

## **J. Scott Armstrong** **Career and Useful Findings**

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### **Career Objectives**

To follow Benjamin Franklin's objectives *to discover useful scientific findings* by testing alternative reasonable hypotheses and disseminating the findings.

### **Education**

*M.I.T.*, Ph.D. in Management (1968)

*Carnegie Mellon University*, M.S. Industrial Administration (1965)

*Lehigh University*, B.A. in Applied Science (1959), and B.S. in Industrial Engineering (1960)

### **University of Pennsylvania**

The Wharton School, Standing Faculty, September 1968 – June 2020

### **Honors, Awards and Recognition**

- “Lifetime Achievement Award in Climate Science” from the Heartland Institute at the 12<sup>th</sup> International Conference on Climate Change (2017) [Acceptance speech.](#)
- “Armstrong Brilliance in Research in Marketing Award” from the Global Alliance of Marketing and Management Associations, Hong Kong (2016).
- Outstanding Paper Award 2014-2015, *International Journal of Forecasting*. Andreas Graefe, J. Scott Armstrong, Randall Jones and Alfred Cuzan.
- Named one of the “[25 Most Famous College Professors Teaching Today](#)” (*College Stats* 2010).
- Listed 26<sup>th</sup> on “[The 100 most prolific economists using the p-index.](#)” *Scientometrics*. Gangan Prathap (2010).
- Listed as one of the “[55 of the Hottest, Smartest, Most Talked About College Professors](#)” (2007).
- Ranked 15th among U. S. marketing professors based on peer ratings, citations, and publications ([Kirkpatrick & Locke, 1989](#)).
- [AdPrin.com](#) site won the Merlot Award as the best educational site in business and economics (2004).
- Received the “[Distinguished Scholar Award](#)” from the *Society for Marketing Advances*, 2000.
- Presented the Silver Jubilee Lecture for the College of Business, Massey University, New Zealand in 1997.
- Honorary Fellow, “Distinguished Contributions to Forecasting,” *International Institute of Forecasters*, 1996.

## Founder or Co-founder

[IronLawofRegulation.com](#) (2016). This website determines whether there is scientific evidence showing that regulations might be useful in certain situations and thus to better design regulations. To date, we have been unable to find scientific evidence for any improvements.

[GuidelinesforScience.com](#) (2016). Provides checklists of operational guidelines to aid scientists in complying with scientific principles, and to help others assess the extent to which research complies with science.

[TheClimateBet.com](#). Monthly updates were collected since 2007 of my 10-year “bet” on global warming with former Vice President Albert A Gore. At the end of the 10-year period, the Whole-Earth Thermometer (satellite temperatures) showed no substantial change from 2007. (For the outcome of the “bet” after the 10 years, see [here](#)).

[PollyVote.com](#). (2004). Founded by J. Scott Armstrong, Alfred Cuzan, and Randall Jones. Andreas Graefe joined a few years later and is now the leader. The PollyVote combines forecasts from a variety of forecasting methods of the U.S. Presidential popular vote from 2004 through 2020. It is the most accurate Presidential forecasting method.

[AdvertisingPrinciples.com](#). (2000) Founded website and in 2004 it received the [MERLOT Award](#) for the “Best online learning resource in business & management.”

[ForecastingPrinciples.com](#) (1997.) received five awards and more than 16 million visits.

[International Journal of Forecasting](#). (1985). Its 1988 citation impact factor was almost as high as that for *Management Science*, thanks to the use of guidelines for attracting papers with *experimental findings*.

[Journal of Forecasting](#) (1982). Spyros Makridakis, Robert Fildes, and I founded this journal. The citation impact factor in 1982-83 was 7<sup>th</sup> highest for “business, management, and planning journals.”

[International Institute of Forecasters](#). (1982). One of three Founders of IIF. I was the first president.

[International Symposium on Forecasting](#). (1981- present). ISF conferences are held annually at international locations.

## Useful Scientific Findings

The following summary covers over 100 useful findings in 18 areas of my research. To the extent feasible, the findings were based on experimental evidence.

### *Advertising*

1. Developed the [Persuasion Principles Checklist](#) for *creating* persuasive ads.
2. Developed and validated the [Persuasion Principles Audit](#) which yields a Persuasion Principles Index (PPI) to assess the compliance with evidence-based principles.
3. My “Persuasion Principles Index” provides more accurate predictions of the effectiveness of advertisements than those obtained from copy testing.
4. My review found no evidence-based persuasion principles in a sample of advertising textbooks and handbooks.
5. Government mandated disclaimers in advertising confuse customers and harm their decision-making. The paper has been used as evidence in court cases.

### *Applied Statistics*

1. Tests of statistical significance may be harmful to the advancement of science. Companies using statistical significance tests as evidence of efficacy can be sued (Ziliark).
2. Attempts to identify causality by using regression analysis of non-experimental data are misguided
3. The Root Mean Square Error (RMSE) is inappropriate for comparing accuracy of forecasting methods.
4. The Relative Absolute Error (RAE) is intuitive and valid for comparing the accuracy of forecasting methods across series and has become an accepted metric in forecasting.

5. Trees (segmentation methods) are more accurate than regression analysis when forecasting using data with interaction, non-linear effects, and large sample sizes.
6. Showed dangers with the failure to assess reliability in factor analysis.

#### *Climate Change*

1. There are [no scientific forecasts to support the U. S. Government's plan to list polar bears as an endangered species.](#)
2. Forecasts that adhere to scientific principles show no long-term trends in global mean temperature.
3. IPCC (Intergovernmental Panel on Climate Change) forecasts of global warming [violate 72 out of the 89 principles relevant to forecasting climate temperatures.](#)
4. [Global mean temperature forecasts that adhere to scientific principles show no long-term trends.](#)
5. IPCC forecasts of global warming [violate the Golden Rule of Forecasting.](#)
6. IPCC forecasts of global [warming violate Occam's Razor.](#)
7. Currently there is [no scientific basis for the forecasts of dangerous manmade global warming.](#)
8. IPCC forecasts for global warming violated seven of the eight required criteria for the scientific method.

#### *Conflict Situations (e.g., war, negotiations, terrorism)*

1. Determined that expert judgment has no value in [forecasting decisions in conflict situations.](#)
2. Developed active role-playing procedure for two or more parties as a way to predict decisions in conflict situations. Tests found [Role playing](#) (AKA "Simulated Interaction") to be much more accurate than expert judgment, the current method.
3. [Role-thinking](#) ("put yourself in their shoes") did not improve accuracy of judgmental predictions in conflict situations.
4. "Structured analogies" using expert information [was substantially more accurate than expert judgments for predicting outcomes in conflict situations.](#)

#### *Debunker*

1. The Boston Consulting Group ("*BCG Matrix*") has not demonstrated benefits for companies.
2. *Porter's Five Forces* has no predictive validity.
3. *Kahneman and Tversky's* "heuristics and biases" research lacks predictive validity.

#### *Economic Forecasting*

1. Contrary to expert opinions by econometric experts, [econometric methods are relatively more useful for long-range forecasts than for short-range forecasts.](#)
2. Econometric methods provide more [accurate long-range forecasts](#) than do judgment or extrapolation methods.

#### *Education*

1. [Business school prestige rests upon research](#), not teaching (based on analyses of non-experimental data).
2. Students' use of "time contracts" [increased learning.](#)
3. [Experiential exercises increase the rate of learning.](#)
4. Developed and assessed a method of "[learning by objectives.](#)" I found that it increased the rate of learning.
5. Proposed the "[natural learning](#)" approach to learning and provided experimental research on its effectiveness.
6. [Student evaluations of teachers reduce student learning along with the satisfaction of students and teachers.](#)
7. [Experiential exercises are more effective than lectures for skill training.](#)

#### *Election Forecasting*

1. [Developed and tested a knowledge model \(index method\) to predict issues.](#) It improved accuracy.
2. The "[Biographical Index](#)" predicts U. S. Presidential elections accurately.
3. [Politicians who look competent are more likely to get elected.](#)
4. The "take-the-best" (variable) strategy is a quick [and accurate way to forecast U.S. Presidential elections.](#)
5. Combining forecasts within and across six different combined methods [reduced error by half.](#)

6. Using all 24 unique variables from 8 econometric models in an equal-weights “knowledge model” for [U.S. elections reduced forecast error by 43%](#).

#### *Financial forecasting*

1. A review of 15 previously published forecasts showed that [annual earnings forecasts by the firm’s managers were more accurate than those by professional analysts, and that judgmental forecasts were more accurate than extrapolations](#).
2. [Firms that have an explicit objective to increase profits are more profitable](#).

#### *Forecasting Methods*

1. [Golden Rule of Forecasting](#): Be conservative by adhering to cumulative knowledge about the situation and forecasting methods. Our review of experimental evidence found that, on average over the 28 guidelines, violations of a typical guideline increased forecast error by more than 40%.
2. [Simple Forecasting](#): Complexity *increases* forecast error by 27 percent on average in the 25 papers with quantitative comparisons for all types of forecasting methods. This is, Armstrong and Green believe, the first test of the predictive validity of Occam’s razor.
3. [Seer-sucker Theory](#): People do not accept evidence that expert judgments have little relationship to forecasting accuracy.
4. [Forecasting audit](#): Developed a procedure to conduct a ["forecasting audit."](#)
5. [Knowledge Models](#): Developed and tested knowledge models (“index models”) as a way to forecast when there are many important variables and much knowledge. [Knowledge models are much more accurate than data models](#).
6. [Data models](#): Such as multiple regression, stepwise regression, data mining, machine learning) should not be used for forecasting.
7. [Rule-based forecasting \(RBF\)](#): Proposed and validated RBF for the selection and combination of extrapolation forecasts. Found to be more accurate than equal-weights combining for annual forecasts.
8. Proposed and tested the use of [causal forces for the selection and weighting of extrapolation methods](#). This produced substantial improvements in accuracy for long-term forecasts.
9. [Contrary-series rule](#): Trends should not be extrapolated for “contrary series” (historical trend contrary to expectations)
10. [Decomposition by causal forces](#): Developed and tested this approach for the extrapolation of time series where causal forces in a series conflict with one another. It yielded substantial improvements in accuracy.
11. [Nowcasting, based on three comparative tests, reduced error by 1/3](#) for short-term forecasting.
12. Multiplicative decomposition improves the accuracy of judgmental predictions for problems involving uncertainty
13. Time-series with trends that are not in the expected direction have prediction intervals that [are asymmetric in the logs](#). They should be flagged and shifted in the direction of the causal forces.
14. Conducted meta-analysis and found that [judgmental bootstrapping improves accuracy](#) vs. judgmental forecasts.
15. Proposed that trends in extrapolation should be “modified” toward zero, later called “damping” ([Long-Range Forecasting](#), page 153). Subsequently supported by Everette Gardner’s experiments.
16. Combining forecasts [within a method](#) reduced forecast error by 12%.
17. [Combining forecasts within individual methods and then combining across the combined forecasts reduced errors by as much as 50% for election forecasts](#).

#### *Marketing*

1. [Experts were no better than non-experts in predicting the outcomes of experiments on consumer behavior](#)
2. Found [no evidence-based principles](#) in an audit of marketing principles textbooks.
3. Found [frequent conflicting findings, and a detrimental trend](#) with respect to replications in marketing.

#### *Marketing Research*

1. Discovered that [extrapolation across waves](#) can be used to correct for non-response bias in mail surveys.
2. Prepaid [monetary incentives](#) increase mail survey response rates but promised incentives do not.
3. [Brief descriptions](#) are sufficient for estimating intentions to purchase new products.
4. Business-reply postage is not cost-effective for mail surveys: [Provided experimental evidence](#).

### *Organizational Behavior*

1. [Face-to-face meetings harm](#) forecasting and decision-making.

### *Peer Review*

1. [Complex writing increases the likelihood that a paper will be accepted for publication](#) if the author is already well-respected. Otherwise, it is harmful.
2. [Invited papers were more highly cited, had more important findings, and were less expensive to process](#) than papers published through traditional journal reviews.
3. Less intelligible [writing enhances academic prestige](#) and the likelihood that paper will be accepted by journals.
4. [Journal peer review](#) retards advances in science because reviewers have difficulty in discarding their current beliefs.

### *Personnel Research*

1. [High pay and incentive payments for top executives are detrimental to firms](#), based on experimental evidence.
2. Practitioners often ignore [well-established variables](#) for personnel selection.
3. [Subjective factors should not be used in personnel selection](#).

### *Scientific Method*

1. Kesten Green and I developed an evidence checklist to rate whether a paper complies with science. See [Guidelinesforscience.com](#).
2. A primary reason for the failure to comply with the scientific method is due to the advocacy method funded by government grants. Forthcoming in our book, *The Scientific Method*.
3. Implementation of the scientific method can be improved by the use of evidence-based checklists that require compliance with the scientific method as part of the contract.
4. [It is common for authors to cite papers incorrectly](#). Kesten Green and I propose that authors conduct a survey of their cited authors to verify that all substantive findings are correctly summarized.
5. We propose that authors verify that their references have been read by at least one of the authors.
6. The “[method of multiple reasonable hypotheses](#)” must be used in all experimental studies.
7. [Obtained evidence of bias](#) against the publication and citation of papers with controversial findings.
8. [Showed conflicts between scientific advancement and the advancement of scientists](#).
9. [Role-playing can serve as a useful substitute for experimentation in some situations](#).
10. [Quasi-experimental findings have some validity. They yield directional results consistent with other types of experiments](#).
11. The importance of the research findings is more important than the number of publications when evaluating researchers.
12. Few papers published in academic journals comply with the scientific method.

### *Social Responsibility*

1. [Stakeholder role, in combination with social accounting, increases socially responsible decisions](#).
2. Our review of experiments found that [government-mandated programs for social responsibility may be harmful](#).

### *Strategic Planning*

1. [Our experiments found that market-share objectives harm profits](#).
2. Use of the “portfolio planning matrix” (BCG) [leads to less profitable decisions](#).
3. [Thinking about how another party acts did not improve predictions of how that party will act](#).
4. “Escalation bias” was not replicated among decision-makers in marketing.
5. “Scenarios” can improve strategic planning.

## Books

[Long-Range Forecasting: From Crystal Ball to Computer](#). New York: Wiley Interscience, 1978 (1<sup>st</sup> Edition) and 1985 (2<sup>nd</sup> Edition). Sold more than 15,000 copies.

[Principles of Forecasting: A Handbook for Researchers and Practitioners](#). Boston: Kluwer Academic Publishers, 2001. I wrote three chapters and was Editor of the remaining 17 chapters by 40 authors who summarized evidence-based principles for improving forecasting methods.

[Persuasive Advertising: Evidence-based Principles](#). Basingstoke, U.K.: Palgrave Macmillan, 2010. Finalist Berry-American Marketing Association 2011 Award. (7 reviews on Amazon, all top ratings). German translation, 2011. Chinese translation, 2016.

*The Scientific Method*, J. Scott Armstrong and Kesten C. Green, Forthcoming, 2021.

## Journal Papers

Of the 330,000 scholars listed on SSRN, I was ranked #37 based on the number of publications as of 2017.

*Impact Index*: Top 1% for “impact on researchers” of the 12,000 business authors on the SSRN.

*ResearchGate* lists over 500 of my publications.

*Citations*: As of January 2020, there were almost 40,000 Google Scholar citations for my research, with an h-index of 74 (papers with at least 74 cites) and 163 papers were cited ten or more times.

*Commentaries and reprints*: More than 35 of my papers have been the subject of commentaries by others. More than 30 papers have been reprinted in books.

*Mass media coverage of research*: *Google News* lists over 200 articles related to my research, but few old articles were saved. Interviewed in a documentary film, [The Global Warming War \(2015\)](#).

*Readership*: It is difficult to estimate readership of my journal articles but it is possible to track downloads of some of my *working-paper* versions. Of the 20 or so repositories, the top two for me seem to be:

*Scholarly Commons*: Over 560,000 downloads of my research papers on Scholarly Commons

*ResearchGate*: I am in the top one-percent of “reads” to date (these are defined as “views”).

## International Appointments (17 universities and 24 visits)

*LMU Munich*, Visiting Fellow (Feb 2007 & July 2011)

*Universidad de Navarra, IESE Business School*, Barcelona, Visiting Professor (May 2008)

*University of Otago*, Distinguished Visiting Professor (July 2005)

*Manchester Business School*, Honorary Simon Visiting Professor (March 2003 & May 2004)

*Lancaster University*, Visiting Fellow of the Management School (January 1997 & April 2002)

*University of Auckland*, Visiting Professor of Marketing (April 1990, July 1992 & March 1997)

*University of Tokyo*, Hakuhodo Professor of Marketing (October 1994)

*Instituto para el Desarrollo Empresarial de la Argentina (IDEA)*, Visiting Professor (July 1988; May 1993)

*Universiti Sains Malaysia*, External Examiner (July 1987)

*University of Capetown*, Visiting Professor of Marketing (January 1986)

*University of Canterbury, Department of Business Administration*, Erskine Fellow (June - August 1985)

*Chulalongkorn University, Graduate Institute of Business Admin*, Visiting Professor of Marketing (Nov-Dec 1984)

*University of Hawaii, College of Business*, Visiting Professor of Decision Sciences (Summer 1976; Summer 1983)

*University of New South Wales*, Honorary Visiting Professor of Marketing (October 1982)

*International Institute for Management Development (IMEDE, Lausanne)*, Visiting Professor (1980-81)

*Stockholm School of Economics*, Visiting Professor of Marketing (January 1974 - July 1975 & Summer 1977)

## Invited Lectures at International Universities

About 110 invited lectures at universities in 27 countries: Argentina (2), Australia (14), Austria, Brazil, Canada (6), Chile, China (2), Denmark (3), Finland (3), France (2), Germany (3), Hungary, Malaysia, New Zealand (23), Norway, Peru, Poland (2), Romania (2), Singapore (2), South Korea, Spain (2), Sweden (5), Switzerland (3), Thailand, The Netherlands (2), United Arab Emirates, and the United Kingdom (19).

## Selected Consulting

I was an expert witness in 16 cases. I was especially interested in cases involving free speech. Many involved the estimation of damages. I was on the winning side in all cases, primarily because I only accepted cases where I believed that my client deserved to win. Two of the cases made it to the U.S. Supreme Court.

Along with Kesten Green, I consulted for the Department of Justice, Department of Defense, Defense Threat Reduction Agency's Advanced Systems and Concepts Office, Central Intelligence Agency (CIA), National Intelligence Council (NIC), and National Security Agency (NSA) in an attempt to gain acceptance of the *Simulated Interaction* and *Structured Analogies* methods of forecasting decisions in conflict situations (such as wars or terrorism) to replace the use of *unaided expert judgment*.

My most interesting consulting project was referred to me by Russell Ackoff at the University of Pennsylvania. It called for me to provide forecasting methods to estimate the life-span of important world leaders. It was a top-secret project. The funder turned out to be the CIA as reported in the mass media 17 years later, and it proved to be not so secret after all.

## Teaching

- Finalist for Wharton MBA "Anvil Teaching Award" during each of my first five years at the Wharton School.
- My [AdPrin.com](http://AdPrin.com) site is currently rated as the second best of 316 advertising sites on [Merlot](http://Merlot.com).
- Obtained quasi-experimental evidence that [time contracts](#), an alternative to traditional grading, increased learner responsibility. Time contracts also increased their ability to apply new techniques in their first jobs.
- Published cases: e.g., "[Forecasting the Air Travel Market](#)," and "[The Panalba Role-Playing Case](#)," (AKA the Vanatin Case).
- Developed [97 self-directed experiential exercises](#) designed to allow students to practice evidence-based techniques for management.

## Other Work Experience

*Eastman Kodak*, Rochester, NY (June 1960 - September 1963): As an Industrial Engineer, I developed improvements to incentive systems for employees, a quality-control program for production, and their first software forecasting program for production planning.

*Xerox Corporation*, Rochester, NY (1964): Developed Xerox's first computer program for inventory control.

*Polaroid Corp.*, Cambridge, MA: Market Research (May - September 1966): Developed Polaroid's first sales forecasting program for international markets.

## Selected Publications in 18 Research Areas

### Advertising

"[Predictive Validity of Evidence-Based Persuasion Principles](#)," (with Du, Green, & Graefe), *European Journal of Marketing*, 50 (2016), 276-293 (followed by Commentaries, pp. 294-316).

"[Persuasion Principles Index: Ready for Pretesting Advertisements](#)" (with Green, Du, & Graefe), *European Journal of Marketing*, 50 (2016), 317-326.

"[Evidence on the Effects of Mandatory Disclaimers in Advertising](#)," (with Green), *Journal of Public Policy & Marketing*, 31 (2012), 293-304.

"[Evidence-based Advertising: An Application to Persuasion](#)," *International Journal of Advertising*, 30 (2011), 743-767 [followed by commentaries and my reply on pp. 768-794].

"[Using Quasi-experimental Data to Develop Principles for Persuasive Advertising](#)," (with Patnaik), *Journal of Advertising Research*, 49 (2009), 170-175.

- [“How to be Less Persuaded or More Persuasive – Review of \*Age of Propaganda\*”](#), *Journal of Marketing*, 67 (2003), 129-130.
- [“How Should Firms Select Advertising Agencies? A Review of \*Where the Suckers Moon\*,”](#) *J. of Marketing*, 60 (1996), 131-134.

### Applied Statistics

- [“Illusions in Regression Analysis,”](#) *International Journal of Forecasting*, 28 (2012), 689-694.
- [“Significance Tests Harm Progress in Forecasting,”](#) *International Journal of Forecasting*, 23 (2007), 321-336 followed by commentaries
- [“Exploratory Analysis of Marketing Data: Trees vs. Regression,”](#) (with Andress), *J. of Marketing Research*, 7 (1970), 487-92.
- [“How to Avoid Exploratory Research,”](#) *Journal of Advertising Research*, 10 (1970), 27-30.
- [“On the Interpretation of Factor Analysis,”](#) (with Soelberg), *Psychological Bulletin*, 70 (1968), 361-364.
- [“The Derivation of Theory by Means of Factor Analysis,”](#) *American Statistician*, 21 (1967), 17-21.

### Climate Change

- [“Forecasting Global Climate Change: A Scientific Approach,”](#) (with Green) In A. Moran (Ed.), *Climate change: The facts 2014* (pp. 170–186), Melbourne: Institute of Public Affairs.
- [“The Global Warming Alarm: Forecasts from the Structured Analogies Method.”](#) (with Green), 2015. SSRN Working Paper 1656056.
- [“Research on Forecasting for the Manmade Global Warming Alarm.”](#) (with Green & Soon), *Energy & Environment*, 22 (2011), 1091-1104.
- [“Validity of Climate Change Forecasting for Public Policy Decision Making,”](#) (with Green & Soon), *International Journal of Forecasting*, 25 (2009), 826-832.
- [“Polar Bear Population Forecasts: A Public-Policy Forecasting Audit,”](#) (with Green & Soon), *Interfaces*, 38 (2008), 382–405.
- [“Global Warming: Forecasts by Scientists versus Scientific Forecasts,”](#) (with Green), *Energy and Environment*, 18 (2007), 995-1019.

### Conflict Situations (e.g., war, negotiations, terrorism)

- [“Role Thinking: Standing in Other People’s Shoes to Forecast Decisions in Conflicts,”](#) (with Green), *International Journal of Forecasting*, 27 (2011), 69-80.
- [“Structured Analogies for Forecasting,”](#) (with Green), *International Journal of Forecasting*, 23 (2007), 365-376.
- [“Assessing Game Theory, Role Playing, and Unaided Judgment,”](#) *International Journal of Forecasting*, 18 (2002), 345-352.

### Economic Forecasting

- [“Review of \*The Great Depression of 1990\* by Ravi Batra,”](#) *International Journal of Forecasting*, 4 (1988), 493-495.
- [“Forecasting with Econometric Methods: Folklore vs. Fact,”](#) *J. of Business*, 51 (1978), 549-564 (commentary & reply, 565-94).
- [“A Comparative Study of Methods for Long-Range Market Forecasting,”](#) (with Grohman), *Management Science*, 19 (1972), 211-221.

### Education

- [“Natural Learning in Higher Education,”](#) in N. M. Seel (Ed.), *Encyclopedia of the Sciences of Learning*. Springer (2012), pp. 2426-2433.
- [“The Devil’s Advocate Responds to an MBA Student’s Claim that Research Harms Learning,”](#) *J. of Marketing*, 59 (1995), 101-1066.
- [“Business School Prestige: Research versus Teaching,”](#) (with T. Sperry), *Interfaces*, 24 (1994), 13-43 [commentary and reply]
- [“Review of Allen Tough’s \*Intentional Changes\*,”](#) *Academy of Management Review*, 8 (1983), 509-511.
- [“Learner Responsibility in Management Education,”](#) *Interfaces*, 13 (1983), 26-38 [commentary and reply].
- [“The Natural Learning Project,”](#) *Journal of Experiential Learning and Simulation*, 1 (1979), 1-12.
- [“Designing and using Experiential Exercises,”](#) in M. D. DeLozier, et al., *Experiential Learning in Marketing Education* (1977).

### Election Forecasting

- [“Accuracy gains from conservative forecasting: Tests using variations of 19 econometric models to predict 154 elections in 10 countries”](#) (with Graefe, & Green). PLOS ONE.



- [“Assessing the 2016 U.S. Presidential Election Popular Vote Forecasts,”](#) (with Graefe, Jones, & Cuzán) in *The 2016 Presidential Election: The causes and consequences of an Electoral Earthquake*, Lexington Books, Lanham, MD.
- [“The PollyVote Forecast for the 2016 American Presidential Election”](#) (with Graefe, Jones, & Cuzán), *PS: Political Science & Politics*, 49, 687-690.
- [“Forecasts of the 2012 U.S. Presidential Election based on Candidates’ Perceived Competence in Handling the Most Important Issue,”](#) (with Graefe), *Political Science Research and Methods*, 2 (2014), 141-149.
- [“Accuracy of combined forecasts for the 2012 Presidential Elections: The PollyVote,”](#) (with Graefe, Jones, & Cuzán), *PS: Political Science & Politics* 47 (2014), 427-431.
- [“Forecasting Elections from Voters’ Perceptions of Candidates’ Ability to Handle Issues,”](#) (with Graefe), *Journal of Behavioral Decision Making*, 26 (2013), 295–303.
- [“Predicting Elections from the Most Important Issue: A test of the take-the-best heuristic,”](#) (with Graefe), *Journal of Behavioral Decision Making*, 25 (2012), 41-48.
- [“Predicting Elections from Biographical Information about Candidates: A Test of the Index Method”](#) (with Graefe), *Journal of Business Research*, 64 (2011), 699-706.
- [“Predicting Elections from Politicians’ Faces,”](#) (with Green, Jones, & Wright), *International Journal of Public Opinion Research*, 22 (2010), 511-512.
- [“Combined Forecasts of the 2008 Election: The PollyVote,”](#) (with Graefe, Cuzán & Jones), *Foresight*, 12 (2009), 41-42.

### Financial Forecasting

- [“Relative accuracy of judgemental and extrapolative methods in forecasting annual earnings,”](#) *J. of Forecasting*, 2 437-447.

### Forecasting Methods

- [“Forecasting methods and principles: Evidence-based checklists”](#) (with Green). *Journal of Global Scholars in Marketing Science*, 28, (2018), 103-159. Selected as the best paper of the year in this journal.
- [“Simple versus complex forecasting: The evidence”](#) (with Green), *Journal of Business Research*, 68 (2015), 1678-1685.
- [“Golden Rule of Forecasting: Be Conservative”](#) (with Green & Graefe), *Journal of Business Research*, 68 (2015), 1717–1731.
- [“Golden Rule of Forecasting Rearticulated: Forecast unto Others as You Would Have Them Forecast Unto You.”](#) (with Green & Graefe), *Journal of Business Research*, 68 (2015), 1768–1771.
- [“Combining forecasts: An application to elections,”](#) (with Graefe, Cuzán & Jones (2014). *Inter J of Forecasting*, 30, 43-54. (see [IJF Best Papers Award 2017.](#))
- [“Decomposition of time-series by level and change,”](#) (with Tessier), *Journal of Business Research*, 68 (2015), 1755-1758.
- [“Conditions under which Index Models are Useful”](#) (with Graefe) *Journal of Business Research*, 64 (2011), 693-695.
- [“Methods to Elicit Forecasts from Groups: Delphi and Prediction Markets Compared,”](#) (with Green & Graefe), *Foresight*, 8 (2007), 17-20.
- [“Findings from Evidence-based Forecasting: Methods for Reducing Forecast Error,”](#) *Inter J of Forecasting*, 22 (2006), 583-598.
- [“Making Progress in Forecasting,”](#) (with Fildes), *International Journal of Forecasting*, 22 (2006), 433-441.
- [“Decomposition by Causal Forces: A Procedure for Forecasting Complex Time Series,”](#) (with Collopy & Yokum), *International Journal of Forecasting*, 21 (2005), 25-36.
- Principles of Forecasting: A Handbook for Researchers and Practitioners.* Editor, Norwell, MA: Kluwer Academic Pub (2001).

I was an author for nine of the thirty chapters, and *The Forecasting Dictionary*:

- [“Role Playing: A Method to Forecast Decisions”](#)
- [“Judgmental Bootstrapping: Inferring Experts’ Rules for Forecasting”](#)
- [“Extrapolation for Time-Series and Cross-Sectional Data”](#) (with Collopy)
- [“Expert Systems for Forecasting.”](#) (with Collopy and Adya)
- [“Selecting Forecasting Methods”](#)
- [“Combining Forecasts”](#)
- [“Evaluating Forecasting Methods”](#)
- [“Standards and Practices for Forecasting”](#)
- [“Forecasting Dictionary”](#)
- [“Identification of Asymmetric Prediction Intervals through Causal Forces,”](#) (with Collopy), *J. of Forecasting*, 20 (2001), 273-83
- [“Automatic Identification of Time-Series Features for Rule-based Forecasting,”](#) (with Adya, Collopy & Kennedy), *International Journal of Forecasting*, 17 (2001), 143-157.
- [“Potential Diffusion of Expert Systems in Forecasting,”](#) (with Yokum), *Tech Forecasting and Social Change*, 67 (2001), 95-105.

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