

William Hedgcock

University of Iowa - Tippie School of Management - S252 Pappajohn Business Building - Iowa City, IA 52242
(office) 319-335-0894 – (fax) 319-335-3690 – (e-mail) william-hedgcock@uiowa.edu

EDUCATION

University of Minnesota, Carlson School of Management **May 2002 – July 2008**

Ph.D. Business
Advisor: Akshay Rao
Major Field: Marketing
Supporting Field: Cognitive Science

Macalester College **May 1996**

Bachelor of Arts (Economics) &
Bachelor of Arts (Psychology)
Minor in Mathematics

HONORS, AWARDS, SCHOLARSHIPS

- NSF Doctoral Dissertation Research Grant (#0647647), 2007
- University of Minnesota – Graduate School Dissertation Fellowship, 2007
- Fellow, AMA/Sheth Doctoral Consortium, Arizona State University, 2007
- Carlson School Summer Research Fellowship, 2006
- Presenter, Haring Symposium, Kelley School of Business, Indiana University, 2005
- CMRR 3T Research Grant, 2005
- Henrickson Summer Fellowship, 2005
- Graduate Student Travel Grant, 2005
- Student Associate Member of the Center for Cognitive Sciences – U of M

DISSERTATION: ESSAYS ON THE ATTRACTION EFFECT

Funded by: National Science Foundation - Doctoral Dissertation Research Award #0647647 and a University of Minnesota - Center for Magnetic Resonance Research Grant.

Consumers often make decisions that involve a trade-off between two or more attributes. One apartment may be large and spacious, but far from work, while another may be closer to work but less spacious. Similarly, career options may differ in job security and salary, beer brands may differ in taste and price, and automobiles may differ on safety and handling. According to the existing literature, the addition of a normatively irrelevant option (a decoy) into such a consideration set changes the choice share of the original options. Typically, the addition of an asymmetrically dominated alternative (i.e. dominated by one option but not the other) increases the share of the most similar dominating option (Huber, Payne and Puto 1982).

A considerable amount of research has established empirical support for the impact of such decoys on choice shares of one of the original options, but the underlying process explanation for why this effect occurs is still unclear. My dissertation examines explanations for the effect, and factors that might exacerbate the bias. I employ both standard behavioral techniques as well as brain imaging techniques to examine the cognitive processes that are implicated in the “attraction effect”.

- **Essay 1:** Trade-off Aversion as an Explanation for the Attraction Effect: A functional Magnetic Resonance Imaging Study with Akshay Rao
Status: Accepted at the Journal of Marketing Research.

Prior research has demonstrated that, when faced with a choice set comprising a trade-off between two options, the introduction of a third inferior or dominated alternative increases the choice share of the option that is most similar to the new entrant. In my first essay, I expand on

the argument first proffered by Luce, Bettman and Payne (2001) that people experience negative emotion when evaluating trade-offs, but can avoid the negative emotion by choosing options based on dominance relationships. I combine data from a set of experiments that provide subjects' preferences, response time, and brain activation data. The choice results are consistent with prior literature on the attraction effect. Further, brain activation results reveal increased activation in the dorsolateral prefrontal cortex and decreased activation in the medial prefrontal cortex and amygdalae when the decoy is present. These results are consistent with emotional trade-off avoidance as a mechanism leading to the attraction effect.

- **Essay 2: Regulatory Resource Depletion and the Attraction Effect**
Status: Behavioral data collection complete. fMRI data collection complete.

In my second essay, I extend the rationale developed and tested in essay 1. Specifically, I examine if the depletion of cognitive resources might exacerbate the bias. The experiments in this essay use preference data, response time data, and brain activation data to determine whether subjects who exercise self-control display an enhanced bias in subsequent choice decisions, by displaying a stronger attraction effect. Choice patterns and brain activation data support the basic arguments.

PEER REVIEWED PUBLICATIONS:

- Could Ralph Nader's Exit Have Helped Al Gore? The Impact of Decoy Entry and Exit on Consumer Choice
with Akshay Rao and Allan Chen
Status: Forthcoming at the Journal of Marketing Research.
- Trade-off Aversion as an Explanation for the Attraction Effect: A functional Magnetic Resonance Imaging Study
with Akshay Rao
Status: Forthcoming at the Journal of Marketing Research.
- Aristotle's Anxiety: Choosing Among Methods to Study Choice (Rejoinder for: Trade-off Aversion as an Explanation for the Attraction Effect)
with Akshay Rao
Status: Forthcoming at the Journal of Marketing Research.

CONFERENCE PROCEEDINGS

- "Brain Activation: Shedding Light on the Decoy Effect", (2005) in Advances in Consumer Research Volume 32, eds. Geeta Menon and Akshay R. Rao, Duluth, MN: Association for Consumer Research.
with Akshay Rao
- "Could Ralph Nader's Exit Have Helped Al Gore? The Impact Of Decoy Entry and Exit On Consumer Choice", (2008) in Advances in Consumer Research Volume 35, eds. Angela Y. Lee and Dilip Soman, Duluth, MN: Association for Consumer Research.
with Akshay Rao and Allan Chen
- "Valence Asymmetries in Preferences: The Case of Attraction Effect", (2008) in Advances in Consumer Research Volume 35, eds. Angela Y. Lee and Dilip Soman, Duluth, MN: Association for Consumer Research.
with Selin Malkoc and Steve Hoeffler

PAPERS UNDER REVIEW:

- A Magnetoencephalography Study of Preferential Choice with Decoy and Non-Decoy Choice Sets
with David Crowe, Art Leuthold, and Apostolos Georgopoulos
Status: Under review at Organizational Behavior and Human Decision Processes.

This study used magnetoencephalography (MEG) to record brain activity while subjects selected from choice sets that either included or did not include a dominated option (a "decoy"). This technology allowed us to measure brain activity at millisecond resolution while decisions were being made. We found MEG signal differences for decisions with a decoy earlier than 750

milliseconds, indicating that changes in brain activity occur prior to prolonged deliberation. These findings may further refine existing explanations for this decision bias.

CONFERENCE PRESENTATIONS/POSTERS

- “The Ralph Nader Effect: Decoy Disappearance and Attraction” with Akshay Rao, Society for Judgment and Decision Making, Minneapolis, MN, 2004
- “The Ralph Nader Effect: Decoy Disappearance and Attraction” Haring Symposium, Bloomington, IN, 2005
- “The Decoy Effect: Cognitive and Neural Evidence” with Akshay Rao, Society for Judgment and Decision Making, Toronto, ON, Canada, 2005
- “Contextual Effects on Choice: Behavioral and Neural Evidence of Decoys” with Akshay Rao, Cognitive Neuroscience Society, San Francisco, CA, 2006

SELECTED WORK IN PROGRESS:

- fMRI Study of Positive and Negative Framing William Hedgcock
Status: Behavioral and fMRI data collection complete.

Decision making studies in economics, psychology, and marketing frequently demonstrate that preferences change when options are described in negative or positive terms, even while the options are normatively the same between manipulations. “Asian Disease” problems demonstrate subjects choose more risky options when treatments are framed as expected number of lives lost instead of expected number of lives saved. Negative frames such as “15% fat” elicit lower preference ratings than positive frames such as “85% fat free”. Recent neuroimaging studies have studied the framing effect and get conflicting results. The reason for these conflicting results may be because the studies examined different kinds of positive and negative frames. This study compares positive and negative frames that are either *risky* frames, such as percent deaths or lives saved (involving probabilities and gains or losses), or *attribute* frames, such as percent fat or fat-free (involving non-probabilistic negatively or positively described attributes). I predict risk and attribute frames will share common mechanisms when encoding the value of alternatives but will differ when subjects make a decision. Decisions during negative *risky* frames will be correlated with increased activation in areas associated with logical calculations such as the prefrontal cortex and parietal cortex when compared to decisions during positive risky frames. In contrast, negative and positive *attribute* frames will have no differences when subjects make a decision. If correct, this study will demonstrate preference changes in *risky* frames are correlated with differences in encoding and decision making while preference changes in *attribute* frames are correlated only with differences in encoding while the decision process remains unchanged.

- Valence Asymmetries in Preference Selin Malkoc, Steve Hoeffler and William Hedgcock
Status: Collecting data for final study.

We show that the magnitude and direction of the attraction effect is sensitive to the valence of the options considered. We suggest that representation and evaluation of attributes are predictably different in negative domains, where the same attribute that was perceived as a promotion attribute in the positive domain, would be perceived as a prevention attribute in the negative domain. We further suggest that adding a decoy in the negative domains leads to a share increase for the option that is superior on the focal attribute, leading to both an attraction and a repulsion effect. Results from two studies support this prediction.

- Transitivity Violations in Intertemporal Choice William Hedgcock and Joe Redden
Status: Collecting data for final study.

SELECTED MEDIA:

- May 2008 - Mays Business Online article, "Nader at the Cash Register," on decoy entry and exit.
- August 2008 – Minnesota Public Radio, “Devil is in the Details for Independent Voters,” on decoy entry and exit.
- August 2008 – MSNBC, “How Clinton’s Exit May Boost Obama,” on decoy entry and exit.
- August 2008 – Star Tribune, “Inside Track: Missing Hillary,” on decoy entry and exit.

TEACHING EXPERIENCE/TRAINING

Instruction

University of Minnesota, Carlson School of Management

Introduction to Marketing 2005

Student Evaluation of Teaching – median score 6 (out of 7)

Introduction to Marketing 2006

Student Evaluation of Teaching – median score 6 (out of 7)

Teaching Assistant

Macalester College, St. Paul, MN

Microeconomics and Principles of Economics September 1994 – May 1996

University of Minnesota, Carlson School of Management

Introduction to Marketing/Marketing Research Summers 2004/2005

INVITED PRESENTATIONS

Guest Lecture: Measurement (MBA)	St. Thomas Graduate School of Business	1998
Guest Lecture: Measurement (MBA)	St. Thomas Graduate School of Business	1999
Guest Lecture: Measurement (MBA)	St. Thomas Graduate School of Business	2000
Guest Lecture: Measurement (MBA)	St. Thomas Graduate School of Business	2004
Guest Speaker: MRI Research in Business	U of M – Cognitive Science Seminar in IDSc	2005
Guest Speaker: The Attraction Effect	U of M – MRI User Group	2005
Guest Speaker: MRI Research in Business	U of M – Marketing Institute	2005
Guest Speaker: MRI Research in Business	U of M – Cognitive Science Seminar in IDSc	2006
Guest Speaker: Trade-off and Depletion	U of M – MRI User Group	2006
Guest Speaker: fMRI & MEG in Marketing	U of M – Marketing Speaker Series	2006
Guest Lecture: Trade-off and Depletion	Macalester College – Behavioral Economics	2006

COURSE WORK (SEMESTER LONG CLASSES)/TRAINING

Cognitive Psychology and Neuroscience

Cognition, Computation and the Brain	Chad Marsolek
Cognitive Science – Cognitive Science Seminar	Randy Fletcher
Cognitive Science – Information Decision Sciences*	Paul Johnson
Brain/Mind – Neuroscience Seminar	José Pardo
Evolution and Animal Cognition	David Stephens
fMRI Methods – Graduate Psychology Seminar	Angus MacDonald III
Advanced Physics of MRI – Biophysics*	Ugurbil / Bolan / Olman / Marjanska / Van de Moortele
Psychology Directed Studies – MRI*	Angus MacDonald III
fMRI: Biological Basis and Experimental Design*	Cheryl Olman
Psychological Measurement	Shungwon Ro
Social Cognition	Eugene Borgida
The Self	Mark Snyder
Behavioral Decision Theory	Shawn Curley

Economics and Statistics

Econometric Analysis I
Econometric Analysis II
Micro Economics I and II
Micro Economics III and IV
Experimental Economics*
Probability/Statistical Theory
Design and Analysis of Experiments

Gerard McCullough
Paul Glewwe
L. Hurwicz/ M. Richter
J. Werner / V. Skreta
John Dickhaut
Sergey Bobkov
Thomas Hummel

Marketing

Inter-Organizational Relations
Behavioral Decision Theory / Philosophy of Science
Marketing Models
Consumer Behavior
Marketing Strategy

George John
Akshay Rao
Om Narasimhan
Joan Meyers-Levy
Rajesh Chandy

**audited*

fMRI Related Training and Certification

CPR/AED
Institutional Review Board
Research Safety
Privacy and Confidentiality Research
Safeguarding Personal Health Information
Final fMRI Certification

Chemical Safety
CMRR Orientation
CMRR Safe Magnet
Intro. To HIPAA Privacy and Security
Blood Born Pathogen Training

RESEARCH EXPERIENCE

Research Assistant – University of Minnesota, Carlson School of Management

- Om Narasimhan and Yan Dong *Sept. 2002 - May 2003*
- Om Narasimhan *Summer - 2003*
- Rajesh Chandy and Prokriti Mukherji *Sept. 2003 - May 2004*
- Yan Dong *Summer - 2004*
- Akshay Rao and Yan Dong *Sept. 2004 - May 2005*
- Deborah John *Summer - 2005*
- George John and Yan Dong *Sept. 2005 - May 2006*
- Akshay Rao and Kathleen Vohs *Sept. 2006 - May 2007*

INDUSTRY EXPERIENCE

Carlson Companies, Minneapolis, MN

Senior Analyst, Carlson Consumer Group

May 2000 – May 2002

- Designed a system for web-based, hotel-implemented direct marketing promotions to guests, loyalty program members, and travel agents for Radisson Hotels, Country Inns and Suites, and Park Inns and Suites
- Lead analyst for research related to customer segmentation, customer retention, and promotion responsiveness

Consumer Information, Saint Paul, MN

Independent Consultant

June 1999 – May 2002

- Designed, implemented, and presented marketing programs and customer segmentation for Great Clips and Polaris

DriSteen Humidifier Company, Minneapolis, MN

Analyst - Lead Design of New CRM practices

June 1999 – May 2000

Carlson Marketing Group, Minneapolis, MN

Business Analyst, Strategic Marketing Services

September 1997 – June 1999

- Lead analyst for Visa Business USA, Visa Consumer USA, and Great Clips

Interpool Corporation, St. Paul, MN

Project Manager/Analyst, Assistant to the President

May 1996 – September 1997

VOLUNTEER POSITIONS

- Head Crew Coach - Macalester College - Saint Paul, MN *1997-1999*
- Summit Society - Alumni group from Macalester College that meets monthly to design and implement programs to increase alumni giving. *2003-2007*
- Doctoral Committee Representative for Marketing *2003-2005*
- Marketing Department Brownbag Lunch Organizer *2004-2006*
- Student Representative - U of M Cognitive Science Journal Board *2006-2008*
- Student Host - Association for Consumer Research – Portland *2004*
- Student Host - AMA/Sheth Doctoral Consortium – Minneapolis *2003*
- Reviewer - AMA Winter Marketing Educators' Conference *2005*
- Scribe - Carlson on Branding Conference *2006*
- Scribe - MSI Branding Conference *2007*
- Reviewer - AMA Winter Marketing Educators' Conference *2008*

PROFESSIONAL AFFILIATIONS/GROUPS

- Association for Consumer Research
- Society for Judgment and Decision Making
- Society for Consumer Psychology
- Cognitive Neuroscience Society

TEACHING INTERESTS

Consumer Behavior, Customer Relationship Management, Decision Neuroscience, Judgment and Decision Making, Marketing Management, Marketing Research, Principles of Marketing

DISSERTATION COMMITTEE

- Akshay R. Rao – Marketing, Carlson School of Management, University of Minnesota (Chair)
- Deborah R. John – Marketing, Carlson School of Management, University of Minnesota
- Kathleen Vohs – Marketing, Carlson School of Management, University of Minnesota
- John W. Dickhaut – Accounting, Carlson School of Management, University of Minnesota
- Shawn Curley – Information Decision Sciences, Carlson School of Management, University of Minnesota
- José Pardo – Director: Cognitive Neuroimaging Unit / Psychiatry, Veterans Affairs Medical Center / University of Minnesota

REFERENCES

- Akshay R. Rao - General Mills Professor of Marketing, Carlson School, 321 – 19th Ave S., University of Minnesota, Minneapolis, MN 55455, arao@umn.edu, 612-624-8049
- John W. Dickhaut - Curtis L. Carlson Chair in Accounting, Carlson School, 321 – 19th Ave S., University of Minnesota, Minneapolis, MN 55455, jdickhau@umn.edu, 612-624-9891
- Deborah R. John - Curtis L. Carlson Chair in Marketing, Carlson School, 321 – 19th Ave S., University of Minnesota, Minneapolis, MN 55455, djohn@umn.edu, 612-624-9563
- Paul E. Johnson - Curtis L. Carlson Chair in Decision Sciences, Carlson School, 321 – 19th Ave S., University of Minnesota, Minneapolis, MN 55455, pjohnson@csom.umn.edu, 612-624-5570