

WILLIAM EDWARD REMUS

ADDRESS:

9/18/20

Emeritus Professor of Information Technology Management since 2007
Professor of Information Technology Management 1975 to 2007
Shidler College of Business Administration
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PERSONAL DATA:

Born February 5, 1944, married, excellent health.

EDUCATION:

Ph.D. in Management, Michigan State University, 1974.

MBA in Production, Michigan State University, 1972.

MS in Electrical Engineering, University of California, Santa Barbara, 1968.

BSE in Science Engineering, University of Michigan, 1967.

BSE in Electrical Engineering, University of Michigan, 1966.

Associate in Engineering, Lake Michigan College, 1964.

PROFESSIONAL HONORS: TEACHING

Fulbright Fellow at the National University of Malaysia, 1980.

Honored with the Presidential Citation for Meritorious Teaching, 1990.

Honored for Teaching Excellence by *College Student Journal*, 1984.

Selected Professor of the Year by the MBA Association in 1985, 1980, and 1978.
Runner-Up for this award in 1987, 1986, and 1977.

Finalist for Manoa campus Outstanding Teacher Award, 1985 and 1979.

Selected for the College's Teaching Excellence Award, 1996, 1990 and 1988.

PROFESSIONAL HONORS: RESEARCH

Honored with the Erskine Fellowship to the University of Canterbury, 1994.

National Science Foundation Grant for Research in Decision Making, 1984-85.

Associate Editor, Management Information Systems Quarterly, 1990-93.

Editorial Board, International Journal of Commerce and Management, 1989-2010 .

ACADEMIC POSITIONS:

Professor, College of Business Administration, University of Hawaii, 1975-2007 .

Chairman, Doctoral Program in Communication and Information Science, University of Hawaii, 1989-92.

Chairman of Graduate Programs, College of Business Administration, University of Hawaii, 1981-83.

Chairman, Department of Decision Sciences, College of Business Administration, University of Hawaii, 1989.

Fulbright Fellow, National University of Malaysia, 1980.

Visiting Assistant Professor, College of Business Administration, Michigan State University, 1974-75.

ARTICLES IN REFEREED JOURNALS:

HUMAN DECISION MAKING:

Remus, W., M. O'Connor, and K. Lim, Improving Judgmental Forecasts with Bootstrapping and Task Feedback Support, *Journal of Behavioral Decision Making*, 2005, 18(4), pp. 247-260 .

The study reported here finds cognitive feedback more effective than bootstrapping in improving judgmental forecasting accuracy.

O'Connor, M., Remus, W., and K. Griggs, The Asymmetry of Judgmental Confidence Intervals in Time Series Forecasting, *International Journal of Forecasting*, 2001, 17, 623-633.

Forecasts are often accompanied by confidence intervals that bound the point forecast. We found these are not symmetric as modeled by statisticians and econometricians, but instead asymmetric to reflect real world uncertainties.

W. Remus and J. Kottemann, Towards a Theory of Cognitive Style in Decision Making, *Journal of Psychological Type*, 1998, 46, pp. 6-12.

In the study, we argued how Carl Jung's theories might be used to predict decision accuracy (it turns out to be largely thought certain scales impact on decision consistency). We then conducted an experiment that demonstrated the theorized effect.

Remus, W., M. O'Connor and K. Griggs, The impact of incentives on the accuracy of judgmental forecasting, *International Journal of Forecasting*, 1998, 14 (4), pp. 515-522.

Prior to this study it was not clear whether or not monetary incentives improved the forecasting accuracy of subjects in judgmental forecasting experiments. It turns out that neither payments nor prizes improve forecasting accuracy.

Remus, W., O'Connor, M. and K. Griggs, The Impact of Information of Unknown Correctness on the Judgmental Forecasting Process, *International Journal of Forecasting*, 1998, 14, pp. 313-322.

In the study, people are asked to extrapolate times series when major changes occur in the time series structure and both correct and misinformation provided. We found that the more correct information, the better the forecast accuracy. However, there was no difference between misinformation and no information at all. Thus the forecasters were not misled by misinformation.

W. Remus and J. Kottemann, Towards a Theory of Cognitive Style in Decision Making, *Journal of Psychological Type*, 1998, 46, pp. 6-12.

This reviews the literature on cognitive style in decision making and reports an experiment that tests a model for cognitive factors (Myers Briggs Type Indicator and Risk Avoidance) in steady state managerial decision making. JP and TF turn out to effect consistency that in turn effects economic performance.

O'Connor, M., W. Remus and K. Griggs, Going up - going down: how good are people at forecasting trends and changes in trends? *Journal of Forecasting*, 1997, 16, pp. 165-176.

People trend to react differently to upwardly and downwardly trending data. This paper reviews the literature on this topic and tests it in the context of judgmental forecasting. The effect is found to occur in judgmental forecasting.

Remus, W., O'Connor, M. and K. Griggs, The Impact of Feedback on Judgmental Forecasting Process, *Organizational Behavior and Human Decision Processes*, 1996, 66(1), pp. 22-30.

This paper examines five kinds of feedback and their impact on judgmental forecasting accuracy. While simple outcome feedback and feedback of performance measures failed to improve the accuracy of forecast, task feedback (feedback of task characteristics) did significantly improve forecasting accuracy.

W. Remus, M. O'Connor, and K. Griggs, Will Reliable Information Improve the Judgmental Forecasting Process? *International Journal of Forecasting*, 1995, 11, 285-293.

In the study, people are asked to extrapolate times series when major changes occur in the time series structure and various levels of reliable information provided. We replicated our earlier work finding models superior to humans in this task (IJF, 93). We also found that the more reliable the information the better the forecasts; however, simple forecasting models still did better than people.

Remus, W. and J. Kottemann, A Test of the Anchor & Adjustment Model for Decision Making, *Decision Support Systems*, 1995, 15, pp. 63-74.

The Kahnemann & Tversky anchor and adjustment model was operationalized several ways and compared with several other models for managerial decision making. It neither fit their decisions well nor did it yield low costs.

Davis, F., J. Kottemann and W. Remus, Computer Assisted Decision Making: Performance, Beliefs, and the Illusion of Control, *Organizational Behavior and Human Decision Processes*, 1994, 57, pp. 26-37.

This paper reports an experiment that found that what-if analysis could cause managers not to perform better but instead to become overconfident.

O'Connor, M., W. Remus and K. Griggs, Judgmental Forecasting in Times of Change, *International Journal of Forecasting*, 1993, 9(2), pp. 163-172.

People are often preferred to forecasting models when structural changes in the forecasting environment are expected to occur. In the study we tested that axiom; people were asked to extrapolate times series when major changes occur in the time series structure. Humans did not do as well as forecasting models.

Kottemann, J. and W. Remus, The Effect of Planning Horizon on the Effectiveness of What-If Analysis, *Omega, The International Journal of Management Science*, 1982, 20(3), pp. 295-301.

This paper reports an experiment that found that what-if analysis could cause managers to be overconfident but this effect was a function of the planning horizon. The longer the planning horizon, the more overconfident they were.

Remus, W., Criterion Referenced Judgmental Forecasting Models, *Journal of Forecasting*, 1991, 10(4), pp. 415-424.

This article provides the mathematical basis for the selection of the best judgmental forecasting model when U-shaped criterion functions exist.

Kottemann, J. and W. Remus, A Study of the Relationship Between Decision Model Naturalness and Performance, *Management Information Systems Quarterly*, 1989, 13(2), pp. 171-182.

This article found that the fit and performance of a decision model are not related. This means that models that fit better may not perform as well as those that have a lesser fit. This is the second part of the NSF study.

Remus, W., A Study of Graphical and Tabular Displays and Their Interaction with Environmental Complexity, *Management Science*, 1987, 33(9), pp. 1200-1205.

This is the follow-on to the earlier *Management Science* article. It replicates the earlier study plus shows a significant interaction between display type and environmental complexity.

Remus, W. and J. Kottemann, Semi-structured Recurring Decisions: An Experimental Study of Decision Making Models and Some Suggestions for DSS, *Management Information Systems Quarterly*, 1987, 11(2), pp. 233-244.

The study finds tracking artifacts (the "range" effect and lag) in managerial decision making. These artifacts may show anchoring-and-adjustment to be occurring. The first part of the NSF study.

Remus, W., P. L. Carter and L.O. Jenicke, Improving Decision Making Using Performance Feedback, *Operations Research Letters*, 1984, 3(2), pp. 105-110.

In this empirical study we examined the effectiveness of feedback in improving decision making. When the environment punishes poor decision making more (i.e. quadratic costs), feedback is more effective. There is, however, a level of feedback beyond which decision making degrades. This result is consistent with several information processing theories.

Remus, W., An Empirical Investigation of the Impact of Graphical and Tabular Data Representations on Decision Making, *Management Science*, 1984, 30(5), pp. 533-542.

This article reports an empirical study to determine whether graphical or tabular aids are better for aiding decision making. When the error variance was greatly reduced through statistical methodology, tabular aids performed significantly better.

Remus, W., P. L. Carter and L.O. Jenicke, Regression Models in Unstable Environments, *Journal of Business Research*, 1979, 7(2), pp. 187-196.

In this empirical research study, decision rules were found to be effective in capturing managerial decision making even in the face of instabilities in cost information. During the unstable periods, the rules tracked the changing environment and modeled the learning taking place.

Carter, P. L., W. Remus and L.O. Jenicke, Production Scheduling Decision Rules in Changing and Nonlinear Environments, *International Journal of Production Research*, 1978, 16(6), pp. 493-496.

In this empirical research study production scheduling rules were found to be more effective in quadratic than in non-quadratic costs. This may explain why this method is not used in industry. Also these rules were found to be effective when the underlying quadratic cost structure changes.

Remus, W., Testing Bowman's Managerial Coefficient Theory Using a Competitive Gaming Environment, *Management Science*, 1978, 24(8), pp. 827-835.

This paper demonstrates the effectiveness of testing a decision theory by using a competitive gaming environment. All postulates of theory were found to hold. In particular, erratic decision making (variance) was more costly than poor intuitions (bias).

Remus, W. and L.O. Jenicke, Unit and Random Linear Models in Decision Making, *Multivariate Behavioral Research*, 1978, 13, pp. 215-221.

This article reports a simulation study done to refute the contentions of Dawes and Corrigan about unit and random linear models which was reported in *Psychological Bulletin*. While correlations were equivalent for regression and unit rules, regression rules yielded lower costs than unit rules.

Remus, W., Bias and Variance in Bowman's Managerial Coefficient Theory, *Omega, The International Journal of Management Science*, 1978, 5(3), pp. 349-351.

This article provides the mathematical condition under which Bowman's managerial coefficient theory's third postulate holds. It then provides empirical data to show this condition is met in realistic decision making situations.

DECISION SUPPORT AND INTELLIGENT SYSTEMS:

Nelson, M., T. Hill, W. Remus and M. O'Connor, Time Series Forecasting Using Neural Networks: Should the Data Be Deseasonalized First? *Journal of Forecasting*, 1999, 18(5/6), 359-370.

This research determines if deseasonalizing data prior model estimation improves the performance of neural network time series forecasting models. In spite of arguments in the literature to the contrary, deseasonalization does improve forecasting accuracy.

Hill, T., M. O'Connor and W. Remus, Neural Networks for Time Series Forecasting, *Management Science*, 1996, 42(7), pp. 1082-1092.

This research compares neural network models with numerous standard forecasting models in forecasting the Makridakis 111 data series. The neural networks did better for both monthly and quarterly series; they were particularly good with discontinuous time series.

Marquez, L., T. Hill, M. O'Connor, and W. Remus, Artificial Neural Networks for Forecasting and Decision Making, *International Journal of Forecasting*, 1994, 10, pp. 5-15.

In this paper we reviewed all studies comparing neural networks and classical models for forecasting and decision making. They perform comparably (which turns out to be a controversial result and makes many people unhappy).

Hill, T. and W. Remus, Neural Networks for Composite Managerial Judgment, *Decision Support Systems*, 1994, 11, pp. 449-459.

In this paper we compared several neural networks with linear regression in capturing composite managerial judgment. Neural networks give superior cost performance in the production scheduling task.

Remus, W. and T. Hill, Neural Networks of Managerial Judgment, *Advances in Artificial Intelligence in Economics, Finance, and Management*, 1994, 1, 177-191.

In this article we compared several neural networks with linear regression in capturing managerial judgment. Linear regression fit a little better but both gave similar cost performance in the production scheduling task.

Kottemann, J. and W. Remus, Evidence and Principles of Functional and Dysfunctional DSS, *Omega, The International Journal of Management Science*, 1987, 15(2), pp. 135-143.

This provides a review of the literature of the impact of various factors on DSS performance.

Remus, W. and J. Kottemann, Toward Intelligent Decision Support Systems: A Proposal for an Artificially Intelligent Statistician, *Management Information Systems Quarterly*, 1986, 10(4), pp. 403-418.

The article proposes how statistical rules, heuristics, and data could be handled by an Artificially Intelligent statistician. The article also suggests how this might reduce cognitive limitations of human decision makers.

Farwell, D. and W. Remus, A Decision Support System for Business School Accreditation, *Journal of Computer Information Systems*, 1985, 15(2), pp. 10-12.

This article reports the use of a DSS to prepare the College of Business for accreditation. It also reports generalizations based on the DSS about how the College should be best managed in order to give a quality education with limited resources.

METHODOLOGICAL ISSUES:

Remus, W., O'Connor, M. and K. Griggs, The Impact of Incentives on the Accuracy of Subjects in Judgmental Forecasting Experiments, *International Journal of Forecasting*, 1998, 14, 515-522.

Experimental research is often questioned on the grounds that the subjects are not motivated to perform well and that they need incentives in order to do well. Our study found incentives make no difference for this task.

Remus, W., Will Information Systems Research Generalized to Managers? *Managerial and Decision Economics*, 1996, 17(1), pp. 93-102.

This paper reports an experiment that compares the decision performance of undergraduate students and business people. The latter perform better and were more consistent.

Remus, W., The Robustness of a Linear Model of the Admissions Decision, *Omega, The International Journal of Management Science*, 1986, 14(2), pp. 185-187.

Moskowitz et al. replicated our earlier study on linear models of the production scheduling problem. Their generalizations of the replication's results were extended to the admissions decision by this article.

Remus, W., An Empirical Test of the Use of Graduate Students as Surrogates for Managers in Experiments on Business Decision Making, *Journal of Business Research*, 1986, 14(1), pp. 20-30.

The literature is rife with concern about whether experimental results apply to real businesses because the experimental subjects are students (not managers). The study finds no differences in decision making between graduate students and managers making the production scheduling decision.

Remus, W., Experimental Designs for Analyzing Data from Games: Or, Even the Best Statistical Methods Do Not Replace Good Experimental Control, *Simulation and Games*, 1981, 12(1), pp. 3-14.

This article is a general view on the experimental design literature with a particular emphasis on the ways of dealing with confounding. These issues were placed in the context of doing research on gaming and interpreting the existing literature on gaming.

Remus, W., Measures of Fit for Unit Rules, *American Psychologist*, 1980, 35(7), pp. 678-680.

In July of 1979 Robin Dawes published an article in this journal advocating unit rules. I point out in my article the methodological failings of which led him to make his erroneous prescription of unit rules. My article also suggests how he could clean up his methodology.

UNIVERSITY ADMINISTRATION:

Johnson, L. and W. Remus, A Comparison of the Problems Faced by First Year Men and Women Graduate Business Students, *College Student Journal*, 1985, 19(4), pp. 432-437.

This article finds little difference in the problems faced by men and women. The crucial dimensions of ethnicity and marital status were more meaningful predictors.

Remus, W. and C. Wong, The Impact of Grade Inflation on Five Admission Criteria, *College Student Journal*, 1984, 18(4), pp. 359-363.

This article builds on our earlier paper by examining whether removing grade point inflation improves the predictions of five common business school admission criteria. It doesn't.

Isa, D. and W. Remus, Predicting Who Will Actually Attend Your MBA Program, *College Student Journal*, 1983, 17(2), pp. 137-140.

This article illustrates the effectiveness of discriminant analysis in predicting graduate student enrollments. The data used was from the 1974-75 Hawaii MBA Programs. Not surprising, local residents and those given financial aids were the most likely to enroll.

Remus, W. and C. Wong, An Evaluation of 5 Models for the Admission Decision, *College Student Journal*, 1982, 16(1), pp. 53-59.

This article reports a comparative evaluation of five models (regression, discriminant, and three a priori models) in predicting student success in the MBA program. None improve upon the decisions made by the admissions officer.

Gilbert, P. and W. Remus, Design and Evaluation of a Computerized Registration System, *International Journal of Instructional Media*, 1978, 5(3), pp. 241-249.

This article reports the data gathered when implementing the College of Business' Registration System. The system was easily adopted.

RESEARCH ON TEACHING:

Lim, K., W. Remus, and M. O'Connor, The Effect of Presentation Media and Animation on Learning a Complex Decision, *International Journal of Instructional Media*, 2008, 35(3), p. 283 + .

Remus, W. and A. Edge, Does Adding a Formal Leader Improve the Performance of a Team in a Business Simulation? *Simulation and Games*, 1991, 22(4), pp. 498-501.

This study compared teams of 3 peers with teams with one supervisor and three subordinates. When controlling for industry and country, both types of teams performed equally well.

Remus, W., Consistency in Business Games, *Simulation and Games*, 1983, 14(2), pp. 155-162.

This article reports an empirical study in which the different competitive settings created by different industries in a business simulation game were found to be characterized by different levels of erratic decision making even after rank, time, and rank-time interaction were blocked upon. This explained the results of a study by Makridakis and Hogarth on consistency in decision making.

Remus, W. and S. Jenner, The Expectations and Realities of Playing Business Games, *Simulation and Games*, 1981, 12(4), pp. 480-488.

This paper reports a study using a pre and post test design to identify the changes in students' attitudes caused by playing business games. In general, students find business games more enjoyable than expected but less realistic than desired.

Remus, W. and S. Jenner, Playing Business Games: Attitudinal Different Students Playing a Business Game Singly and As Teams, *Simulation and Games*, 1979, 10(3), pp. 75-86.

This article replicates and extends my "Who likes Business Games?" article which also appeared in this journal. Many of the same effects noted earlier also occur when student teams play business games. The social dynamics of the team game, however, cause these effects not to be so strong.

Remus, W., An Effective Learning System for Large Quantitative Methods Courses, *International Journal of Mathematical Education in Science and Technology*, 1978, 9(1), pp. 51-64.

This article is an elaboration and extension of earlier papers on teaching by objectives. It includes an extensive discussion of using systems analysis of the data I had gathered on course dynamics.

Remus, W., Who Likes Business Games?, *Simulation and Games*, December, 1977, 8(1), pp. 64-68.

This article reports the results of an empirical study on the relationship between student's performance in a game and their attitudes toward the game. Student satisfaction with the game turned out to be a linear function of their team's final rank. This result is consistent with the behavioral research on the relationship between performance and satisfaction.

OTHER EMPIRICAL STUDIES:

Remus, W. and L. Kelley, Evidence of Sex Discrimination: In Similar Populations, Men Are Better Paid than Women, *American Journal of Economics and Sociology*, 1983, 42(2), 149-151.

This paper is an extensive analysis using log-linear models of data reported in Women's Working Paper Series. The paper also contains an extensive review of the literature on sex-pay discrimination. Even though factors such as education, major, ethnicity, and type of job were controlled, sex-pay discrimination still occurs. Women earn 81% of the salary of men.

Kelley, L. and W. Remus, A Comparative Study of Occupational Success of Young Asian American Business Professionals in Hawaii, *Social Processes in Hawaii*, 1981, 28, pp. 58-72.

Most studies reporting income and employment of minority groups do not establish the controls necessary to see the influence of sex and ethnicity. The present study controls for sex, education, age, and location. The data shows Caucasian members to have higher median incomes than Chinese or Japanese young business professionals. It is not clear, however, to what degree this results from differing choices of fields of study, occupation, industry, or employment mobility.

Kelley, L. and W. Remus, Business Women in Hawaii; A Study in Income Disparity, *Women's Working Paper Series*, 1978, 1(3), pp. 61-74.

This study examines differences in income between men and women aged 23 to 28 who graduated from the College of Business at University of Hawaii with a Bachelors degree. Other factors being held constant, women earn 81 percent of men's salaries. This figure varies across occupational groups.

MISCELLANEOUS:

Grinnel, D. and W. Remus, How Many Waiters Do I Need Today?, *Journal of Hospitality Education*, 1983, 7(2), pp. 51-62.

This paper is a managerial level presentation of how to use decision trees to analyze restaurant staffing problems.

Remus, W., Why Academic Journals Are Unreadable: The Referee's Crucial Role, *Interfaces*, 1980, 10(2), pp. 87-90.

This paper presents the many tactics used by referees to give inadequate reviews. It suggests counter-tactics for authors to use to get good papers published. This journal is one of the top four in my area of specialization.

Remus, W., Strategies for a Publish or Perish World, *IEEE Transactions on Professional Communication*, December, 1978, 21(4), pp. 141-144.

Dr. R.J. Joenk, editor of this journal, requested and obtained the right to reprint this article from *Interfaces*.

Remus, W., Strategies for a Publish or Perish World, *Interfaces*, 1977, 8(4), pp. 469-480.

This article is a tongue-in-cheek analysis of the many "strategies" used for publishing articles in the social and hard sciences.

Remus, W., The Organization and Management of the Transcendental Meditation Movement, *Indian Administrative and Management Review*, 1975, 7(1), pp. 1-7.

This article analyzes the management of the TM organization established by Maharishi Mahesh Yogi. In particular, the impact of the "master-devotee" relationship upon the organizations functioning is examined. This is a significant contribution to the management literature since no other case study of this type of organization appears in the literature.

CHAPTERS IN BOOKS:

Remus, W. and M. J. O'Connor, Neural Networks for Time Series Forecasting in *Principles of Forecasting: a Handbook for Researchers and Practitioners* edited by J.S Armstrong, Kluwer: Massachusetts, 2001, pp. 245-256.

The chapter is a review of the literature on effectiveness of and the estimating of neural networks for time series forecasting tasks.

Marquez, L., T. Hill, W. Remus, and R. Worthley, Neural Network Models as an Alternative to Regression in *Neural Network Applications in Finance and Investing* edited by E. Turban and R. Trippi, Probus Publishing, 1993, 435-449.

This chapter reports a large simulation study where Neural Networks performed about as well as regression. However, they were particularly effective in low noise and with small sample sizes.

Kottemann, J. and W. Remus, The Effects of Decision Support Systems on Performance, *Environments for Supporting Decision Processes*, edited by H.G.Sol and J. Vecsenyi, North-Holland: Amsterdam, Holland, 1991, pp. 203-214.

This chapter reports our research on the impact of models on human decision making. In particular, models can obscure the decision made and lead occasionally to worse decision performance.

Remus, W. and M.G. Simkin, Integrating Forecasting and Decision Making in *The Handbook of Forecasting* edited by S. Makridakis and S. Wheelwright, John Wiley and Sons: New York, 1982, pp. 503-518. Also, highly revised in Second Edition, 1987, pp. 571-583.

This article is part of a handbook of forecasting written for practitioners of the art. Our role is to tie forecasting to the decision making process within the organization.

Remus, W., The Impact of Cognitive Processing Limitation on Decisions Made Using Managerial Workstations, *Human Factors in Organizational Design and Management*, edited by. H.W. Hendrick and O. Brown, Jr., North Holland: Amsterdam, Holland, 1984, pp. 63-75.

This paper reviews the literature on cognitive biases and hypothesizes why these occur. It recommends building workstations with Artificial Intelligence to augment, compensate, and coach the manager.

BOOKS:

Edge, A., B. Keys and W. Remus, *The Multinational Game*, Business Publications Inc.: Plano, Texas, Second Edition, 1985.

This computer based simulation game was developed to provide a simulated international management experience in business policy courses. The game consists of competing multinational firms each making two products in each of three countries (US, West Germany, and Japan). The relative economic advantages of operations in each are accurately portrayed.

Edge, A., B. Keys and W. Remus, *The Multinational Game Instructor's Manual*, Business Publications Inc.: Plano, Texas, Second Edition, 1985.

This is the instructor's manual for the preceding business game.

Remus, W. and R. Sprague, editors, *Proceedings of the Twelfth International Conference of System Sciences: Management Information Systems*, Western Publications: Hollywood, 1978.

This set of conference proceedings includes over three dozen papers on the theory and application of information systems to management's problems.

Carter, P. and W. Remus, *Information and Decision Models for Management*, Scientific Press: Palo Alto, 1977.

This textbook in management science/operations research represents a major departure from traditional texts. The strength of this text is in treating each technique as computer based (as they all are in the real world) and concentrating on the managerial aspects of the methods. Since the text comes complete with a set of interactive computer programs we selected the Scientific Press, a specialty house in this area, to publish it.

Remus, W. and R. Sprague, editors, *Proceedings of the International Conference of System Sciences: Management Information Systems*, Western Publications: Hollywood, 1978.

This publication contains the edited version of the 30 MIS papers presented at Hawaii International Conference on the System Sciences XI.

NON-REFEREED CONTRIBUTIONS TO THE LITERATURE:

Remus, W., Review of Introductory Business Forecasting, *International Journal of Forecasting*, 1990, 6(4), pp. 564-565.

Just a review of a textbook.

Remus, W., Research Published in the top four MIS Journals: 1986-90, *MIS Interrupt*, 1991, 50, pp. 2-3.

An analysis of the 1986-90 publications in the top four MIS journals and the schools associated with each article.

Remus, W., Articles Published in the top four MIS Journals: 1985-89, *MIS Interrupt*, 1990, 47, pp. 4-5.

An analysis of the 1985-89 publications in the top four MIS journals and the schools associated with each article.

Remus, W., Articles Published in the top four MIS Journals: 1984-88, *MIS Interrupt*, 1989, 43, p. 5.

An analysis of the 1984-88 publications in the top four MIS journals and the schools associated with each article.

Remus, W., The Future of Neural Networks in Forecasting, *Newsletter of the Operations Research Society of New Zealand*, July, 1995, pp. 3-5.

This paper reviews the literature on NN in forecasting and makes predictions for NN applicability to forecasting.

REFEREED PROCEEDINGS PAPERS:

Djamasbi, S., W. Remus and M. O'Connor, Does mood effect judgmental accuracy? Abstract in Program for DSS 2004 *IFIP International Conference on Decision Support Systems*, p. 14 (full paper on conference CD ROM).

Positive mood effects the number of factors considered as well as the judgmental accuracy.

Remus, W., M. O'Connor and K. Griggs, The impact of incentives on the accuracy of judgmental forecasting, *Proceedings of the Fourth International Meeting of the Decision Sciences Institute*, Vol. II, July 1997, pp. 742-744.

Incentives have been often suggested for use in experiments in judgmental forecasting in order to improve forecasting performance. Our research found them not to be useful; task feedback was useful however in improving forecasting.

Nelson, M., T. Hill, W. Remus and M. O'Connor, Time series forecasting using neural networks: should the data be deseasonalized first?, *Proceedings of the Fourth International Meeting of the Decision Sciences Institute*, Vol. II, July 1997, pp. 725-727.

Neural networks were found to perform much better when the data was deseasonalized first.

Remus, W., M. O'Connor, and K. Griggs, The Value of Reliable Information, *1994 Proceedings: Decision Science Institute*, Vol. 2, pp. 1360-1362.

This paper reports a study that finds that subjects are able to use information in a normative way to improve their forecasts. However, simple mathematical forecasting models do better than the subjects.

Remus, W., Using TQM to Improve Colleges of Business," *Proceedings of the Western Decision Sciences Institute*, 1994, pp. 426-429.

The paper describes how TQM methods can be applied to a college of business and reasons why such applications fail.

Nelson, M., T. Hill, W. Remus, and M. O'Connor, Can Neural Networks Applied to Time Series Forecasting Learn Seasonal Patterns? *Proceedings of the Hawaii International Conference on System Sciences*, Vol. III, January, 1994, pp. 649-655.

In our earlier work we applied neural networks to deseasonalized data and then made forecasts. In this work we applied them directly to the data with seasonal patterns; this second method gave inferior results.

Marquez, L., T. Hill, M. O'Connor, and W. Remus, Neural Networks for Forecasting: A Review, *Proceedings of the Hawaii International Conference on System Sciences*, Vol. IV, January, 1992, pp. 494-501.

In this paper we reviewed all studies comparing neural networks and linear regression for forecasting. The two performed comparably.

Davis, F., J. Kottemann and W. Remus, What-If Analysis and the Illusion of Control, *Proceedings of the Hawaii International Conference on System Sciences*, Vol. III, January, 1991, pp. 452-461.

This paper reports an experiment that found that what-if analysis could cause managers to be overconfident.

Marquez, L., T. Hill, R. Worthley, and W. Remus, A Simulation Study of Neural Networks, *Proceedings of the Hawaii International Conference on System Sciences*, Vol. IV, January, 1991, pp. 129-135.

In this paper we compared several neural networks with linear regression in capturing functional forms. Linear regression fit better given adequate data and medium to low noise levels.

Remus, W. and T. Hill, Capturing Human Judgment with Neural Networks, in *Expert Systems and Neural Networks*, edited by M. H. Hamza, Acta Press: Anaheim, 1990, pp. 20-22.

This paper is a completed version of the below in-progress HICSS paper. In this paper we compared several neural networks with linear regression in capturing managerial judgment. Linear regression fit a little better but both gave similar cost performance in the production scheduling task.

Remus, W. and T. Hill, Neural Networks for Managerial Judgment, *Proceedings of the Hawaii International Conference on System Sciences*, January, 1990, Vol. IV, pp. 340-244.

In this paper we compared several neural networks with linear regression in capturing managerial judgment. Linear regression fit a little better but both gave similar cost performance in the production scheduling task.

Remus, W., Using Students as Subjects in Experiments on Decision Support Systems, *Proceedings of the Hawaii International Conference on System Sciences*, January, 1989, Vol. III, pp. 176-180.

This empirical study found that undergraduate subjects performed differently than managers in experimental studies. The former made both more costly and more erratic decisions.

Kottemann, J. and W. Remus, When and How Cognitive Style Impacts Decision Making, *Proceedings of the Hawaii International Conference on System Sciences*, January, 1988, Vol. III, pp. 223-231.

The paper reports a study that found cognitive style to have meaningful impact during training for decision making (not once the decision was learned).

Remus, W. and J. Kottemann, Tracking Support: A New Direction for DSS Design? *Proceedings of the Hawaii International Conference on System Sciences*, January, 1987, Vol. VI, pp. 638-646.

The paper reports the phase II results of the NSF grant. Namely, regression provides a better model of decision making than does tracking.

Remus, W., Human Cognitive Limitations and Their Implications for Decision Support Systems Design, *Proceedings of the Hawaii International Conference on Systems Sciences*, January, 1985, Vol. I, pp. 615-624.

The paper reviews the literature on decision biases in order to make prescriptions about how to implement computer interfaces to compensate or support biased decision makers.

Remus, W. and D. Vellanga, Telecommunications in the Shipping Industry, *Proceedings of the Western American Institute for Decision Sciences Conference*, 1984, pp. 263-265.

This paper is a preliminary version on our research into the costs and benefits of using telecommunication systems for shipping. Reported is only our literature review and research design.

Edge, A. and W. Remus, The Impact of Hierarchical and Egalitarian Organization Structures on Group Decision Making and Attitudes, *Developments in Business Simulations and Experiential Exercises*, 1984, pp. 35-39.

This is an empirical study on the impact of organization on decision making. Hierarchical organizations work better when sacrifice is required but otherwise few differences were noted.

Farwell, D. and W. Remus, A Decision Support System for Business School Accreditation, *Proceedings of the Hawaii International Conference on the System Sciences*, Vol. I, January, 1984, pp. 584-594.

This paper discusses the decision support system used to plan the College of Business Administration's application for re-accreditation. It allowed us to get control of student enrollment levels and plan for delivering quality education.

Remus, W., Managers: Optimizers or Trackers?, *Proceedings of the Australian Society for Operations Research*, August 28, 1983, pp. 276-285.

This paper arrays the evidence that managers are trackers when faced with discrete decisions. It focuses particularly on the results of the study reported in the following paper.

Remus, W., An Investigation of Tracking Behavior in Managerial Decision Making, *Proceedings of the Hawaii International Conference on the System Sciences*, January, 1983, Vol. I, pp. 445-453.

This paper provides empirical support for the existence of managerial tracking above and beyond that accounted for by "optimal" model. This finding is consistent with Robin Hogarth's suggestions in *Psychological Bulletin*.

Grinnel, D. and W. Remus, How Many Waiters Do I Need Today? *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1982, pp. 7-9.

This paper is a managerial level presentation of how to use decision trees to analyze restaurant staffing problems.

Diamond, J.M., J. Bidgood and W. Remus, Coming Home: A Study of Managerial Women in Transition, *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1982, pp. 73-75.

This paper compares two groups of managerial women: one group continued their careers while the other altered their careers to spend more time with their families. Obvious demographic differences do not differentiate the two groups but individual attitudes, values, and goals did.

Remus, W., Consistency in Business Games, *Developments in Business Simulations and Experiential Exercises*, 1982, pp. 240-242.

This paper reports an empirical study in which the different competitive settings created by different industries in a business simulation game were found to be characterized by different levels of erratic decision making even after rank, time, and rank-time interaction were blocked upon. This explained the results a study by Makridakis and Hogarth on consistency in decision making.

Remus, W., An Empirical Study of Graphical and Tabular Displays and Their Interaction with Demand Variability, *Proceedings of the Hawaii International Conference on the System Sciences*, January, 1982, Vol. I, pp. 821-830.

This paper is a second empirical study following up on the hypotheses suggested by the paper I gave at Hawaii International Conference on the System Sciences in 1980. In the current study display type and demand variability were found to interact. Graphical displays are superior when demand is highly variable. Tabular displays are superior when demand has low variability.

Remus, W. and L. Kelley, Business Women in Hawaii: A Study of Income Disparity Using Log-linear Models, *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1980, pp. 41-44.

In our earlier work on sex-pay differentials published in Women's Working Paper Series, we used contingency table analysis to test the hypotheses of interest. In paper we re-analyzed that data using the most sophisticated log-linear model. This allowed us to test for the interaction for the independent variables.

Isa, D. and W. Remus, Predicting Who Will Actually Attend Your MBA Program, *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1980, pp. 133-136.

The paper illustrates the effectiveness of discriminant analysis in predicting graduate student enrollments. The data used was from 1974-75 Hawaii MBA Program. Not surprising, local residents and those given financial aids were most likely to enroll.

Johnson, L. and W. Remus, A Comparison of the Problems of First Year Men and Women MBA Students, *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1980, pp. 100-103.

The paper finds women have basically the same problems as men in the MBA Program. Ethnicity and marital status are the crucial variables.

Remus, W., Biases in Human Decision Making and Their Impact on Decision Support System Design, *Proceedings of Hawaii International Conference on the System Sciences XIII*, Vol. II, January, 1980, pp. 119-132.

This is a major review of the empirical literature on biases in human decision making. The intent of the paper was to relate these studies to the problem of supporting managerial decision making using a computer.

Remus, W., Graphical Versus Tabular Aids to Support Decision Making, *Proceedings of Hawaii International Conference on the System Sciences XIII*, Vol. II, January, 1980, pp. 159-168.

This empirical study contrasts graphical and tabular aids when making the production scheduling decision. The study brings into question a study by Dickson et al. in Management Science that reached different conclusions.

Remus, W. and S. Jenner, Attitudinal Differences Between Students Playing a Business Game Singly and As Teams, *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1979, pp. 123-127.

Students find business games to be enjoyable no matter how they are organized. When playing singly, however, performance and satisfaction have a higher correlation than when organized as teams.

Remus, W. and C. Portwood, Experimental Designs for Comparing Teaching Strategies, *Proceedings of the Western American Institute for Decision Sciences*, March, 1978, pp. 123-127.

This paper discusses the many statistical methods that can be used to evaluate innovative teaching approaches. The strengths and limitations of each method are pointed out and recommendations are made to improve the control of confounding variables.

Gilbert, P. and W. Remus, Design and Evaluation of a Computerized Registration System, *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1977, pp. 69-71.

A perennial problem at the College of Business has been to register our large number of students to the limited number of course offerings. In this paper Gilbert and I report the results of the Fall 1976 use of a computer based registration system including its impact on student attitudes. These results led to the formal adoption of this means for registering students.

Remus, W., Using Decision Rules for Better Decisions, *Proceedings of the National American Institute for Decision Sciences Conference*, November, 1976, pp. 100-102.

This paper summarizes the literature on decision rules in a non-technical manner easy for managers to understand. Included prominently were our four studies on mediating factors.

Remus, W., R. Sprague and P. Gilbert, Assessing Information Needs Using a Modified Delphi Technique, *Proceedings of the National American Institute for Decision Sciences Conference*, November, 1976, pp. 543-545.

This paper proposed the use of the structured communication techniques (Nominal Grouping, Delphi, and Modified Delphi) to identify the information needs of managers when designing a Management Information System. All previous methods use individuals rather than groups making this paper an important contribution to the literature.

Remus, W., An Effective Learning System for Quantitative Methods Courses: Some Results, *Proceedings of the Western American Institute for Decision Sciences Conference*, March, 1976, pp. 187-191.

This paper reports the results of my successful application of the teaching by objectives methodology to a large class in quantitative methods.

Remus, W., An Effective Learning System for Quantitative Methods Courses, *Proceedings of the Midwest American Institute for Decision Sciences Conference*, April, 1975, pp. 105-110.

This paper presents the learning system approach to course design with special attention to its application to quantitative methods courses. This technique was developed by Dr. Lawrence Alexander of Michigan State and explained in his book, *Learning Systems Design*.

Remus, W., Linear Decision Rules in a Competitive Environment, *Proceedings of the Midwest American Institute for Decision Sciences Conference*, April, 1975, pp. 288-292.

This paper reports an empirical study on the effectiveness of linear decision rules in the changing, unstable environment created in a business game. The study demonstrates that the provision's of Bowman's managerial coefficient theory hold, and measures the learning and rank order effects.

Remus, W., Generating Correlated Pairs of Random Variables, *Proceedings of the Midwest American Institute for Decision Sciences Conference*, April, 1973, pp. C27-C30.

This paper proposes an alternative way of generating correlated normal random variables in simulation models.

OTHER CONFERENCE PAPERS AND PRESENTATIONS:

Remus, W., M. O'Connor, and K. Lim, Improving judgmental forecasts with bootstrapping and cognitive feedback support, presented at the International Symposium on Forecasting, June, 1999 (An abstract appears in the Program).

The study reported here finds cognitive feedback more effective than bootstrapping in improving judgmental forecasting accuracy.

Remus, W. Why Managers Make Judgmental Forecasts (Rather Than Use Math Models), presented at the Association for Information Systems Conference, August, 1997 (An abstract appears on pages 77-79 of the Proceedings).

There are many reasons for this which are either rational for the manager or the organization; the reasons are presented in the paper.

Remus, W. Towards a Theory Linking Forecasting and Decision Making, presented at the Association for Information Systems Conference, August, 1997 (An abstract appears on pages 42-43 of the Proceedings).

This paper is the literature review and theory for the late 90's experimental series involving Lim, O'Connor and Remus.

Remus, W., M. O'Connor, and K. Griggs, Does Feedback Improve the Accuracy of Judgmental Forecasts? presented at the International Symposium on Forecasting, June, 1996 (An abstract appears on page 99 of the Program).

This paper examines five kinds of feedback and their impact on judgmental forecasting accuracy. While simple outcome feedback and feedback of performance measures failed to improve the accuracy of forecast, task feedback (feedback of task characteristics) did significantly improve forecasting accuracy.

M. O'Connor and W. Remus, Judgmental Forecasting of Trends and Changes in Trends, presented at the International Symposium on Forecasting, June, 1996 (An abstract appears on page 130 of the Program).

This paper examines the often-noted effect that people are more accurate in predicting upward trending series than in predicting downward trending series. It confirms this effect and suggests that it is due to specific simplistic forecasting strategies.

O'Connor, M., K. Griggs, and W. Remus, Will Reliable Information Improve the Judgmental Forecasting Process? presented at the International Symposium on Forecasting, June, 1994 (An abstract appears on page 146 of the Proceedings).

This paper reports a study that finds that subjects are able to use information in a normative way to improve their forecasts. However, simple mathematical forecasting models do better than the subjects.

Hill, T. and W. Remus, Neural Networks in Forecasting and Decision Making, Abstract in the *Proceedings of the International Conference on Information Systems*, 1992, p. 273.

This presentation summarized our many research efforts to use neural networks for forecasting and decision making for an Information Systems audience. This presentation is a subset of the IJF 93 paper.

M. O'Connor, W. Remus, and T. Hill, Neural Networks for Time Series Forecasting, presented at the International Symposium on Forecasting, August, 1992 (An abstract appears on page 22 of the Proceedings).

This research compares neural network models with numerous standard forecasting models in forecasting the Makridakis 111 data series. The neural networks did better for monthly and quarterly data.

O'Connor, M., W. Remus and K. Griggs, How People Extrapolate Time Series When Structural Changes Occur, presented at the International Symposium on Forecasting, August, 1992 (An abstract appears on page 31 of the Proceedings).

In the study, people are asked to extrapolate times series when major changes occur in the time series structure; people did not do as well as classical forecasting models.

Kottemann, J. and W. Remus, Functional and Dysfunctional Effects of What-If Analysis: Two Laboratory Studies, Presented at the IFIP Conference on DSS, June, 1990.

This paper reports an experiment (and a further confirming experiment that found that what-if analysis could cause myopic decision making).

Remus, W., Criterion Referenced Judgmental Forecasting Models, International Symposium on Forecasting, June, 1989.

This article provides the mathematical basis for the selection of the best judgmental forecasting model where U-shaped criterion functions exist.

Remus, W., Towards a Theory Linking Forecasting and Decision Making, presented at the International Symposium on Forecasting, June, 1988.

This invited paper links forecasting practices to decision performance and makes numerous unexpected predictions.

Remus, W. and J. Kottemann, Considerations in the Design of an Artificially Intelligent Statistician, presented at the TIMS International Meeting, July, 1986 (Abstract appeared in the *TIMS XXVII Program*, p. 52).

This paper is an early report of the research described in the 1986 *Management Information Systems Quarterly* article.

Remus, W., Unit Rules for the Admission Decision?, presented at the Western American Institute for Decision Sciences Conference, March, 1984. (Abstract is on p. 211 of the *Proceedings of the Western American Institute for Decision Sciences Conference*).

This paper reports an empirical study showing unit rules (as advocated by Dawes) to be a poor way to make the admissions decision.

Remus, W., Assessing Service and Equipment Options Available to the Manager, presented at the Pacific Telecommunications Conference Workshop, January 21, 1983.

This tutorial focuses on how to evaluate and choose high technology equipment and services. Among the methods discussed was cost-benefit and present value analysis.

Remus, W., Robotics and Its Implications for Government Policy, presented at the American Society of Public Administrations National Conference, March, 1982.

This paper explains the emergence of robots in government and industry. It suggest the policy directions appropriate for the government.

Remus, W., Does Performance Feedback Improve the Production Scheduling Decision? presented at Western American Institute for Decision Sciences meeting, Hilo, Hawaii, March, 1981.

This paper reports an empirical experiment in which varying levels of performance feedback were provided to subjects making simulated production scheduling decisions. The improvement in cost and other measures was a nonlinear function of the information provided. Some evidence was found for information overload.

Remus, W., Research in Decision Making: Its Implications for Financial Management, presented at New Approaches and Technologies in Management, Kuala Lumpur, Malaysia, June, 1980.

At the request of the conference chairman, Dr. Aziz Hamid, I prepared this paper which discusses the common errors in financial decision making and suggest how to avoid them.

Edge, A. and W. Remus, The Use of a Multinational Management Game in the Management Curricula, presented at the Western Regional Meeting of the Academy of Management, April, 1979.

This paper reports the incorporation of international management into the curricula by using a multinational management game as part of the capstone business policy course.

Remus, W. and C. Wong, The Impact of Grade Point Inflation on Traditional and OR-based MBA Admission Criteria, presented at ORSA/TIMS National meeting, November, 1978 (Abstract in *ORSA/TIMS Bulletin*, 6, p. 195).

Three traditional MBA admission criteria plus criteria based on regression and discriminant analysis are examined. Data from the Hawaii MBA program reveal that adjusting for

inflation in undergraduate grades does not improve the performance of any criteria in predicting MBA grades. Professional judgement by the admissions officer outperformed all other criteria.

Remus, W. and C. Wong, An Evaluation of Six Models for Admission Criteria for a Masters of Business Administration Program, presented at the National Conference of the American Institute for Decision Sciences, October, 1978 (Abstract in the *Proceedings of the National American Institute for Decision Sciences Conference*, Vol. 2, p. 248).

This paper evaluates the following six models for making the MBA admission decision: the AACSB minimum criterion, the rules currently used by University of Hawaii and Michigan State, regression and discriminant rules based on Hawaii data, and the admission officer's judgement. The latter yielded the best decisions.

Remus, W., Planning Using Structured Communication Techniques, presented at the Sixth International Conference of Planners, November, 1977.

The paper presents the many applications of the structured communication techniques (Delphi, Nominal Grouping and Modified Delphi) to organizational planning.

Portwood, C. and W. Remus, How to Handle Confounding in Educational Evaluation, presented at the National American Institute for Decision Sciences Conference, October, 1977 (Abstract in the *Proceedings of the National American Institute for Decision Sciences Conference*, p. 615).

This paper discusses the confounding usually introduced when evaluating the utility of a new classroom technique. The paper prescribes the simultaneous application of regression and cluster sampling techniques to solve the problem.

Remus, W., Utilization of Linear Decision Rules in Competitive Environments, presented at the National American Institute for Decision Sciences Conference, November, 1975.

This paper reports the results of a study on the effectiveness of the linear model to capture the dynamics of a business game. In an oligopolistic game, the rules capture the key features of an oligopoly.

Remus, W., P. L. Carter and L.O. Jenicke, The Impact of Information on Learning in Managerial Coefficient Models, presented at ORSA/TIMS national meeting, May, 1975 (Abstract in *Bulletin of the Operations Research Society of America*, p. B-46).

This paper reports the second of three studies on the impact of mediating factors (in this case, differential information) on the decision making process. The three laboratory studies

were conducted using over 100 subjects each; the experimental design of each was similar, but different mediating variables were manipulated.

Remus, W., The Business Game as a Decision Making Laboratory, presented at the Midwest Academy of Management Gaming Workshop, April, 1975.

This paper reviews the literature on the use of games to evaluate various decision theories.

Carter, P. L., W. Remus and L.O. Jenicke, Management Coefficient Models in Changing, Nonlinear Environments, presented at the National American Institute for Decision Sciences Conference, October, 1974 (Abstract in the *Proceedings of the National American Institute for Decision Sciences Conference*, p. 139).

This paper reports the results of the third in a series of three research studies on the impact of various mediating factors (in this case degree of performance feedback) when making recursive decisions. The three laboratory studies were conducted using over 100 subjects each; the experimental design of each was similar but different mediating variables were manipulated.

Carter, P. L., W. Remus and L.O. Jenicke, Learning in Managerial Coefficient Models, presented at the Midwest Academy of Management, April, 1974 (Abstract in the *Proceedings of the Midwest Division of the Academy of Management*, 1974).

This paper reports the first of three studies on the impact of mediating factors (in this case the nature of the environmental instability) on the decision making process. The three laboratory studies conducted using over 100 subjects each; the experimental design of each was similar but different mediating variables were manipulated in each study.

OTHER RESEARCH:

Remus, W., UH BBA Alumni Survey Results, *Ka Leo Okapo'e Ho'Ohana*, Winter, 1979, 3(3), 3 pp.

This article presents my analysis of the data collected in the 1977 CBA alumni survey on our BBA alumni.

Remus, W., UH MBA Alumni Do Well, *Ka Leo Okapo'e Ho'Ohana*, Spring, 1978, 3(1), 3 pp.

This article presents my analysis of the data collected in the 1977 CBA alumni survey on our BBA alumni.