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**Contribution of Distal-less to quantitative variation in butterfly eyespots.**

Beldade P, Brakefield PM, Long AD

*Nature* 2002 Jan 17 **415**(6869):315-8 [[abstract on PubMed](#)] [[related articles](#)]

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**Selected by** | Greg Gibson / David Stern / Patricia Simpson

First evaluation 24 Jan 2002 | Latest evaluation 18 Feb 2002

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**Faculty Comments**

**Faculty Member**

**Greg Gibson**

North Carolina State University, United States  
 DEVELOPMENTAL BIOLOGY

New Finding

**Comments**

**This paper supplies one of the first demonstrations that quantitative variation attributable to a specific gene contributes to morphological variation of adaptive significance.** Previous studies had shown that the gene *distal-less* is required for butterfly eyespot determination, and that there is genetic variation for this trait. The authors provide strong evidence for linkage of alleles of *distal-less* to eyespot size in a series of backcrosses between divergently selected lines of *Bicyclus anynana*.

Evaluated 18 Feb 2002

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**David Stern**

Princeton University, United States  
 DEVELOPMENTAL BIOLOGY

New Finding

**This paper provides the first link between quantitative variation in butterfly eyespots, which is the source of evolutionary change, and a particular developmental gene.** The contribution of variation at the *Distal-less* locus indicates that highly conserved developmental genes may contribute to naturally occurring phenotypic variation. This study points the way towards a deeper understanding of the links between evolution and development.

Evaluated 30 Jan 2002

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**Patricia Simpson**

University of Cambridge, United Kingdom  
 DEVELOPMENTAL BIOLOGY

New Finding

**This paper demonstrates that DNA polymorphisms at the *Distal-less* gene contribute to the quantitative variation observed in the morphology of eyespot colours in a butterfly.** This provides a link between genetic pathways involved in development and genes contributing to quantitative variation.

Evaluated 24 Jan 2002

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