

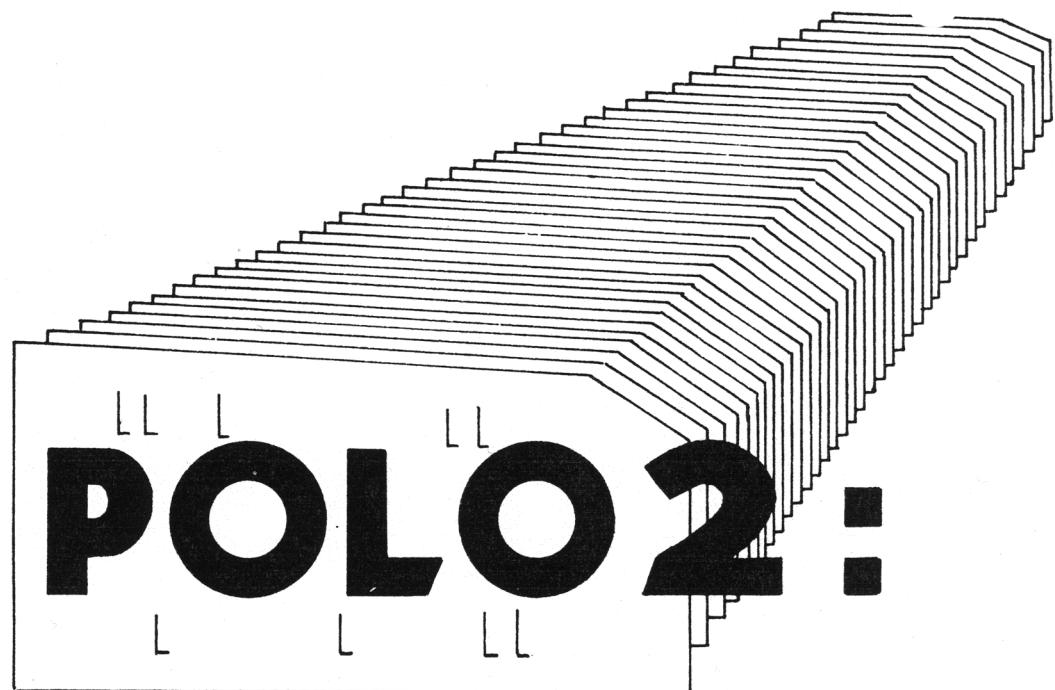


United States
Department of
Agriculture

Forest Service

Pacific Southwest
Forest and Range
Experiment Station

General Technical
Report PSW- 55



a user's guide to multiple Probit Or L0git analysis

Robert M. Russell,

N. E. Savin,

Jacqueline L. Robertson

Authors:

ROBERT M. RUSSELL has been a computer programmer at the Station since 1965. He was graduated from Graceland College in 1953, and holds a B.S. degree (1956) in mathematics from the University of Michigan. **N. E. SAVIN** earned a B.A. degree (1956) in economics and M.A. (1960) and Ph.D. (1969) degrees in economic statistics at the University of California, Berkeley. Since 1976, he has been a fellow and lecturer with the Faculty of Economics and Politics at Trinity College, Cambridge University, England. **JACQUELINE L. ROBERTSON** is a research entomologist assigned to the Station's insecticide evaluation research unit, at Berkeley, California. She earned a B.A. degree (1969) in zoology, and a Ph.D. degree (1973) in entomology at the University of California, Berkeley. She has been a member of the Station's research staff since 1966.

Acknowledgments:

We thank Benjamin Spada and Dr. Michael I. Haverty, Pacific Southwest Forest and Range Experiment Station, U.S. Department of Agriculture, Berkeley, California, for their support of the development of POLO2.

Publisher:

**Pacific Southwest Forest and Range Experiment Station
P.O. Box 245, Berkeley, California 94701**

September 1981

POLO 2:

a user's guide to multiple Probit Or L0git analysis

Robert M. Russell,

N. E. Savin,

Jacqueline L. Robertson

CONTENTS

Introduction	1
1. General Statistical Features.....	1
2. Data Input Format	2
2.1 Starter Cards	2
2.2 Title Card	2
2.3 Control Card	3
2.4 Transformation Card	4
2.4.1 Reverse Polish Notation	4
2.4.2 Operators.....	4
2.4.3 Operands	4
2.4.4 Examples	4
2.5 Parameter Label Card	5
2.6 Starting Values of the Parameters Card	5
2.7 Format Card	5
2.8 Data Cards	5
2.9 End Card	6
3. Limitations	6
4. Data Output Examples	6
4.1 Toxicity of Pyrethrum Spray and Film	6
4.1.1 Models	6
4.1.2 Hypotheses	6
4.1.3 Analyses Required	7
4.1.4 Input	7
4.1.5 Output	9
4.1.6 Hypotheses Testing	19
4.1.7 Comparison with Published Calculations	19
4.2 Vaso-Constriction	19
4.2.1 Models, Hypothesis, and Analyses Required	19
4.2.2 Input	19
4.2.3 Output	20
4.2.4 Hypothesis Testing.....	21
4.3 Body Weight as a Variable: Higher Order Terms	25
4.3.1 Models and Hypothesis.....	25
4.3.2 Input	25
4.3.3 Output	26

4.4 Body Weight as a Variable: PROPORTIONAL Option	29
4.4.1 Models and Hypotheses	29
4.4.2 Input	29
4.4.3 Output	30
4.4.4 Hypothesis Testing.....	30
4.5 Body Weight as a Variable: BASIC Option	30
4.5.1 Input	33
4.5.2 Output	33
5. Error Messages	36
6. References	37