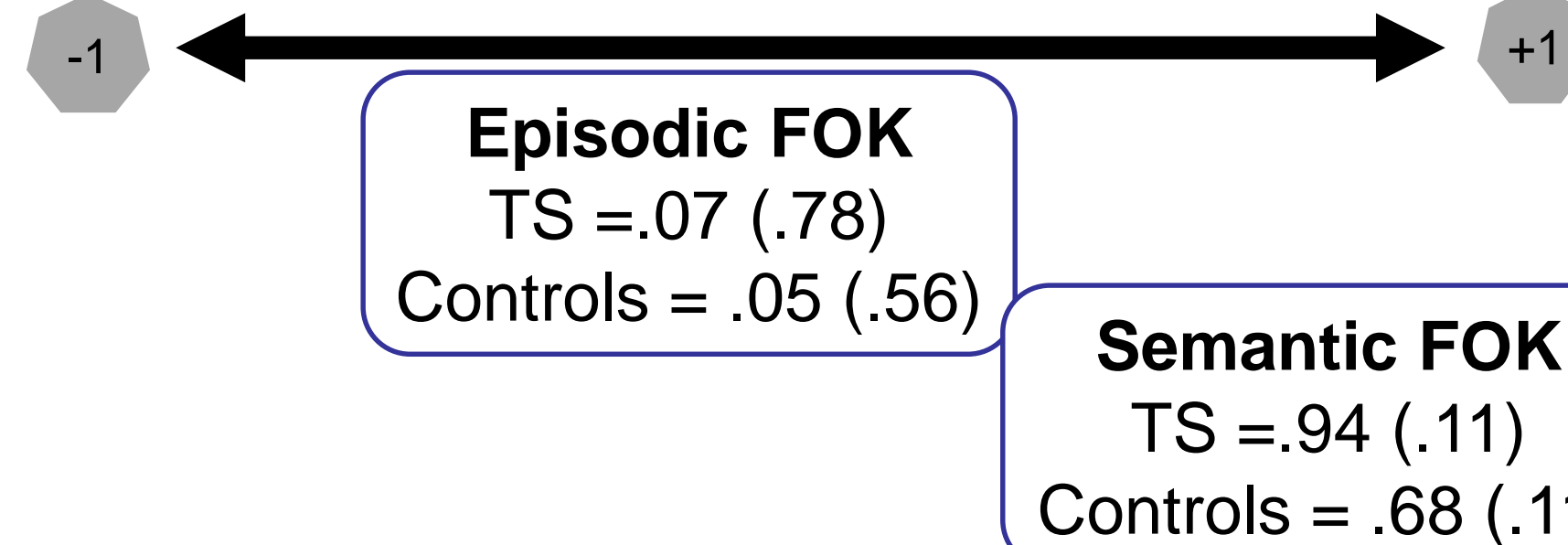
Episodic and Semantic memory performance



Group differences only for Recall of new face-name associations

MEAN FOK ACCURACY

Gamma correlation between FOK judgment and memory performance for each participant



Episodic FOK at chance level
Semantic FOK accurate

No Group differences for metamemory accuracy

CONCLUSIONS

These preliminary results show:

Participants with TS recall fewer new face-name associations but a similar number of famous faces, thus showing a dissociation between episodic and semantic memory. Participants with TS gave accurate Feeling-of-knowing judgments, showing proficient metamemory (intact knowledge of memory function).

Conclusion: Participants with TS have a good insight into their memory performance

Limitations: Floor effect on the episodic recall task, small sample size

Futur research will explore whether participants with TS with Theory of Mind deficits have metamemory deficits; plus the links with academic outcomes.

References

Flavell, J. H., & Wellman, H. M. (1977). Metamemory. In R. V. Kail & J.W. Hagen (Eds.), *Perspectives on the development of memory and cognition* (pp. 3-33). Hillsdale, NJ: Lawrence Erlbaum.

Lawrence, K., Campbell, R., Swettenham, J., Terstegge, J., Akers, R., Coleman, M., & Skuse, D. (2003). Interpreting gaze in Turner syndrome: impaired sensitivity to intention and emotion, but preservation of social cueing. *Neuropsychologia*, 41(8), 894-905.

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