

Review of 'Why are modern scientists so dull? How science selects for perseverance and sociability at the expense of intelligence and creativity' (Bruce G. Charlton 2009)

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Research Question: 'Why are so many leading modern scientists intellectually dull and lacking in scientific ambition?' (Charlton 2009, 237)

### Review of results

1. Modern scientists are dull due to educational and career selection of applicants displaying socially acceptable behaviour over those with higher IQ and greater creative capabilities

#### *Strength:*

Charlton brings to the forefront that current selective trends may be hindering scientific progress. Instead of selecting only people who fit a specific model would be useful for the scientific community. Allowing people to be creative (and make mistakes) could help science develop faster.

#### *Weakness:*

- Charlton bases his argument on a controversial idea, yet he begins his paper under the assumption that this premise is an established fact, and expounds upon that without addressing alternative theories.
- He implies that the creative and smart make the best scientists, asserting that the field is being held back by those who are 'lacking in imagination'. However, I would assert that communities need both. The creative and brilliant are essential to advancing science but those who understand and work within culturally accepted social frameworks are necessary as well.
- Charlton speaks of this as a recent trend. While it is more prevalent now than in the past, it is not limited to recent years. Mentioning this as a long-time weakness and its effects could have strengthened his argument.
- There is a lack of citation in second paragraph, making it difficult to judge whether his assertion is a widespread phenomenon or just what he personally has observed.
- There is no definition for key words such as 'dull', 'imaginative', 'interesting', or 'creative'.

2. Current trends in scientific research are too dull to attract creative participants

- ii. Scientific endeavors used to progress much faster but increasing need for further education slows research capabilities.

#### *Strength/weakness:*

- Charlton is very harsh when speaking about the kind of career one can have in the scientific community. This could be taken as either good or bad. His emotional language is not verifiable, and potentially offensive to those who chose that career. However, he may be pointing out the drawback of academics becoming so caught up in presentation (boring or otherwise) that they miss the positive aspects of the paper by dismissing the entire work for aesthetic reasons.

#### *Weakness:*

- Charlton fails to consider in this work that with greater prior knowledge, there will be more to learn, because you are building off of other's work. Additionally, when dealing with certain dangerous elements, caution is needed.

3. The amount of patience and determination needed to survive in the world of modern science is beyond normal capacities, requiring high levels of 'Conscientiousness' and 'Agreeableness'

4. The modern scientists are well suited for ‘normal’ science (being hardworking and technically competent) but not for ‘revolutionary’ science which requires high intelligence and creativity

*Weakness:*

- Charlton provides no explanation for his particular use of ‘revolutionary science’ and the concept of analysing nature through a given ‘paradigm’ (which his work is based off of but does not mention this concept at all). He needs to give a clear definition of the background concepts and methodologies in order to help his audience understand his position and reasoning.
5. The major factors in current educational qualifications are a combination of IQ and conscientiousness. However, IQ and conscientiousness do not often correlate. Due to modern selection favouring conscientiousness, IQ is diminished.
6. Institutions focusing on revolutionary science should be selecting individuals with high IQ and creativity accepting moderately high levels of psychoticism
7. In sum, modern scientists’ favour of individuals with the highest levels of perseverance and social inoffensiveness has hindered scientific progress

### Methods

Charlton provided a concise analysis of the influence of Conscientiousness, Agreeableness, IQ and creativity on current scientific communities. However, he did not consider viable competing theories, especially in consideration of work suggesting that IQ is of greater importance to potential employers than Conscientiousness. Additionally, he did not consider why current ‘boring’ trends in the scientific community are set, leaving his argument without a strong basis.

### Contribution

Though many weaknesses presented themselves throughout the paper, limitations are to be expected whenever a new idea is initially put forth. Additionally, many of the negative aspects of this article’s content could be remedied by restating the argument to allow for other possibilities. It should also be considered that, based on the content of his paper, Charlton may have constructed his arguments in purposeful opposition to the ‘dull’ accepted standard of writing as an example of his argument. Notwithstanding several shortcomings in this article, Charlton does begin an important conversation regarding the downfalls in current paradigms in the scientific community, thereby opening many avenues for future discussion and research.

### Questions for discussion

1. *What if this perceived ‘dullness’ in scientific research is not due to lack of creativity in scientists, but due to another reason? What are some possibilities?*
2. *Why do current trends of ‘boring science’ exist? Are there reasons other than those Charlton proposed?*