

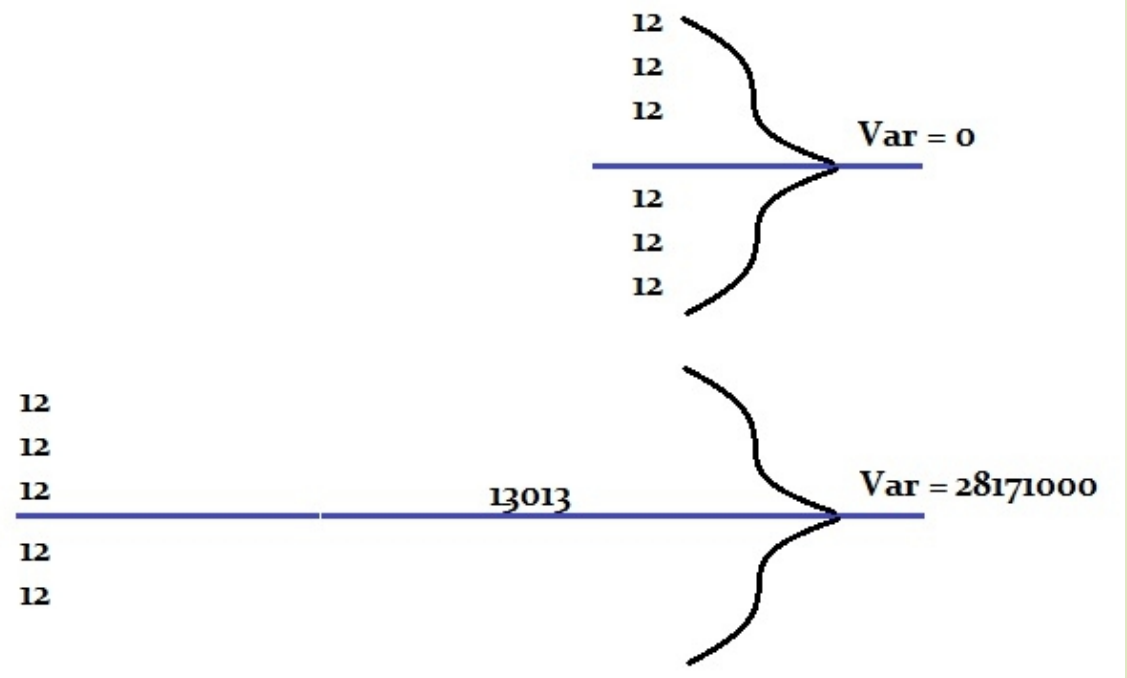


Fisher – Kolmogorov – Petrovsky – Piskunov Equation

Srinivas Setty

Ronald Fisher: 1890 - 1962







Sir Ronald A. Fisher

Statistical Methods
for Research Workers

14th Edition

Statistical Methods for
Research Workers

BY

R. A. FISHER, M.A.

*Fellow of Gonville and Caius College, Cambridge
Chief Statistician, Rothamsted Experiment Station*

OLIVER AND BOYD

EDINBURGH: TWEEDDALE COURT

LONDON: 33 PATERNOSTER ROW, E.C.

1925



The
Design of Experiments

By

R. A. Fisher, Sc.D., F.R.S.

Formerly Fellow of Gonville and Caius College, Cambridge
Honorary Member, American Statistical Association
and American Academy of Arts and Sciences
Galton Professor, University of London

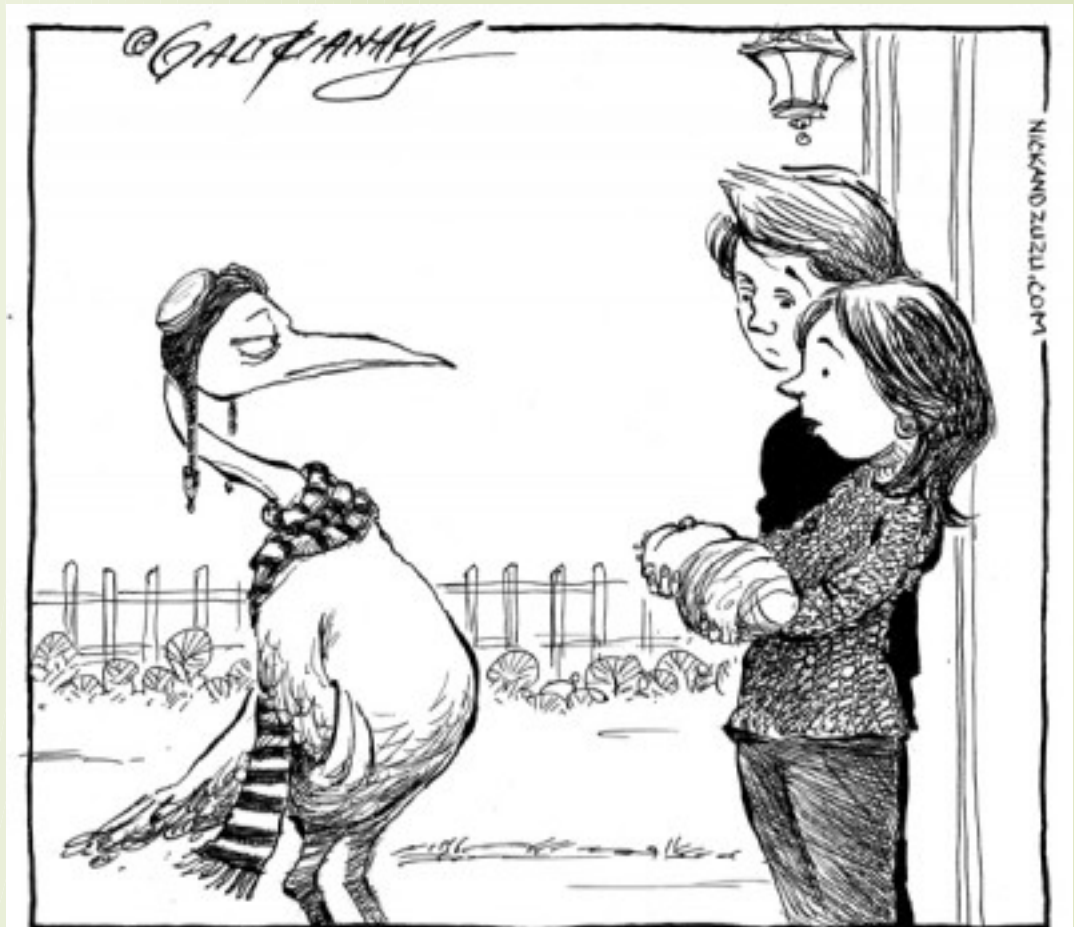
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Oliver and Boyd

Edinburgh: Tweeddale Court
London: 33 Paternoster Row, E.C.

1935

Null Hypothesis: Hypothesis stating
that there is no statistically
significant difference between two
data sets



JUST CONFIRMING, YOU DID GET HIM FROM THE "FUTURE COLLEGE GRADUATE" SECTION, RIGHT?

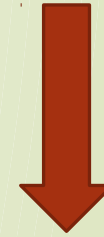


Kpp Equation: Diffusion and Reaction

$$\frac{du}{dt} = k \frac{d^2u}{dx^2} + f(u)$$

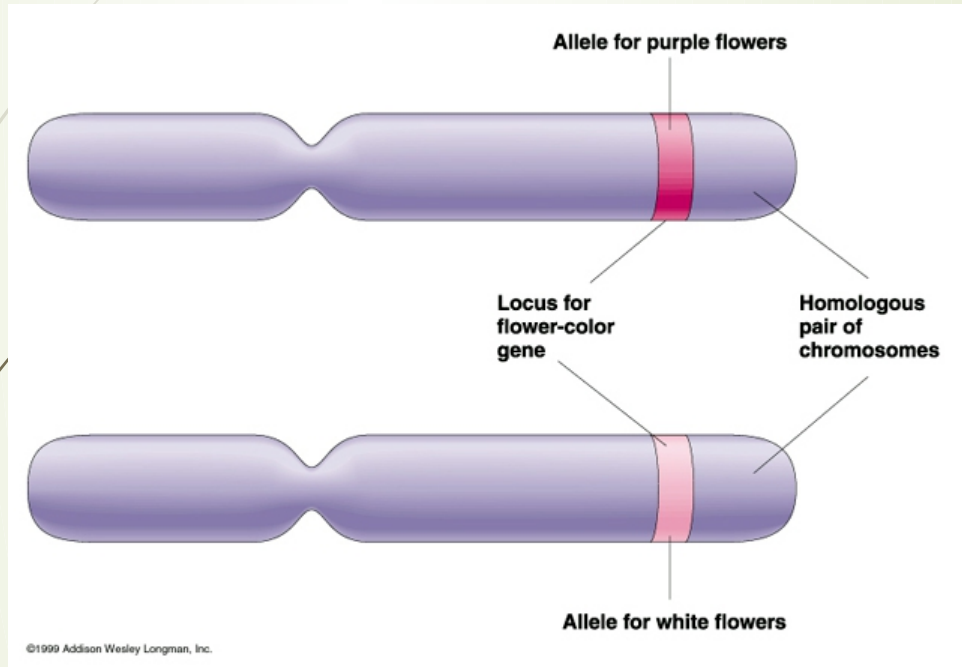


“Diffusion”



“Reaction”

Fisher-KPP Equation: Advantageous Genes

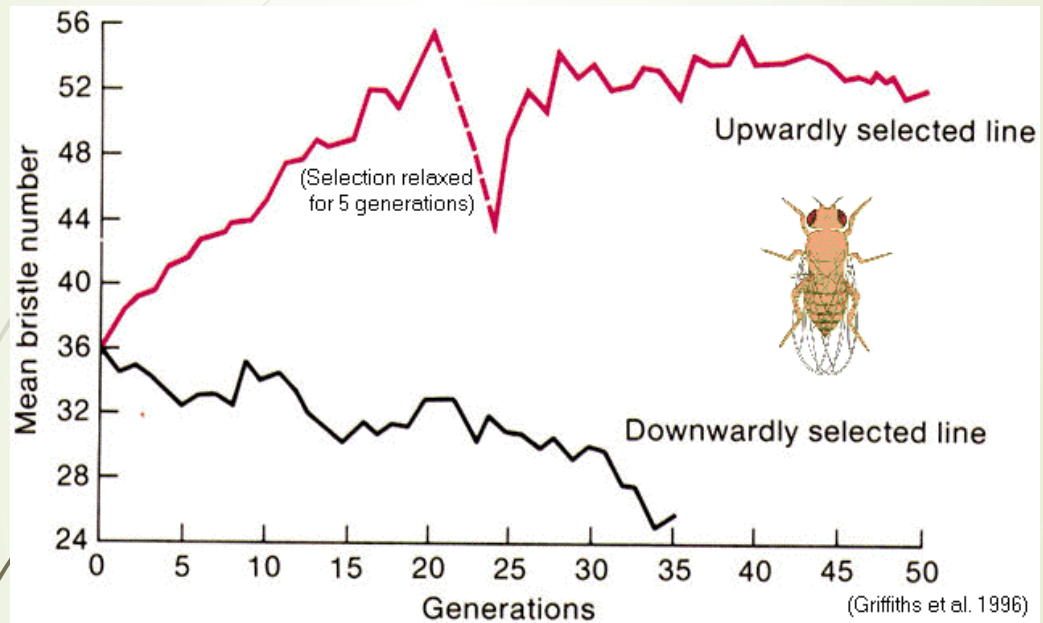


Fisher-KPP Equation: Mathematical Basis to Gene Diffusion

$$\frac{dp}{dt} = k \frac{d^2p}{dx^2} + mpa$$

- ▶ p – frequency of mutant allele
- ▶ q – frequency of parent allele
- ▶ m – intensity of selection in favor of the mutant gene
- ▶ $k(dp/dx)$ – Rate of allelic diffusion spatially over population boundaries
- ▶ k – diffusion constant unique to allele and species
- ▶ $k(dp/dx)$ – Rate of allelic diffusion spatially over population boundaries
- ▶ k – diffusion constant unique to allele and species

Applications



Fisher-KPP equations and applications to a model in
medical sciences

Benjamin CONTRI *

Aix Marseille Université, CNRS, Centrale Marseille
Institut de Mathématiques de Marseille, UMR 7373, 13453 Marseille, France



References

- ▶ <https://www.famousscientists.org/ronald-fisher/>
- ▶ Fisher, R. A. “The Wave Of Advance Of Advantageous Genes.” *Annals of Eugenics*, vol. 7, no. 4, 1937, pp. 355–369., doi:10.1111/j.1469-1809.1937.tb02153.x.