# THEORY OF MIND AND THE FRONTAL LOBES

**To the Editor** – We would like to congratulate Igliori and Damasceno for their excellent article about theory of mind (ToM) and frontal lobes[1]. We have dealed with this object of study during the last ten years[2] and we can conclude that this issue brings to neurology a more mindful perspective of brain disorders, enriching neurological paradigm and extending its frontiers into psychiatry, neuropsychology and cognitive neuroscience, in line with the classical works of Charcot, Ajuriaguerra, and recent works of Damasio and Hodges[3].

We would like to suggest that one plausible reason by what the authors did not find deficits in ToM tasks in the majority of their frontal damaged patients could be because in general these tasks were designed mostly to acess children's theory of mind[4], beeing not sensitive to older subjects.

Another comment refer to the perception that cases presenting disturbances of social behavior are more prone to present ToM deficits is probably true, since ToM ability is fundamental to social life.

Finally, mirror test probably is not sensitive to detect ToM deficits in subjects with unilateral frontal lesions, beeing necessary more extensive lesions affecting orbitofrontal areas in order to manifest the mirror sign. Our PhD thesis also showed that subjects with confabulation as a part of their clinical picture are more prone to develop the mirror sign[5].

## REFERENCES

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**The Author's Reply –** Dear Editor, we would like to thank Caixeta for his valuable commentary on our article. Our first aim was to analyse the complex function of mind reading in its essential components in order to verify which one could be disrupted in patients with frontal lesion. The best way we found to do it was taking into account the developmental aspects of theory of mind (ToM) in children from its first prototypical aspect (e.g., joint attention) to a fully mature ToM capacity as the comprehension of "double bluff". Thus, some of our ToM tasks had been more sensitive to children in early infancy while others had been largely used in studies of adult subjects[1-3].

As regards mirror test, we agree with Caixeta that more extensive lesion could be necessary to produce mirror sign. In fact, we also tested patients with massive bilateral frontal lesion, which could present mirror sign.

Finally, we also agree that ToM deficits would be easier to find in patients with disturbance of social behaviour, as reported in our article. However, the interesting point here could be why we found some patients with extensive medial orbitofrontal lesion without abnormal social behaviour and related ToM impairments, as also found by other authors[4].

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