**Reviewer's report**

**Title:** Evaluation as evolution: a Darwinian proposal for health policy and systems research

**Version:** 1  
**Date:** 14 November 2014

**Reviewer:** Sarah Morgan-Trimmer

**Reviewer's report:**

- **Major Compulsory Revisions**

This article is interesting in that it discusses the importance of the 'implementation' level of health systems and how change and improvement might occur at this level. It also talks about the important role that evaluation can play in promoting improvements in health system.

The argument has insufficient clarity and specificity as to how the Darwinian concepts can be applied to the analysis and improvement of health systems, and the role evaluation plays in this. The argument also lacks supporting evidence and is therefore not convincing. Therefore the following suggestions are made:

1. The article claims that numerous small choices in implementation can be just as important as overarching policy, for example ‘…even slight improvements over usual outcomes makes these numerous small choices as important a focus for system improvement as policy itself’ (abstract, second paragraph). However, there needs to be a more robust argument about why good implementation strategies are likely to improve health systems as much as or more than policy decisions. A good implementation strategy may not always be enough to improve a health system in some policy environments, including where policy decisions are directly targeting implementation strategies (policy is not always a distinct and unrelated realm from implementation strategies). For example, in the example given of nurses in South Africa, if a national policy of centralising nursing education programmes had been announced, this may have disrupted the spread of good practice described. Furthermore, an implementation strategy may be good but if there is good implementation of a bad policy then the outcome for a health system might be negative. It might be useful to indicate in which circumstances or contexts would implementation strategies improve health systems as much as or more than policy decisions. Or make less expansive claims for the importance of implementation strategies.

2. The article highlights two Darwinian mechanisms: selection and cumulative change. It would be useful to structure the article around these two mechanisms of change more distinctly and to specify the role and relevance of evaluation to these mechanisms more clearly. This could be done firstly by reworking the ‘what does nature tell us about iterative selection?’ section, and putting it directly after the ‘background’ section in order to spell out the conceptual constructs of the article clearly at the beginning. Alternatively, the article could have a section on
each of the two mechanisms and describe the mechanism at the beginning of each section. Secondly, adding definitions of key terms (especially ‘implementation strategy’) and more illustrative examples (hypothetical or real) throughout the article would also help clarify the concepts and their application better. Thirdly, the article could clarify the role of the two mechanisms and evaluation in the improvements in health systems better, as the lack of clarity raised several questions:

- There needs to be a more convincing case made for how evaluation operates in selective breeding mechanisms. Is it always the case that robust evaluation leads to ‘successful choices’? Do bad ideas or approaches always die off, or might they reappear sometimes? There are other factors which influence implementation strategies such as trends, pragmatic factors such as resources etc. Those making decisions about such strategies may be less politically influenced than those at the higher ‘political’ level but they may not be purely rational actors who make choices only based on scientific evidence. Also, factors such as staff turnover means implementing organisations may have short institutional memories and not use evidence for selective breeding in the way described.

- The mechanism of ‘cumulative change’ is not clearly described with respect to implementation strategies e.g. the comments ‘the effects of better implementation choices would be synergistic and cumulative’ (3rd paragraph in ‘Accumulating large lessons from small changes’ section) and ‘better implementation choices could combine into wider delivery approaches’ (last paragraph) are vague. There also seems to be an assumption that cumulative change is an unproblematic and relatively simple process. However, the use of evaluation, even if used extensively, may not result in steady and successful change across a health system because evaluation is not the only or the most important factor in influencing change always (for similar reasons as I’ve commented on in the paragraph above). For example, might some cumulative change processes halt sometimes e.g. if evaluation resources run out? The first paragraph in the ‘background’ section points out that health systems are complex and adaptive and because of this the impact of policy is unpredictable, but the same could be said for the impact of implementation strategies. There are also questions about how ideas find their evolutionary niches in particular contexts and what effect contextual specificity has on the relevance of successful choices for other areas (the latter issue could limit the spread of ideas if they don’t fit in some contexts well and adaptations are not made).

The author must respond to these before a decision on publication can be reached.

- Discretionary Revisions

  - The term ‘head to head’ used a couple of times wasn’t very clear to me in this context and may not be for other readers from some countries
  - The systematic review process in health research is similar to what is being proposed in that it selects studies based on quality criteria and then provides a
summary for policy makers and practitioners (with the aspiration that only evidence based interventions are implemented in future); it might be useful to comment on the relevance of this methodology for ideas about Darwinian selection and cumulative change processes.

• It’s not clear how the authors are proposing the metaphor of Darwinian evolution should be applied and how different that would be from current ideas in use. It would be useful for readers for the article to contain more examples of how ‘heath system thinkers’ can apply the concepts of selection and cumulative change in analysis of implementation or in actual practice, and why it might be more useful than other theoretical approaches such as ‘Diffusion of Innovations’ theory. For example, some implementers would argue that they already select on the basis of evidence in their field and make successive improvements on this basis; what would the Darwinian perspective described here add to this? The article is arguing that evaluations could contribute to wide-ranging improvements across a health system and improve them in this way, but what might implementers want to do in order to make this happen, or what might evaluators want to collect data on in order to analyse these kinds of processes?

These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

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

Quality of written English: Acceptable

Declaration of competing interests:

I declare that I have no competing interests