

Review of: "The Convergence of Intelligence and Longevity"

Fernando Gomez¹

¹ Universidad de Caldas

Potential competing interests: No potential competing interests to declare.

Title: The Convergence of Intelligence and Longevity

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Reviewer's report:

This is an extensive review of intelligence and its relation with longevity. The review is divided into several sections, the first about longevity in mammals compared with other animals, the second part is more specific about the possible reasons for longevity. The author hypothesized that "in defiance of natural laws" mammals could have long longevity and postulated the basal metabolism rate as a possible reason. The third part shortly describes the relationship between the brain and longevity, and the next part introduces the role of intelligence in human brain development. The fifth part shows topographic aspects of intelligence and describes shortly the neural efficiency theory to support cognitive function. Then in the sixth part, biological correlates of IQ are defined and finished with the intelligence-disease relationship; excessive information is offered in this part, difficult to follow. Thus, this part should be revised to be more clear for readers. In the next part, less dense, the human genome is described with interesting questions about its relationship with intelligence. The author continued with several aspects of genes of longevity, including the ApoE gene and the Foxo genes, with a good presentation of their evidence as longevity genes. Finally, gene distribution is examined, and the author concluded that there are difficulties in looking for one longevity or intelligence gene and proposed the very complex gene networks assembly to explain this relationship. The last part of this review is more clear and precise about the role of genetics in longevity and intelligence. Furthermore, it is helpful to readers unfamiliar with the subject.

The topic of the manuscript is appropriate for the journal. It could be of interest to investigators and clinicians. Furthermore, the rationale and the literature review in the Introduction and the Discussion sections were suitable and provided an adequate background for the study's purpose. The used statistical analysis, figures, and tables are good and suitably complement the results. The paper is well written and well balanced. Overall, with the exception of the correlates of IQ section, the manuscript is easy to read, and the text is concise and logical. The rationale and the literature review through sections were suitable and provided an adequate background for the study purpose. Minor essential revisions are necessary.

Minor essential revisions

Title:

The title is accurate and sufficiently descriptive of the content.

Abstract:

Concise and specific.

Main objective is clear.

Is it clear for all readers whether the phrase “A brain that requires such a long period of development needs a strong supporting cast in the soma” is clear? Please check.

Main text:

The purpose of the article is clearly presented.

Pag 1 The convergence of intelligence & longevity. Please provide references to support all statements in the first paragraph... for example, “the correlations are well known from studies of individuals.” What are these studies?

Page 2. What exactly human genetic potential related to universal longevity means? Please clarify this concept.

Page 2 Longevity, therefore, in historic terms, is life past 40. Please provide a reference to support this.

Page 6 “To be precise, the resilience and longevity of the brain is reflected by the same qualities in the soma” Please provide a reference for this statement.

Page 10 The origins of this striking

observation were epidemiological studies of dementia in Shanghai, France, Italy, Sweden, Finland, Israel, and New York City. Please provide a reference.

References:

All are appropriate and relevant.

Tables and figures:

One figure is shown. It is well presented.

Thanks for letting me review this manuscript.

This could be a nice paper.

Level of interest: An article whose findings are important to those with closely related research interests.

Quality of written English: Well.



Statistical review: No.

Declaration of competing interests:

I declare that I have no competing interests.