

Review of: "Femmes finales: natural selection, physiology, and the return of the repressed"

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Many scholars (e.g., Kim Sterelny, 2007, *Dawkins vs. Gould*, Icon Books) have highlighted a difference between an American and a British tradition in conceiving the central problem of evolutionary biology as either explaining biodiversity or explaining adaptation.

David Haig's analysis of the history of teleological/teleonomic explanations of *adaptation* has been novel and valuable to me. In section 5, however, he reaches Gould and Lewontin (1979, 'The Spandrels of San Marco and the Panglossian paradigm.' *Proc R Soc Lond B*, 205(1161), 581-598) and the critique of the adaptationist program.

In my opinion, this issue should have been set in the context of the American tradition of explaining diversity and emphasizing that the critics insisted that a lot of the diversity of life is due to forces other than natural selection (e.g., genetic drift). This might have helped some readers/commenters getting over the apparent break in the article (e.g., Santiago Ginnobili lamented a "change of register" at this point of the article).

On thinking about it, I have a historical observation to share, that might be found useful in the context of the adaptationist program and its critics. As far as I understood Darwin, he regarded his *principle of divergence* as of equal importance to his theory as the *principle of natural selection*. At least, he seems to have done so up to the reception of his *Origin of Species*, which seems to have ignored this principle almost entirely. In combination with natural selection, Darwin's principle of divergence was a cause for diversity. This could be translated or likened to what current evolutionary biologists would call disruptive selection. That is, Darwin originally conceived natural selection + principle of divergence to truly be the cause of both adaptation and diversity. Unfortunately, the principle of divergence has been all but forgotten.

Some references concerning Darwin's principle of divergence:

Mallet, J. (2008). Mayr's view of Darwin: was Darwin wrong about speciation? *Biological Journal of the Linnean Society*, 95(1), 3-16.

Richards, R. J. (2012). Darwin's principles of divergence and natural selection: Why Fodor was almost right. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, 43(1), 256-268.

Partridge, D. (2018). Darwin's two theories, 1844 and 1859. *Journal of the History of Biology*, 51(3), 563-592.

Dagg, J. L. (2018). Comparing the respective transmutation mechanisms of Patrick Matthew, Charles Darwin and Alfred Wallace. *Biological Journal of the Linnean Society*, 123(4), 864-878.