

**CURRICULUM VITAE**  
**KENNETH BOLLEN**  
**September 2004**

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**Work:**

Department of Sociology  
CB #3210, Hamilton Hall  
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**CURRENT POSITIONS**

- 2002- Henry Rudolph Immerwahr Distinguished Professor, Department of Sociology,  
University of North Carolina, Chapel Hill, NC.
- 2000- Director, Odum Institute for Research in Social Science, University of North Carolina,  
Chapel Hill, NC.
- 1996- Adjunct Professor of Statistics, University of North Carolina, Chapel Hill, NC.
- 1995- Fellow, Carolina Population Center, University of North Carolina, Chapel Hill, NC.
- 1993- Member of Statistical Core, Carolina Population Center, University of North Carolina,  
Chapel Hill, NC.
- 1980- Lecturer for Inter-university Consortium for Political and Social Research (ICPSR)  
Summer Training Program in Advanced Statistical Techniques. University of  
Michigan, Ann Arbor, MI.

**EDUCATION**

- 1977 Ph.D. in Sociology, Brown University, Providence, Rhode Island.
- 1975 M.A. in Sociology, Brown University, Providence, Rhode Island.
- 1973 B.A. Drew University, Madison, NJ  
Major: Sociology Minor: Mathematics



## HONORS AND AWARDS

2002 Named one of the World's Most Cited Authors in the General Social Science literature by the *Institute for Scientific Information (ISI)* for 1981-1999.

*Henry Rudolph Immerwahr Distinguished Professor*, University of North Carolina at Chapel Hill, 7/1/02.

*Paul F. Lazarsfeld Memorial Award* for Distinguished Contributions in the Field of Sociological Methodology. August, 2000. American Sociological Association (Methodology Section), Washington, DC.

*Mentoring Award*, 1999-2000. Sociology Graduate Student Association. University of North Carolina, Chapel Hill, NC.

*Zachary Smith Professorship*, University of North Carolina at Chapel Hill, 7/1/96 to 6/30/01.

*Fellowship Award*, Center for Advanced Study in the Behavioral Sciences. Stanford, California. Notification May, 1990, Fellow 1993-1994.

*Excellence in Teaching, 1986-87*. Inaugural Annual Award by Sociology Graduate Students, The University of North Carolina at Chapel Hill

*Excellence in Teaching, 1988-89*. Third Annual Award by Sociology Graduate Students, The University of North Carolina at Chapel Hill

Sociological Research Association member.

Who's Who Among Young American Professionals.

## OTHER PROFESSIONAL EXPERIENCE

1996-2001 Zachary Smith Professor of Sociology, University of North Carolina, Chapel Hill, NC.

1997-2000 Director of Graduate Studies, Department of Sociology, University of North Carolina, Chapel Hill, NC.

1995-1999 Elected Term on Interuniversity Consortium for Political and Social Research

(ICPSR) Council. University of Michigan, Ann Arbor, MI.  
 Council represents over 300 university/college members of ICPSR.

- 1993-1994 Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford, California.
- 1991-1995 Social Science Analyst, EVALUATION Project - USAID, Carolina Population Center, University of North Carolina, Chapel Hill, NC.
- 1989-96 Professor, Department of Sociology, University of North Carolina, Chapel Hill, NC.
- 1985-89 Associate Professor, Department of Sociology, University of North Carolina, Chapel Hill, North Carolina.
- 1982-85 Assistant Professor, Department of Sociology, Dartmouth College, Hanover, NH
- 1981-85 Consultant for Institute of Gerontology, Wayne State University, Detroit, MI.
- 1981-82 Staff Research Scientist. Societal Analysis Department, General Motors Research Laboratories, Warren, MI.
- Member of Interdisciplinary research group. Responsible for design and implementation of a number of projects. For partial list of project areas see "Research Publications" section.
- 1980-81 Senior Research Scientist, Societal Analysis Department, General Motors Research Laboratories. es. (See above)
- 1977-80 Associate Senior Research Scientist. (See above.)
- 1981, 1984, 1987, 1990- ICPSR Summer Training Program Planning Committee, University of Michigan.

## BOOKS

**Bollen, K.A.** and P. J. Curran. Forthcoming. *Latent Curve Models: A Structural Equation*

*Approach*. Wiley Series in Probability and Mathematical Statistics. New York: Wiley.

**Bollen, K. A.** 1989. *Structural Equations with Latent Variables*. Wiley Series in Probability and Mathematical Statistics. New York: Wiley, 514 pages

**Bollen, K.A.** and J.S. Long (eds). 1993. *Testing Structural Equation Models*. Newbury Park, CA: Sage, 320 pages.

#### **PUBLISHED PAPERS**

**Bollen, K.A.** and P.J. Curran. 2004. "Autoregressive Latent Trajectory (ALT) Models: A Synthesis of Two Traditions." *Sociological Methods and Research* 32:336-83.

Hipp, J., D.J. Bauer, and **K. A. Bollen**. Accepted for publication. "Conducting Tetrad Tests of Model Fit and Contrasts of Tetrad-Nested Models: A New SAS Macro." *Structural Equation Modeling*.

**Bollen, K.A.** and D.J. Bauer. 2004. "Automating the Selection of Model-Implied Instrumental Variables." *Sociological Methods and Research* 32:425-52.

Biesanz, J., N. Deeb-Sossa, A. Papadakis, **K. A. Bollen**, and P. Curran. 2004. "The Role of Coding Time in Estimating and Interpreting Growth Curve Models." *Psychological Methods* 9:30-52.

Hipp, J., D.J. Bauer, P.J. Curran, and **K. A. Bollen**. 2004. "Crimes of Opportunity or Crimes of Emotion? Testing Two Explanations of Seasonal Change in Crime." *Social Forces* 82:1333-1372.

Curran, P.J., **K. A. Bollen**, F. Chen, P. Paxton, & J. Kirby. 2003. "Finite sampling properties of the RMSEA: Point estimates and confidence intervals." *Sociological Methods and Research* 32:208-52.

Hipp, J. and **K. A. Bollen**. 2003. "Model Fit in Structural Equation Models with Censored, Ordinal, and Dichotomous Variables: Testing Vanishing Tetrads." *Sociological Methodology* 2003. 33: 267-305.

**Bollen, K. A.**, Christ, S. L., and Hipp, J. R. Accepted for publication. "Growth Curve Model." In Michael Lewis-Beck, Alan Bryan and Tim Futing Liao (eds.), *Encyclopedia of Social Science Research Methods*. Thousand Oaks, CA: Sage.

- Paxton, P., **K. A. Bollen**, D. Lee, and H. Kim. 2003. "A Half Century of Suffrage: New Data and a Comparative Analysis." *Studies in Comparative International Development* 38:93-122.
- Paxton, P. and **K. A. Bollen**. 2003. "Perceived Quality and Methodology in Graduate Department Ratings: The Case of Sociology, Political Science, and Economics." *Sociology of Education* 76:71-88
- Bollen, K.A.** 2002. "Latent Variables in Psychology and the Social Sciences." *Annual Review of Psychology* 53:605-34.
- Bollen, K.A.**, J. Glanville, and G. Stecklov. 2002. "Economic Status Proxies in Studies of Fertility in Developing Countries: Does the Measure Matter?" *Population Studies* 56:81-96.
- Bollen, K.A.** and J. Biesanz. 2002. "A Note on a Two Stage Least Squares (2SLS) Estimator for Higher Order Factor Analysis." *Sociological Methods & Research* 30:568-79.
- Bollen, K. A.** 2001 (print) 2002 (electronic). "Indicator: Methodology." Pages 7282-7287 in Neil J. Smelser and Paul B. Baltes (editors-in-chief). *International Encyclopedia of the Social and Behavioral Sciences*. Oxford, U.K.:Elsevier Science.
- Curran, P.J., **K. A. Bollen**, P. Paxton, J. Kirby, & F. Chen. 2002. "The Noncentral chi-square distribution in misspecified structural equation models: Finite sample results from a Monte Carlo simulation." *Multivariate Behavioral Research* 37:1-36.
- Bollen, K. A.**, J. Glanville, and G. Stecklov. 2001. "Socioeconomic Status and Class In Studies of Fertility And Health in Developing Countries." *Annual Review of Sociology* 27:153-85.
- Bollen, K.A.** 2001. "Two-stage Least Squares and Latent Variable Models: Simultaneous Estimation and Robustness to Misspecifications." Pages 119-38 in Robert Cudeck, Stephen Du Toit, and Dag Sörbom (eds), *Structural Equation Modeling: Present and Future, A Festschrift in Honor of Karl Jöreskog*. Lincoln, IL:Scientific Software.
- Curran, P. J. and **K. A. Bollen**. 2001. "The Best of Both Worlds: Combining Autoregressive and Latent Curve Models." Pages 107-35 in L. Collins and A. Sayer (eds), *New Methods for the Analysis of Change*. Washington, DC: American Psychological Association.
- Paxton, P.M., P. Curran, **K. A. Bollen**, J. Kirby, and F. Chen. 2001. "Monte Carlo Simulations

- in Structural Equation Models.” *Structural Equation Modeling* 8:287-312.
- Chen, F., **K. A. Bollen**, P. Paxton, P. Curran, and J. Kirby. 2001. “Improper Solutions in Structural Equation Models: Causes, Consequences, and Strategies.” *Sociological Methods & Research* 29:468-508.
- Speizer, Ilene and **K. A. Bollen**. 2000. “How Well Do Perceptions Of Family Planning Service Quality Correspond To Objective Measures? Evidence From Tanzania.” *Studies in Family Planning* 31:163-177.
- Bollen, K.A.** and Kwok-fai Ting. 2000. “A Tetrad Test for Causal Indicators.” *Psychological Methods* 5:3-22
- Bollen, K.A.** and P. Paxton. 2000. "Subjective Measures of Liberal Democracy." *Comparative Political Studies* 33:58-86.
- Mroz, T., **K. A. Bollen**, I. Speizer, and D. Dominic. 1999. "Quality, Accessibility, and Contraceptive Use in Rural Tanzania." *Demography* 36:23-40.
- Bollen, K. A.** and Juan Diez Medrano. 1998. "Who are the Spaniards? Nationalism and Identification in Spain." *Social Forces* 77:587-621.
- Bollen, K.A.** and P. Paxton. 1998. "Detection and Determinants of Bias in Subjective Measures." *American Sociological Review* 63:465-78.
- Bollen, K.A.** and Kwok-fai Ting. 1998. "Bootstrapping a Test Statistic for Vanishing Tetrads." *Sociological Methods and Research* 27:77-102.
- Bollen, K.A.** 1998. "Structural Equation Models." Pages 4363-4372 in *Encyclopedia of Biostatistics*. P. Armitage and T. Colton (editors-in chief) Sussex, England:John Wiley.
- Bollen, K.A.** 1998. "Path Analysis." *Encyclopedia of Biostatistics*. P. Armitage and T. Colton (editors-in-chief) Sussex, England:John Wiley.
- Bollen, K. A.** 1998. "LISREL Models." *Encyclopedia of Biostatistics*. P. Armitage and T. Colton (editors-in-chief) Sussex, England:John Wiley.
- Bollen, K.A.** and Pamela Paxton. 1998. "Interactions of Latent Variables in Structural Equation Models." *Structural Equation Modeling* 5:267-93. Reprinted as "Two-Stage Least Squares Estimation of Interaction Effects", pages 125-51 in R.E. Schumacker and G.A. Marcoulides (eds), 1998, *Interaction and Nonlinear Effects in Structural Equation*

- Modeling*, Mahwah, NJ:Lawrence Erlbaum.
- Bollen, K.A.** and Pamela Paxton. 1997. "Democracy Before Athens." Pages 13-44 in M. Midlarsky (ed) *Inequality and Democracy*. NY:Cambridge University Press.
- Slifkin, Rebecca, Kerry E. Kilpatrick, Matthew C. Johnsen, and **Kenneth A. Bollen**. 1997. "A Resident-Based Reimbursement System for Intermediate Care Facilities for the Mentally Retarded." *Health Care Financing Review* 18:61-72.
- Bollen, K.A.** 1996. "An Alternative 2SLS Estimator for Latent Variable Models." *Psychometrika*, 61:109-21.
- Bollen, K.A.** 1996. "A Limited-Information Estimator for LISREL Models With and Without Heteroscedastic Errors." Pages 227-41 in George Marcoulides and Randy Schumacker (eds). *Advanced Structural Equation Modeling Techniques*. Mahwah, NJ:Erlbaum.
- Bollen, K.A.**, D. Guilkey, and T. Mroz. 1995. "Binary Outcomes and Endogenous Explanatory Variables: Tests and Solutions with an Application to the Demand for Contraceptive Use in Tunisia." *Demography* 32: 111-131.
- Bollen, K.A.**, 1995. "Structural Equation Models that are Nonlinear in Latent Variables: A Least Squares Estimator." *Sociological Methodology* 25:223-51.
- Bollen, K.A.**, 1995. "Measures of Political Democracy." Pages 817-21 in Seymour Martin Lipset (ed.) *The Encyclopedia of Democracy*. Washington, D.C.: Congressional Quarterly.
- Bollen, K.A.** and S. Appold. 1993. "National Industrial Structure and the Global System." *American Sociological Review*, 58:283-301.
- Bollen, K.A.** 1993. "Liberal Democracy: Validity and Method Factors in Cross-National Measures." *American Journal of Political Science*, 37:1207-1230.
- Bollen, K.A.** and K. Ting. 1993. "Confirmatory Tetrad Analysis." *Sociological Methodology* 23:147-75.
- Bollen, K.A.**, B. Entwisle, and A. Anderson. 1993. "Macrocomparative Research Methods." *Annual Review of Sociology*. 19:321-351.
- Bollen, K.A.** and J.S. Long (eds.). 1992. Tests for Structural Equation Models. Special issue of *Sociological Methods & Research*, 21, November, pages 123-282.

- Bollen, K.A.** and R. Stine. 1992. "Bootstrapping Goodness of Fit Measures in Structural Equation Models." *Sociological Methods and Research*, 21:205-229. Reprinted in K.A. Bollen and J.S. Long (eds.) 1993. *Testing Structural Equation Models*.
- Bollen, K.A.** and G. Arminger. 1991. "Observational Residuals in Factor Analysis and Structural Equation Models." *Sociological Methodology* 21:235-62.
- Bollen, K.A.** and R. Lennox. 1991. "Conventional Wisdom on Measurement: A Structural Equation Perspective." *Psychological Bulletin*, 110: 305-314.
- Bollen, K.A.** and R. Hoyle. 1990. "Perceived Cohesion: A Conceptual and Empirical Examination." *Social Forces* 69:479-504.
- Bollen, K.A.** 1990. "Political Democracy: Conceptual and Measurement Traps." *Studies in Comparative International Development* 25:7-24. Reprinted in *On Measuring Democracy* edited by Alex Inkeles (1991).
- Bollen, K.A.** and Robert Stine. 1990. "Direct and Indirect Effects: Classical and Bootstrap Estimates of Variability." *Sociological Methodology* 20:115-140.
- Bollen, K.A.** and Robert Jackman. 1990. "Regression Diagnostics: An Expository Treatment of Outliers and Influential Cases." Pages 257-291 in J. Fox and J. Scott Long (eds.) *Modern Methods of Data Analysis*, Newbury Park, CA: Sage. (Revised version of 1985 SMR paper).
- Bollen, K.A.** 1990. "Overall Fit in Covariance Structure Models: Two Types of Sample Size Effects." *Psychological Bulletin*, 107:256-259.
- Bollen, K.A.** and Robert Jackman. 1989. "Democracy, Stability, and Dichotomies." *American Sociological Review*, 54: 612-621.
- Bollen, K.A.** 1989. "A New Incremental Fit Index for General Structural Equation Models." *Sociological Methods and Research*, 17:303-316.
- Bollen, K.A.** and J. Liang. 1988. "Some Properties of Hoelter's CN." *Sociological Methods and Research* 16:492-503.
- Bollen, K.A.** 1987. "World System Status and Development Status: Overfitting or Proxy Variables?" *International Journal of Comparative Sociology* 28:75-79.

- Bollen, K.A.** 1987. "Total, Direct, and Indirect Effects in Structural Equation Models." *Sociological Methodology* 17:37-69.
- Bollen, K.A.** 1987. "Outliers and Improper Solutions: A Confirmatory Factor Analysis Example." *Sociological Methods and Research* 15:375-84.
- Bollen, K.A.** and R. Schwing. 1987. "Air Pollution-Mortality Models: A Demonstration of the Effects of Measurement Error." *Quality and Quantity* 21:37-48.
- Liang, J., R.H. Lawrence, and **K. A. Bollen**. 1987. "Race Differences in Two Measures of Subjective Well-Being." *Journal of Gerontology* 42:426-28.
- Bollen, K.A.** 1987. "Structural Equation Approaches to Subjective Air Quality." pp. 57-72 in H. S. Koelega (ed.) *Environmental Annoyance: Characterization, Measurement, and Control*. Amsterdam: Elsevier Science Publishers.
- Liang, J., H. Asano, **K. A. Bollen**, E.F. Kahana, and D. Maeda. 1987. "Cross-Cultural Comparability of the Philadelphia Geriatric Center Morale Scale: An American-Japanese Comparison." *Journal of Gerontology* 42:37-43.
- Bollen, K.A.** and J. Kmenta. 1986. "Estimation of Simultaneous Equation Models with Autoregressive or Heteroscedastic Disturbances." pp. 704-11 in J. Kmenta *Elements of Econometrics*. New York: Macmillan.
- Bollen, K.A.** 1986. "Sample Size and Bentler and Bonett's Nonnormed Fit Index." *Psychometrika* 51:375-77.
- Bollen, K.A.** 1986. "Political Rights and Political Liberties in Nations: An Evaluation of Human Rights Measures, 1950 to 1984." American Association for the Advancement of Science's special issue of *Human Rights Quarterly* 8:567-91.
- Liang, J., R.H. Lawrence, and **K. A. Bollen**. 1986. "Age Differences in the Structure of the Philadelphia Geriatric Center Morale Scale." *J. of Psychology and Aging* 1:27-33.
- Bollen, K.A.** and Karl G. Jöreskog. 1985. "Uniqueness Does Not Imply Identification: A Note on Confirmatory Factor Analysis." *Sociological Methods and Research* 14:155-63.
- Bollen, K.A.** and Robert Jackman. 1985. "Political Democracy and the Size Distribution of Income." *American Sociological Review* 50:438-57.

- Phillips, David P. and **K. A. Bollen**. 1985. "Same Time Last Year: Selective Data Dredging for Negative Findings." *American Sociological Review* 50:364-76.
- Liang, J. and **K. A. Bollen**. 1985. "Sex Differences in the Structure of the Philadelphia Geriatric Center Morale Scale." *Journal of Gerontology* 40:468-77.
- Bollen, K.A.** and Robert Jackman. 1985. "Regression Diagnostics: An Expository Treatment of Outliers and Influential Cases." *Sociological Methods and Research* 13:510-42.
- Bollen, K.A.** and Robert Jackman. 1985. "The Economic and Noneconomic Determinants of Political Democracy in the 1960s." *Research in Political Sociology* 1:27-48. Also, reprinted in *The Political Sociology of the State* edited by R. Braungart and M. Braungart (1990). Greenwich CT: JAI Press.
- Bollen, K.A.** 1984. "Multiple Indicators: Internal Consistency or No Necessary Relationship." *Quality and Quantity* 18:377-85.
- Bollen, K.A.** and B. Entwisle. 1984. "Economic Development and Fertility: A Note on Functional Form Specification." *Comparative Social Research* 7:179-93.
- Bollen, K.A.** 1983. "World System Position, Dependency and Political Democracy." *American Sociological Review* 48:468-79.
- Bollen, K.A.** 1983. "Temporal Variations in Mortality: A Comparison of U. S. Suicides and Motor Vehicle Fatalities, 1972-1976." *Demography* 20:45-59.
- Liang, J. and **K. A. Bollen**. 1983. "The Structure of the Philadelphia Geriatric Center Morale Scale: A Reinterpretation." *Journal of Gerontology* 38:181-89.
- Cermak, G. and **K. A. Bollen**. 1983. "Observer Consistency in Judging Extent of Cloud Cover". *Atmospheric Environment* 17:2109-2110.
- Bollen, K.A.** and D. Phillips. 1982. "Imitative Suicides: A National Study of the Effects of Television News Stories." *American Sociological Review* 47:802-809.
- Bollen, K.A.** and S. Jones. 1982. "Political Instability and Production: Motor Vehicle Output in Argentina, Brazil, and Mexico." *Studies in Comparative International Development* 27:73-91.
- Bollen, K.A.** and S. Jones. 1982. "Political Instability and Foreign Direct Investment: The Motor Vehicle Industry, 1948-1965." *Social Forces* 60:1070-88.

**Bollen, K.A.** 1982. "A Confirmatory Factor Analysis of Subjective Air Quality." *Evaluation Review* 6:521-35.

Cermak, G. and **K. A. Bollen**. 1982. "The Relationship Between Judged Visibility and Judged Air Quality: Results of a Survey." *Journal of the Air Pollution Control Association* 32:86-88.

**Bollen, K.A.** and B. Grandjean. 1981. "The Dimension(s) of Democracy: Further Issues in the Measurement and Effects of Political Democracy." *American Sociological Review* 46:232-39.

**Bollen, K.A.** and D. Phillips. 1981. "Suicidal Motor Vehicle Fatalities (MVF) in Detroit: A Replication." *American Journal of Sociology* 87:404-12.

**Bollen, K.A.** and K.H. Barb. 1981. "Pearson's R and Coarsely Categorized Measures." *American Sociological Review* 46:232-39.

**Bollen, K.A.** 1980. "Issues in the Comparative Measurement of Political Democracy." *American Sociological Review* 80:370-90.

Covello, V. and **K. A. Bollen**. 1979. "Status Consistency in Comparative Perspective: An Examination of Educational, Occupational, and Income Data in Nine Societies." *Social Forces* 58:528-39.

**Bollen, K.A.** 1979. "Political Democracy and the Timing of Development." *American Sociological Review* 44:572-87.

**Bollen, K.A.** and S. Ward. 1979. "Ratio Variables in Aggregate Data Analysis: Their Uses, Problems, and Alternatives." *Sociological Methods and Research* 7:431-50. Also, reprinted in *Aggregate Data Analysis* edited by D.J. Jackson and E.F. Borgatta (1980).

## ARCHIVE CONSTRUCTION AND DOCUMENTATION

**Bollen, K.A.** 1998. "Cross National Indicators of Liberal Democracy, 1950-1990." NSF Funded Project. Data and documentation delivered to ICPSR fall, 1998.

## COMMENTS, REPLIES, AND FOREWORDS

C. Zimmer and **K. A. Bollen**. 2002. "Is What You Ask, What You Get?" *North Carolina Data*

*Net* September, 31:14.

- Bollen, K.A.** 2000. "Modeling Strategies: In Search of the Holy Grail." *Structural Equation Modeling* 7: 74-81.
- Bollen, K.A.** 1995. "Apparent and Nonapparent Significance Tests." *Sociological Methodology* 25:459-468.
- Bollen, K.A.** and R.W. Jackman. 1995. "Inequality and Democratization Revisited." *American Sociological Review*, 60:983-989.
- Bollen, K.A.** 1994. "Foreword" to Rick Hoyle (ed.) *Structural Equation Modeling: Issues and Applications*. Newberry Park: California: Sage.
- Bollen, K.A.** 1990. "A Comment on Model Modification and Evaluation." *Multivariate Behavioral Research* 25:181-185.
- Bollen, K.A.** 1990. "Outlier Screening and a Distribution-Free Test for Vanishing Tetrads." *Sociological Methods and Research* 19:80-92.
- Bollen, K.A.** 1988. "If You Ignore Outliers, Will They Go Away? A Response to Gasiorowski." *Comparative Political Studies* 20:516-522.
- Bollen, K.A.** 1986. "'Cause' and 'Effect' Indicators." in *The Practice of Social Research (4th Edition)* by Earl Babbie.
- Bollen, K.A.** and K.H. Barb. 1983. "Collapsing Variables and Validity Coefficients (Reply to O'Brien)." *American Sociological Review* 48:286.
- Bollen, K.A.** and B. Grandjean. 1983. "Issues of Theory, Issues of Fact (Reply to Fornell)." *American Sociological Review* 48:138-40.

## REVIEWS

- Bollen, K.A.** 1997. "Review of L. Hayduck *LISREL: Issues, Debates, and Strategies*." in *Social Forces*.
- Bollen, K.A.** and Kwok-fai Ting. 1991. "Review of P. Bentler's EQS 3.0 and K. Jöreskog and D. Sörbom's LISREL 7.16." *American Statistician* 45:68-73.

**Bollen, K.A.** 1988. "Review of *The Statistical Analysis of Quasi-Experiments* by C. Achen." *Contemporary Sociology* 17:433-434.

**Bollen, K.A.** 1988. "Review of *Matrices and Society [Matrix Algebra and its Applications in the Social Sciences]* by Ian Bradley and Ronald L. Meek." *Contemporary Sociology* 17:127.

**Bollen, K.A.** 1985. "Review of *Industrialization and Development: A Third World Perspective* by Pradip K. Ghosh (ed) and *Contending Approaches to World System Analysis* by William R. Thompson (ed)." *Contemporary Sociology* 14:250-51.

**Bollen, K.A.** 1981. "Review of *The Political Economy of Distribution* by Michael D. Ward." *American Journal of Sociology* 87:502-4.

**Bollen, K.A.** and B. Entwisle. 1978. "Review of *Mortality Patterns in National Populations* by Samuel Preston." *American Journal of Sociology* 84:785-88.

**TEACHING EXPERIENCE** (partial list)

- 1999 - "Latent Trajectory (Curve) Analysis." taught with P. Curran. Co-sponsored  
by  
Odum Institute for Research in Social Science/Carolina Population  
Center/ICPSR. Chapel Hill, NC.
- 1990 "Structural Equations: Models, Statistical Theory, Practical Implementation"  
taught with Peter Bentler at the 1990 American Statistical Association  
Convention's Continuing Education Program. Anaheim, California.
- 1990,1991 "Structural Equation Models" taught with Peter Bentler at the American  
Sociological Association Convention. First and second annual  
ICPSR/Methodology Section workshops.
- 1985- "Human Societies", "Theory and Problems of Developing Societies", "Data  
Analysis in Sociological Research," "Contemporary Sociological  
Theories," "Structural Equations with Latent Variables," "Influential  
Works on Democracy," "Longitudinal Data Analysis," "Categorical Data  
Analysis," "Linear Regression Analysis," University of North Carolina,  
Chapel Hill, N.C. Undergraduate and graduate courses.
- 1982-85 "Methods of Sociological Inquiry," "Patterns of International Terrorism," and  
"Sociology of International Development," Dartmouth College, Hanover,  
NH. Undergraduate courses.
- 1987- "General Structural Equation Models: An Introduction" and "General Structural  
Equation Models: Intermediate Topics," ICPSR, University of Michigan,  
Ann Arbor, MI. Graduate/Post-graduate Workshops.
- 1980-88 "Models with Unmeasured Variables," ICPSR, University of Michigan, Ann  
Arbor, MI. Graduate/Post-graduate course.
- 1981 "Population Problems and Policies," Oakland University, Rochester, MI.  
Undergraduate course.

## RESEARCH PUBLICATIONS (GENERAL MOTORS)

"Results From a Survey of Judged Visibility and Air Quality in the Blue Ridge Mountains." GMR-3698.

"Suicidal Motor Vehicle Fatalities (MVF) in Detroit: A Replication." GMR-3438 (revised version published in American Journal of Sociology, see "Journal Publications" section).

"Pearson's R and Coarsely Categorized Measures." GMR-3414 (revised version published in American Sociological Review, see "Journal Publications" section).

"Political Instability's Impact on Output: Motor Vehicle Production in Argentina, Brazil, and Mexico." GMR-3224 (revised version published in Studies in Comparative International Development, see "Journal Publications" section).

"Regression in Separate Groups Versus Pooled Samples with Dummy Variables." GMR-3194.

Political Instability's Effect on International Motor Vehicle Production." GMR-2888 (revised version accepted for publication in Social Forces, see "Journal Publications" section).

"Some Consequences of Time-lag Selection in Regression Models." GMR-2838.

Also, 17 internal reports not listed above.

## CONVENTION PAPERS AND INVITED PRESENTATIONS (Partial Listing)

"Latent Variables in Psychology and the Social Sciences: A Sample Realization Definition." Invited Talk. Institute for Statistics and Decision Sciences, Duke University, Durham, North Carolina, September 3, 2004.

"Dissecting the Chi Square Test Statistic in Structural Equation Models." Invited talk at Model Selection Conference. University of Amsterdam, Netherlands, August 27-29, 2004.

"Polychoric Two-Stage Least Squares for Categorical Variables in Structural Equation Models." Keynote Speaker at the Society for Multivariate Analysis in the Behavioral and Social Sciences (SMABS) Conference, Jena, Germany, July 18-21, 2004.

"Latent Variables in Psychology and the Social Sciences." Keynote Speaker at Congress on Methodology of Health and the Social Sciences, University of Valencia, September 16 to 19, 2003, Valencia, Spain.

“Latent Trajectory/Growth Curve Analysis.” Invited Speaker at Congress on Methodology of Health and the Social Sciences, University of Valencia, September 16 to 19, 2003, Valencia, Spain.

“Latent Variable Models under Misspecification: A Comparison of Full Information Maximum Likelihood and Two Stage Least Squares (2SLS) Estimators.” Invited Speaker at Research Methods 2003 Conference, Free University, June 25 to 27, 2003, Amsterdam, Netherlands.

“A Weightless Estimator for Categorical Variables in Structural Equation Models.” Paper presented at the Meeting of the Psychometric Society, June, 2002, Chapel Hill, NC.

“A Tetrad Test for Categorical Variables in Structural Equation Models.” (with John Hipp) Paper presented at the Meeting of the Psychometric Society, June, 2002, Chapel Hill, NC.

“An Evaluation of RMSEA Tests of ‘Close Fit’ and ‘Not Close Fit’ in Structural Equation Models.” (with Curran, P.J., Chen, F., Paxton, P., & Kirby, J.B.) Paper presented at the Meeting of the Psychometric Society, June, 2002, Chapel Hill, NC.

“Economic Status and Fertility: Does the Measure Matter?” Invited talk at the Office of Population Research, Princeton University, September 25, 2001, Princeton, NJ.

“Latent Trajectory/Growth Curve Analysis.” Presented at the Methods Section Workshop of the American Sociological Association, August 17, 2001, Anaheim, California.

“Latent Variables in Psychology and the Social Sciences.” Invited talk at the International Meeting of the Psychometric Society, July, 2001, Osaka, Japan.

“Growth Modeling using Structural Equation Models.” Invited talk at Seminar in Recent Developments in Structural Equation Modeling. Norwegian School of Economics and Business Administration, May 7, 2001, Bergen, Norway.

“Interactions of Latent Variables in Structural Equation Models.” Invited talk at Seminar in Recent Developments in Structural Equation Modeling. Norwegian School of Economics and Business Administration, May 7, 2001, Bergen, Norway.

“Two-stage Least Squares and Latent Variable Models: Simultaneous Estimation and

- Robustness to Misspecifications.” Invited talk. International Symposium on Structural Equation Modeling. December 13-15, 2001, Chicago, IL.
- “Causal Inferences in Structural Equation Models.” Invited talk. Symposium on Causal Inferences, September 15, 2000. School of Public Health, Johns Hopkins University, Baltimore, MD.
- “Structural Equation Models.” Invited talk. Quantitative Methods Symposium. June, 2000. Institute for Social Research. York University, Toronto, Ontario.
- “An Autoregressive Latent Trajectory Model: A Synthesis of Two Traditions.” Paper presented  
at Factor Analysis and Structural Equation Modeling: Perspectives and Visions. An International Symposium honoring the Research of Karl G. Jöreskog March 31 to April 1, 2000, University of Uppsala, Uppsala, Sweden.
- “Improper Solutions in Structural Equation Models: Causes, Consequences, and Strategies.” Paper presented at the 1999 Annual Meeting Psychometric Society at the University of Kansas, Lawrence, Kansas, June 24-27, 1999.
- “An Empirical Deconstruction of Graduate School Ratings Using a Merit-Artifact Model.” (with P. Paxton) 1999 American Sociological Association Convention. Chicago, IL, August 1999.
- “An Overview of Structural Equation Models.” 1999 American Sociological Association Convention, Chicago, IL, August 1999.
- “Latent Growth Curve Modeling.” (with P. Curran) Invited presentation at the Second International Institute on Developmental Science, May 23-28, 1999, Stockholm, Sweden.
- “An Autoregressive Latent Trajectory (ALT) Model: Synthesizing Two Traditions.” (with P. Curran) The Gertrude M. Cox Statistics Conference, Research Triangle Institute, Research Triangle Park, NC. September 10, 1999. Also presented at Methodology Section Conference, American Sociological Association, Duke Univ., March, 1999.
- “An Empirical Examination of the RMSEA for Assessing Fit in Structural Equation Modeling: Finite Sampling Properties and Statistical Power.” (with P. Curran, P. Paxton, F. Chen, J. Kirby) Methodology Section Conference of the American Sociological Association, Duke University, March, 1999.
- “A hybrid latent trajectory model of stability and change: Applications in developmental

- psychopathology.” (with P. Curran) Biennial meeting of the Society for Research in Child Development, Albuquerque, NM, April 1999.
- “Toward Synthesizing Autoregressive and Latent Trajectory Models.” (with P. Curran) APA sponsored New Methods for the Analysis of Change conference hosted by The Methodology Center, The Pennsylvania State University, University Park, PA, October 1998.
- “Structural Equation Models with Interactions of Latent Variables: A Two-Stage Least Squares Estimator.” Invited presentation at Osaka University, Seventh Colloquium of Psychology and Behavioral Sciences, Osaka, Japan, September, 1998.
- "Illiberal Democracies: Commonplace or Exceptional?" Invited Lecture at Department of Sociology, Brown University, Providence, R.I., May, 1998.
- "Change Scores, Fixed Effects, and Random Components in Longitudinal Models." Invited Lecture, Department of Sociology, University of Akron, Akron, Ohio, April, 1998.
- "Does Liberal Democracy Matter?" Invited Lecture at the Alpha Kappa Delta Banquet, University of Akron, Akron, Ohio, April, 1998.
- "Structural Equation Modeling." Invited Lecture at Fourth Annual Population Research Institute Methodology Workshop. June 1997. Pennsylvania State University, University Park, Pennsylvania.
- "An Overview of Structural Equation Models." Invited Lecture at Workshop on Statistical Association Models with Latent Variables, July 1996, Wiesbaden, Germany.
- "Measurement Models." Invited Lecture at Nordic Conference on Scale Validation. May 1996. University of Copenhagen, Denmark.
- "An Introduction to Structural Equation Models." Invited Workshop at Swinburne University. November 1996. Melbourne, Australia.
- "Interactions of Latent Variables in Structural Equation Models." Social Science and Statistics Conference in Honor of Clifford C. Clogg. September, 1996. Pennsylvania State University, State College, PA.
- "Subjective Measures of Democracy." (with Pamela Paxton). Presented at the 1996 American

Sociological Association Convention. August, 1996. New York City.

"A Monte Carlo Study of the Instrumental Variables and Two Stage Least Squares Estimators in Confirmatory Factor Analysis." (with Andrey Lukashou). Presented at the 1996 American Sociological Association Convention. August, 1996. New York City.

"Family Planning Facilities in Tanzania: His and Her Perceptions of Distance and Time." Presented at 1996 Population Association of America Convention, May, 1996, New Orleans, Louisiana; Also presented at Population Seminar, October, 1995, Pennsylvania State University, State College, Pennsylvania.

"Ideas on Teaching Undergraduate Methodology Courses in Sociology." Invited presentation Pew Charitable Trust Program in Preparing Future Faculty, January 1996, Department of Sociology, University of Washington, Seattle, Washington.

"Ideas on Teaching Graduate Methodology Courses in Sociology." (same as above).

"The Measurement of Democracy". Invited presentation at 1996 Midwest Political Science Association Convention, April 1996, Chicago, Illinois.

"Democracy Before Athens," (with Pamela Paxton). February, 1994. Inequality and Democracy Conference at Rutgers University, New Brunswick, New Jersey.

"A 2SLS Estimator for Latent Variable Models," March, 1994. Presented at the Interdisciplinary Consortium for Statistical Applications at Indiana University at Bloomington and at the RMD Conference on Causal Modeling at Purdue University, West Lafayette, Indiana.

"Theoretical Frameworks for Democratic Political Development Assessments." January, 1993. National Academy of Science. Washington, D.C.

"Bootstrapping Goodness of Fit Measures in Structural Equation Models." (With R. Stine). 1992. Social Science Methodology Conference. ISA Trento, Italy. Also presented at Department of Economics, Universitat Pompeu Fabra, Barcelona, Spain in Summer, 1992.

"Outliers and Residual Analysis." 1992 (January). Keynote Speaker at Third National Symposium on Methodological Issues in Advanced Causal Modeling. Atlanta, GA.

"Indicators of Progress Toward Democracy Workshop." 1991 (May). National Research Council. Washington, D.C.

"High Level Expert Group Meeting on Freedom and Development." 1991 (November). United Nations Development Program. New York, NY.

"Confirmatory Tetrad Analysis." (With K. Ting). 1991 (August) American Sociological Association, Cincinnati, Ohio.

"Observational Residuals in Factor Analysis" (with G. Arminger) 1990. American Sociological Association, Washington, D.C.

"Perceived Cohesion: Its Dimensions and Measurement." (With R. Hoyle) 1989. American Sociological Association, New York, New York.

"Conventional Wisdom on Measurement: A Structural Equation Perspective." (with R. Lennox) 1989. American Sociological Association, New York, New York.

"Bootstrapping Structural Equation Models." (with R. Stine) 1988. American Sociological Association, Atlanta, Georgia.

"Political Democracy: Conceptual and Measurement Traps." 1988. Invited paper at the Stanford Conference on "The Measurement of Democracy," at the Hoover Institution, Stanford, California.

"A New Incremental Fit Index for General Structural Equation Models." 1988. Southern Sociological Society, Nashville, Tennessee.

"Structural Equation Approaches to Subjective Air Quality." 1986 Invited paper at the 350th Anniversary Symposium of the University of Utrecht, The Netherlands.

"Outliers and Improper Solutions in Structural Equation Models." 1986 American Sociological Association, New York, NY.

"Toward a model of Social Integration Among the Elderly." (with J. Liang) 1986 American Sociological Association, New York, N.Y.

"A Panel Analysis of the Philadelphia Geriatric Center Morale Scale" (with J. Liang & R. Lawrence) The Gerontological Society of America's 39th Annual Scientific Meeting, 1986.

- "Structural Equation Models: Unresolved Problems and Neglected Issues." Roundtable Discussion Chair 1985 American Sociological Association, Washington, D.C.
- "World System Position, Democracy, and Inequality." (with R. Jackman), 1984 General Conference of the European Association of Development Research and Training Institutes, Madrid, Spain.
- "A Note on 2SLS with Heteroskedastic and/or Autoregressive Disturbances." 1984 American Sociological Association, San Antonio, TX.
- "Multiple Indicators: Internal Consistency or No Necessary Relationship?" 1983 American Sociological Association, Detroit, Michigan.
- "Noneconomic Determinants of Political Democracy" (with Robert Jackman). 1983 American Sociological Association, Detroit, Michigan.
- "Daily Temporal Variations in Mortality." 1982 Population Association of America, San Diego, CA.
- "The Dimension(s) of Democracy." (with B. Grandjean), 1981 American Sociological Association, Toronto, Ontario, Canada.
- "Ratio Variables in Social Science Research." Roundtable Discussion Chair 1981 American Sociological Association, Toronto, Ontario, Canada.
- "Ratio Variables in Correlation and Regression Analysis." Roundtable Discussion Chair 1980 American Sociological Association, New York, NY.
- "The Effects of Early and Late Development on Political Democracy." 1979 American Sociological Association, Boston, MA.
- "Ratio Variables in Aggregate Data Analysis: Their Uses, Problems, and Alternatives." (with S. Ward), 1979 Population Association of America, Philadelphia, PA.
- "A Comparative Analysis of Status Consistency." (with V. Covello), 1978 Eastern Sociological Association, Philadelphia, PA.

**WORKS IN PROGRESS** (or under review)

- Bollen, K. A.**, P.M. Paxton, and R. Morishima. (under review). "Evaluating the Evaluators: US AID's Programs on Democracy and Governance."
- Bollen, K.A.**, H. Kim, and R. W. Jackman. "Comparative Measures of Suffrage, 1950-1990."
- Allison, P. and **K. A. Bollen**. "Change Score, Fixed Effects, and Random Component Models: A Structural Equation Approach."
- Bollen, K.A.** (under review) "Polychoric Two-Stage Least Squares (P2SLS) in Structural Equation Models with Categorical Variables."
- Bollen, K.A.**, I. Speizer, T. Mroz, and S. Ngallaba. (under revision). "Subjective and Objective Measures of Distance to Family Planning Facilities in Rural Tanzania."
- Lukoshov, A. and **K. A. Bollen**. "A Monte Carlo Study of the Instrumental Variables and Two Stage Least Squares Estimators in Confirmatory Factor Analysis."
- Bollen, K.A.** and W. Davis (under revision). "Causal Indicators in Structural Equation Models."
- Bollen, K.A.** (draft). "A Note on 2SLS with Heteroskedastic and/or Autoregressive Disturbances."
- Bollen, K.A.** and Albina Chuwa. 1995. "A Descriptive Analysis of the Tanzania Accessibility Survey." EVALUATION Project Working Paper. Carolina Population Center.
- Bollen, K.A.** 1992. "Publicized Suicides and Suicidal Motor Vehicle Fatalities: A National Study, 1972-76." Unpublished manuscript.

**EDITORIAL BOARDS:**

Psychological Methodology (1997-)  
Multivariate Behavioral Research (1998-)  
American Journal of Sociology (1997-1999)  
Social Forces (1985-)  
Contemporary Sociology (1987-1991)  
Sage Quantitative Applications in the Social Science Series  
Sociological Methods & Research (1987-)  
Sociological Methodology (1992-1995, 1998-2000)  
Studies in Comparative International Development (2000-)  
Structural Equation Modeling: A Multidisciplinary Quarterly (1994-)

**REFEREE FOR:**

American Sociological Review, American Journal of Sociology, Demography,  
Psychological Bulletin, Journal of the American Statistical Association Psychometrika,  
American Political Science Review, American Journal of Political Science,  
Psychological Methodology, Sociological Forum, International Studies Quarterly,  
Multivariate Behavioral Research, Journal of Political and Military Sociology, Journal of  
Conflict Resolution, Social Problems, Suicide and Life-Threatening Behavior, Law and  
Society, National Science Foundation, Veterans Administration, and others.

**GRANTS AND OTHER PROFESSIONAL ACTIVITIES**

Electorate Nominating Committee of American Association for the Advancement of Science  
 Section on Social, Economic, and Political Sciences (K). 2004 to 2007.

Minority Dissertation Workshop, Carolina Population Center, University of North Carolina at  
 Chapel Hill, Summer, 1997.

**Bollen, K.A.** (PI), Mark Montgomery, Jennifer Glanville, and Guy Stecklov. "Socioeconomic  
 Status in Population and Health Studies in Developing Countries" MEASURE-USAID  
 Grant funded July 1, 1998 to December 31, 2000, (\$125,250)

Curran, P. J. (PI) and K. A. Bollen (Co-PI). 1999. "Innovative Latent Curve Models of  
 Adolescent Drug Use" National Institute on Drug Abuse of NIH funded from  
 July 1, 1999 to June 30, 2004, (\$923,420).

**Bollen, K.A.** (PI) "Democracy and Democratization: Social Conditions, Institutional Forms,  
 Transitions" National Science Foundation Graduate Traineeship Award, September 1,

1995 to August 31, 2002, (GER-9554569), \$562,500.

Member of Sociology Panel, National Science Foundation, 1991-1993.

Chair, Methodology Section, American Sociological Association, 1993-1995 (Chair-elect, 1992-1993)

Member, Methodology Council, American Sociological Association, 1989-1991.

**Bollen, K.A.** (P.I.) "Measures of Liberal Democracy, 1980-1991." National Science Foundation Award, May 1, 1992 to April 30, 1995.

**Bollen, K.A.** (P.I.) "Cross-National Measures of Political Democracy." National Science Foundation Award, July 1, 1989 to April 30, 1991.

University Research Council Award 1985-87; 1988-1990, The University of North Carolina at Chapel Hill.

Lupton Opportunity Award. 1987-88. The University of North Carolina at Chapel Hill

Faculty Fellowship. 1984-85, Dartmouth College.

Phi Beta Kappa Member

B.A. cum laude with honors in Sociology, Sigma Phi (Honors Fraternity), Drew University.