Reviewer’s report

Title: Developmental heterochrony and the evolution of autistic perception, cognition and behavior

Version: 2 Date: 6 March 2013

Reviewer: Frietson Galis

Reviewer’s report:

The article proposes an original and relevant hypothesis for the evolution and development of autism that is worthy of publication.

It needs to be strengthened in several places:

1- it needs to be discussed how this hypothesis fits with well-known aspects of autism, importantly with the highly genetical component of autism.

2- it needs to be discussed to what extent the 4 sets of phenotypes are independent. This is an especially important issue since it seems that some of these sets may be quite related. However, it can be argued that these are still different ways to approach the problem, but this needs to be clarified.

3- Throughout the article-support(s) the hypothesis/model- should be replaced with the more accurate -is in agreement with.

4- page 9, restricted interests are also characteristic of autistic people with high intelligence

5- page 11 the determination of brain size is not necessarily associated with changes in the degree of local connectivity

6- page 18 (and abstract), the current hypothesis is not necessarily in contrast to the hypothesis that development is fundamentally atypical, due to deviations from early development. It may be causally involved in the abnormal development. Probably it is even in agreement with the hypothesis that the earliest neural changes occur during early embryogenesis.

7- Please discuss to what extent this hypothesis is compatible or not with the extreme male bias hypothesis (or the male predominance of it).

8- page 20 The suggestion that without the proposed hypothesis the evolutionary origin of autism is otherwise inexplicable is not true, see for instance the hypothesis in: Evolutionary approaches to autism. Ploeger & Galis 2011, Mcgill J Med. 2011 Jun;13(2):38. This hypothesis is of course compatible with the current one.

In all a very nice paper, but it needs still substantially more discussion of certain aspects, as indicated.

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a
statistician.

Declaration of competing interests:

I declare that I have no competing interests