

Social Identity, Stereotypes, and the Rate of Innovation and Entrepreneurship: Arrow (1962) Meets Arrow (1973) in the Lab

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Motivation

Around the world, entrepreneurship and top managerial positions are dominated by males of each country's prevailing ethnic group (Guiso and Rustichini, 2011). Women and some minorities are particularly underrepresented in the high-tech sectors, both as entrepreneurs and as workers (Fairlie, 2004; Milian, 2011; Pepitone, 2011). This under-representation persists despite the progress made by females and minorities in education levels, labor market participation, and wages. Different interpretations have been given to explain these facts. A set of explanations focuses on differences in preferences, for example toward certain activities, or in the level of risk that an individual is willing to bear. Other explanations emphasize social barriers such as the perception, or stereotype, that certain groups of individuals are less able or less willing to undertake certain activities (e.g., "Women are bad leaders"). Distinguishing between these explanations is important because of the very different efficiency and policy implications they carry. The task of disentangling them, however, is difficult because each set of causes may reinforce the other. For example, as formally shown originally by Arrow (1973), if discrimination based on stereotypes against females or ethnic minorities precludes individuals in these groups from advancing in certain careers, then low enrollment in, say, engineering or computer science programs might reflect a rational response by the affected group, which in turn would reinforce the perception that people in these groups are less likely to choose and succeed in these jobs.

These mechanisms not only increase inequity, but also stifle opportunities for an economy's prosperity by affecting, among other factors, the rate of innovative activity and business creation, because entrepreneurial and managerial talent is left idle.¹ Therefore these mechanisms may represent a further source of underinvestment in innovative activities.

In this project, we aim to examine the underlying causes of these gender and ethnic disparities through laboratory experiments. The projects described here are part of a larger program to study the low participation of women and minorities in entrepreneurship and innovative activities. Here we focus on experiments more directly related to understanding under-participation in high-tech jobs and entrepreneurship. Following Arrow's (1973) seminal work, several studies have shown that social identities and stereotypes affect job and task choices.² However, no study has explored this relationship in the context of innovative and entrepreneurial jobs.

Proposed Experiments

In the two studies outlined below, we will test the impact of making social identity and stereotypes salient on two set of choices related to undertaking innovative endeavors: the willingness to perform innovative/creative tasks, and the attitude toward risk. The studies will be carried out in the Behavioral Laboratories of the University of Toronto and of Johns Hopkins University. We will recruit independent samples of individuals of different gender and ethnic groups (white males, women, visible minorities). For each study, we will recruit N = 900 individuals, or about 300 per each subgroup. Each subgroup will be divided in two according to the treatment condition; therefore, there will be 100 subjects per treatment (defined below). Power calculations ensure that these sizes allow detecting meaningful and statistically significant differences.

Common to both studies, we will assign participants to one of three conditions: (1) In the *identity prime condition*, priming will occur using standard procedures such as asking participants to write about why a certain identity is important to them or by exposing participants to stimuli associated with a specific social identity. (2) In the *stereotype threat condition*, a social identity will be brought to mind, but that identity will also be threatened. Stereotype threat occurs anytime individuals fear being judged based on stereotypes about their

¹ This potential for lost opportunities is not only perceived in North America. For example, in Japan, there is now agreement that a greater inclusion of women in the workforce will be instrumental to reducing the risks of economic decline associated with negative demographic trends in that country (Matsui et al., 1999; *Economist*, 2011).

² Anderson et al., 2006; Bertrand, M., and Mullainathan, 2004; Carell et al., 2010; Coate and Loury, 1993; Davies et al, 2002; Dee (2005, 2010); Fryer et al., 2008; Goldin and Rouse, 2000; Inzlicht and Kang, 2010; Spencer et al, 1999; Tumlinson, 2011.

social group rather than based on their own personal merit (Steele and Aronson, 1995). A classic manipulation consists in framing a test as diagnostic of a stereotyped ability (Steele and Aronson, 1995; Spencer, Steele, and Quinn, 1999). (3) In the *control* condition, social identities will be neither primed nor threatened. We will then explore differences in the choices and performance of groups in the various conditions. Note that, in principle, two types of responses are possible. On the one hand, priming a “negative” stereotype might lead to choices that fulfill that stereotype. However, the opposite is also possible, with the stereotyped group trying to counter the belief (Dee, 2010; Tumlison, 2011).

Study 1: Task choice. Innovation and entrepreneurship require some degree of creativity and of “thinking outside the box” with regards to products/services, markets, or organizational choices (Stern, 2005). We will consider performance on two sets of tasks widely used in the psychology and economics literature as representing repetitive versus creative activities; the repetitive task will consist of entering data into a spreadsheet, and the creative task will be the Remote Associates Task (RAT). In the RAT, participants are given a list of three words (e.g., lick, mine, shaker) and are asked to provide a fourth word which connects them (e.g., salt). Before performing these tasks, participants will be randomly assigned to the stereotype threat, identity priming, or control conditions. We will test for differences in performance between conditions and across tasks. In a second sub-study, random assignment to tasks will be substituted by allowing subjects to self-select into a task, to assess whether the salience of an identity or stereotype also affects the choice to engage in a given task.

Study 2: Risk taking. A more positive attitude toward risk is another defining characteristic of entrepreneurs and innovators. We will ask subjects to choose between “50-50” lotteries, following Eckel and Grossman (2002, 2008) and Garbarino, Slonim and Sydnor (2011). Each lottery will have two possible payoffs, each with 50% probability. We will modify either the standard deviation or the expected value of the lotteries. We will therefore be able to derive the constant relative risk aversion parameter of the utility function. In addition, one of the six lotteries will be equivalent to another one of the six in terms of expected value, but will have a higher standard deviation. Those who chose this lottery will be classified as risk-seeking individuals. As above, for each group, subjects will be treated in a first stage with identity primes or stereotype threats, and we are interested in assessing whether this priming or threat affects their subsequent lottery decisions.³

The role of lab experiments

Initially confined to psychology, lab experiments have gained popularity in the social sciences in the past two decades.⁴ This methodology remains largely unexploited in many subfields, including the study of entrepreneurship, organizations and innovation. In our context, a lab experiment is of particular relevance for two reasons. First, constructing our counterfactuals of interest in the field would be extremely expensive and difficult to control appropriately. Consider for example the importance of having an identity priming condition as separate from a stereotype threat condition. If we just compared a stereotype threat condition to the control, it would be unclear whether any difference could be attributed to the priming of a social identity, or to the presence of a threat or negative stereotype. Second, these experiments will allow us to obtain a wealth of background information on the agents that is typically not available in traditional data sets.

Budget

We request **\$20,000**, to be used to recruit and compensate experimental subjects and for related expenses. Although we eventually plan to perform all three conditions – control, identity priming, and stereotype threats, in order to isolate specific mechanisms, we limit the fund request here to only two of the conditions – control and stereotype threat. We are currently applying for additional funding in order to include the identity priming condition. As described above, each study will therefore have 600 subjects, for a total of 1,200 subjects. We will have a participation “coin” of \$10 for each participant, and we will set up the rewards so as to guarantee, on average, an additional \$5 per subject. Therefore, the expected amount to compensate subjects will be $1,200 * \$ (10 + 5) = \$18,000$. The remaining \$2,000 will be used for advertising the experiments and for other related supplies (software, etc.).

³ We are also planning two other sets of experiments, for which we are applying for other funds, meant at exploring the impact of social identities and stereotypes on other choices related to entrepreneurship: the willingness to work in teams (and be evaluated on the basis of team performance) vs. working individually; and the willingness to take on a leadership role within a team.

⁴ See Croson et al. (2007) and Falk and Heckman (2009) for discussions on the role of lab experiments in the social sciences.

References

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- Economist*, 2011: "Land of wasted Talent," November.
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- Falk, A. and Heckman, J.J., 2009: "Lab Experiments Are a Major Source of Knowledge in the Social Sciences," *Science*, 326, 535-538.
- Fryer, R. Levitt, S. and List, J., 2008: "Exploring the Impact of Financial Incentives on Stereotype Threat: Evidence from a Pilot Study," *American Economic Review Papers and Proceedings*, 98, 2, 370-375.
- Garbarino, E., Slonim, R. and Sydnor, J., 2011: "Digit Ratios (2D:4D) as Predictors of Risky Decision Making," *Journal of Risk and Uncertainty*, 42, 1, 1-26.
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- Guiso, L. and Rustichini, A., 2011: "What drives women out of entrepreneurship? The joint role of testosterone and culture," working paper.
- Inzlicht, M., and Kang, S. K., 2010: "Stereotype threat spillover: How coping with threats to social identity affects aggression, eating, decision making, and attention," *Journal of Personality and Social Psychology*, 99, 467-481.
- Matsui, K. et al., 1999: *Womenomics: Japan's Hidden Asset*, Goldman Sachs.
- Milian, M., 2011: "Do black tech entrepreneurs face institutional bias?," *CNN Tech* (<http://www.cnn.com/2011/11/11/tech/innovation/black-tech-entrepreneurs/index.html>)
- Pepitone, J., 2011: "Silicon Valley fights to keep its diversity data secret," *CNN Money* (http://money.cnn.com/2011/11/09/technology/diversity_silicon_valley/index.htm)
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- Zhang, S., Schmader, T., and Forbes, C., 2009: "Gender stereotypes and the choice of career paths," In M. Barreto, M. Ryan, and M. Schmitt (Eds.), *The Glass Ceiling in the 21st Century: Understanding Barriers to Gender Equality* (pp. 125-150). American Psychological Association.

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Curriculum Vitae

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UT Mississauga
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ACADEMIC POSITIONS:

Current:

- Assistant Professor of Strategic Management, Rotman School - University of Toronto, and Assistant Professor of Management, University of Toronto – Mississauga.
- Faculty Research Fellow, National Bureau of Economic Research

Previous:

- 2006-2010: Assistant Professor of Economics - Weatherhead School of Management, Case Western Reserve University, Cleveland, OH.

EDUCATION

- PhD in Strategy, M.I.T. Sloan School of Management – Cambridge, MA, US, 2006.
- *Laurea* in Economics, Università Bocconi, Milan, Italy, 2000. *Summa cum laude* and outstanding thesis distinction.
- Visiting Student, Brandeis University, International Business School, Waltham, MA, 1998.

RESEARCH ACTIVITIES

Fields of interest: Industrial economics, economics of innovation; Motivations for altruistic behavior; Non-profit organizations.

Publications and forthcoming articles

1. Heuristic Thinking and Limited Attention in the Car Market, NBER working paper 17030 (with Devin Pope and Justin Sydnor), *American Economic Review*, forthcoming.
2. Will There Be Blood? Incentives and Displacement Effects in Pro-Social Behavior (with Mario Macis and Robert Slonim), *American Economic Journal: Economic Policy*, forthcoming.
3. The Economics of Scientific Misconduct (with Lorenzo Zirulia), *Journal of Law, Economics and Organization*, 27, 3, 568-603.
4. The Effects of Increasing Competition and Uncertainty on Incentives and Extreme-Value Outcomes in Innovation Contests (with Kevin Boudreau and Karim Lakhani), *Management Science*, 57, 5, 843–863, 2011.
5. Inside or Outside the IP System? Business Creation in Academia (with Riccardo Fini and Scott Shane), *Research Policy*, 39, 8, 1060-1069, 2010.
6. Social Image Concerns and Prosocial Behavior: Field Evidence from a Nonlinear Incentive Scheme (with Mario Macis), *Journal of Economic Behavior and Organization*, 76, 225-237, 2010.

7. Do All Material Incentives for Prosocial Activities Backfire? The Response to Cash and Non-Cash Incentives for Blood Donations, *Journal of Economic Psychology*, 31, 4, 738–748, 2010.
8. Different Yokes for Different Folks: Individual Preferences, Institutional Logics, and the Commercialization of Academic Research (with Riccardo Fini), *Advances in the Study of Entrepreneurship, Innovation and Economic Growth, Vol 21: Spanning Boundaries and Disciplines: University Technology Commercialization in the Idea Age* (eds. Gary Libecap and Marie Thursby), 1-25, 2010.
9. Different Missions and Commitment Power in R&D Organization: Theory and Evidence on Industry-University Relations, *Organization Science*, 20, 3, 565-582, 2009.
10. Academic Entrepreneurship, *Managerial and Decision Economics*, 30, 7, 443-464, 2009.
11. Sample Size and Precision in NIH Peer Review (with David Kaplan and Celia Kaplan), *PLoS One*, July 23 2008.

Working papers and submitted papers

1. Rewarding Altruism? A Natural Field Experiment (with Mario Macis and Robert Slonim), NBER working paper 17636.
2. Is High-Quality Production Location-Specific? Evidence from the Automobile Industry (with Justin Sydnor).
3. Time for Blood: The Effect of a Naturally-Occurring Incentive for Altruistic Behavior (with Mario Macis), R&R, *Journal of Law, Economics and Organization*.
4. Knowledge Spillovers, Competition, and Taste for Science in a Model of R&D Incentive Provision, NBER working paper 17031 (with Lorenzo Zirulia).

Work in progress

1. Incentives for Blood Donation: Field Experiments in Argentina (with Victor Iajya, Mario Macis and Robert Slonim).
2. Motivating Organ Donation (with Mario Macis and Sarah Stith).
3. Knowledge Recombination and Scientific Collaboration (with Christian Catalini and Alexander Oettl).
4. The Auctioneer Effect (with Devin Pope and Justin Sydnor).

Awards and research grants

- Meritorious Service Award, *Management Science*.
- Dean's Excellence Award, University of Toronto, 2011.
- Social Sciences and Humanities Research Council of Canada (SSHRC) Grant, Field Experiments in Global Health: Motivating Voluntary Blood Donations in Argentina (with Victor Iajya, Mario Macis and Robert Slonim), 2010-11, \$42,000.
- National Science Foundation Grant, Field Experiments on the Provision of Incentives for Blood Donation (with Mario Macis and Robert Slonim), 2009-12, \$330,000.
- Russell Sage Foundation Grant for Young Scholars, Incentives for Blood Donation: Natural and Field Experiments (with Mario Macis and Robert Slonim), 2008-9, \$5,000.
- International Motor Vehicle Program grant, Empirical Studies of Used-Car Auctions (with Justin Sydnor), 2008-9, \$50,000.
- Early Career Award, Atlanta Science & Technology Policy Conference, Georgia Tech, 2006.
- IRI Foundation Fellowship, 2006.
- MIT - Sloan School Fellowship, 2001-2005.

Presentations to seminars and conferences

- **2012** (scheduled): AEA Annual Meetings, MIT Applied Economics Seminar, Imperial College London, London Business School.
- **2011**: Workshop on Advances with Field Experiments (University of Chicago), University of Toronto – Rotman School (OBHRM group), Stanford Institute for Theoretical Economics – experimental Economics Workshop, NBER Productivity Spring Meeting, ASSA meetings, EARIE meetings, Southern Ontario Behavioral Decision Research Conference, University of Munich Workshop on Natural Experiments and Controlled Field Studies, CCC Doctoral Consortium (*discussant*), Canadian Economic Association meetings (*discussant*), REER Conference (*discussant*).
- **2010**: University of Toronto (Rotman School and Department of Economics), Georgia Tech, Boston University, Cleveland State University, University of Viterbo, AOM meetings, NBER Summer Institute, HBS Strategy Conference, FTC Microeconomics Conference, ASSA meetings, REER Conference (Georgia Tech - *discussant*).
- **2009**: MIT, NBER, University of Texas – Dallas, University of California – San Diego, University of Michigan, AOM annual meetings, ASSA meetings, DRUID, Kauffman Workshop on Graduate Education in Technology Commercialization, Kauffman workshop on entrepreneurship and innovation, Kauffman-Cleveland FED Conference on Entrepreneurial Finance (*discussant*), NBER Summer Institute (*discussant*), REER Conference (*discussant*).
- **2008**: University of Chicago, University of Bologna, REER Conference (Georgia Tech), ASSA Meetings (*presenter and discussant*), Wharton Technology Conference, ASSA meetings (*discussant*), REER Conference.
- **2007**: NBER, Boston University, Kent State University, REER Conference (Georgia Tech), London Business School Entrepreneurship Conference, Imperial College London Workshop on Industry-University Relationships (*presenter and discussant*), ISNIE Annual Conference, CCC Doctoral Consortium (*discussant*).
- **2006**: HEC Paris, IESE Barcelona, Catholic University of Leuven, London Business School, Washington University St. Louis, Harvard Business School, NYU, Duke, University of Southern California, Boston University (Dept. of Strategy), Georgia Tech (School of Public Policy), MIT, NBER (Productivity Group), EARIE annual conference, ASSA Meetings, EPFL Lausanne Conference on Science and Technology Policy, EPFL Lausanne Conference on Science and Technology Policy (*discussant*), REER Conference (*discussant*).
- **2005**: Florida International University, Case Western Reserve University, Nova University of Lisbon, REER Conference, CCC Doctoral Consortium, EARIE annual conference
- **2004**: AOM annual meetings.

Refereeing Activity

- **Journals**: American Economic Review, Review of Economic Studies, RAND Journal of Economics, Review of Economics and Statistics, Journal of Labor Economics, Management Science, Organization Science, Journal of the European Economic Association, Journal of Law, Economics and Organization, Strategic Management Journal, International Journal of Industrial Organization, Journal of Economics and Management Strategy, Southern Economic Journal, Small Business Economics, Economica, Research Policy, Journal of Evolutionary Economics, Industrial and Corporate Change, Academy of Management Review, Journal of Management and Governance, European Management Review, Metroeconomica, Journal of Economics Surveys.
- **Grant proposals**: National Science Foundation, Bicentennial Program for Science and Technology (Chile), Israel Science Foundation.

Press coverage

- Financial Times, The Economist, Slate, Nature News, several blogs (Marginal Revolution, Market Design, You're the Boss – New York Times, Cheap Talk), Daniel Pink's *Drive*.

Popular press articles

- How driving a mile could cost you \$200 (with Devin Pope and Justin Sydnor), Voxeu.org
- Incentives for altruism? The case of blood donations (with Mario Macis), Voxeu.org
- Anche i manager hanno le loro colpe, lavoce.info
- Un tornaconto sul sangue? Ni, grazie (with Mario Macis), lavoce.info
- Il mercato non va all'università (with Mario Macis), lavoce.info
- Una bussola nella giungla dei blog (with Mario Macis), lavoce.info
- Un referendum da riformare (with Mario Macis), lavoce.info
- Quote rosa in modica quantità (with Mario Macis), lavoce.info
- La campagna elettorale passa in tv (with Mario Macis), lavoce.info
- L'aids e il vaccino che non c'è, (with Mario Macis), lavoce.info
- Par condicio con l'handicap (with Mario Macis), lavoce.info
- Università, privatizzazione e fantascienza (with Francesco Lissoni), lavoce.info

TEACHING ACTIVITIES

Principal Instructor:

- Management of Innovation (UT Mississauga, Master in Management of Innovation and Master in Biotechnology)
- Economic Analysis of Business Strategy (Undergraduate), 2007-9. Entrepreneurial Strategy (Undergraduate) 2006-9, New Venture Creation (MBA), 2006-8, Case Western Reserve University.

Teaching Assistant:

- Strategic Management, Technology Strategy (MBA, MIT, 2004-6), Applied Economics for Managers (Exec. MBA, MIT 2005), Organizational Economics (PHD, MIT 2004), Intermediate Microeconomics Economic Policy (Bocconi University, 2001), Industrial Organization (University of Brescia, 2001).

Teaching awards

- Winner, Weatherhead Undergraduate Teaching Award, CWRU, 2010.
- Nominated, Carl F. Wittke Award for Excellence in Undergraduate Teaching, CWRU, 2010.
- Glennan Fellowship for excellence in scholarship and teaching, CWRU, 2009.
- Finalist, Weatherhead Undergraduate Teaching Award, CWRU, 2008.
- Nominated, Weatherhead Undergraduate and Graduate Teaching Award, CWRU, 2007.

OTHER PROFESSIONAL EXPERIENCE

- Social worker in hospice for mentally challenged adults (in lieu of military service duties), ANFFAS, Milan, Italy, 2000-2001.
- Summer intern at the Bureau of Trade and Economic Cooperation, Italian Embassy, Rabat, Morocco, 1999.

LANGUAGES: Italian (native), English, French. Reading knowledge of Latin and Classic Greek.

SONIA KANG

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ACADEMIC POSITIONS

Assistant Professor **2011 -**
Organizational Behavior and Human Resource Management
Joseph L. Rotman School of Management, University of Toronto &
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Post-Doctoral Fellow **2010 - 2011**
Department of Psychology, Northwestern University

EDUCATION

University of Toronto, Toronto, ON
Ph.D. in Psychology **2010**
Dissertation: Beyond the double jeopardy hypothesis: Target age as a moderator of perceived emotion on Black and White faces.

University of Toronto, Toronto, ON
M.A. in Psychology **2006**
Thesis: Stigma sensitivity and stereotype threat among older adults.

University of Alberta, Edmonton, AB
B.Sc. (Hons.) in Psychology with First Class Honors **2004**
Thesis: An indirect examination of age stereotypes using the base rate paradigm.

HONORS AND AWARDS

Ken Dion Most Outstanding Social/Personality Graduate Student Award	2010
SSHRC Postdoctoral Fellowship, \$81 000	2010-2012
Sir James Lougheed Award of Distinction, Alberta Scholarship Programs, \$20 000	2009-2010
Student Travel Award, Society for Personality and Social Psychology, \$500	2009
Conference Travel Grant, University of Toronto Faculty of Arts and Sciences, \$810	2008
Student Travel Award, Canadian Psychological Association, \$100	2007, 2008
Doctoral Award, Social Sciences and Humanities Research Council of Canada, \$80 000	2006-2010
University of Toronto Faculty of Arts and Sciences Award Top-Up Scholarship, \$8750	2006-2009
Ontario Graduate Scholarship, Government of Ontario, \$15 000 (Declined)	2006-2007
Master's Award, Social Sciences and Humanities Research Council of Canada, \$17 500	2005-2006

PUBLICATIONS

- Kang, S.K.**, & Inzlicht, M. (in press). Stigma building blocks: How instruction and experience teach children about rejection by out-groups. *Personality and Social Psychology Bulletin*.
- Inzlicht, M., Tullet, A.M., Legault, L., & **Kang, S.K.** (in press). Lingering effects: Stereotype threat hurts more than you think. *Social Issues and Policy Review*.
- Bodenhausen, G.V., **Kang, S.K.**, & Peery, D. (in press). Social categorization and perceptions of social groups. In S.T. Fiske & C.N. Macrae (Eds.), *The Sage Handbook of Social Cognition*. Thousand Oaks, CA: Sage.
- Chasteen, A.L., **Kang, S.K.**, & Remedios, J.D. (in press). Aging and stereotype threat: Development, Process, and Interventions. In M. Inzlicht & T. Schmader (Eds.), *Stereotype Threat: Theory, Process, and Application*. Oxford, UK: Oxford University Press.
- Packer, D. J., Chasteen, A. L., & **Kang, S.K.** (2011). Facing social identity change: Interactive effects of current and projected collective identification on expectations regarding future self-esteem and psychological well-being. *British Journal of Social Psychology*, *50*, 414-430.
- Inzlicht, M., & **Kang, S.K.** (2010). Stereotype threat spillover: How threats to social identity affect eating, decision-making, and aggression. *Journal of Personality and Social Psychology*, *99*, 467-481.
- Kang, S.K.**, Inzlicht, M., & Derks, B. (2010). Social Neuroscience and Public Policy on Intergroup Relations: A Hegelian Analysis. *Journal of Social Issues*, *66*, 585-601.
- Kang, S.K.**, Hirsh, J.B., & Chasteen, A.L. (2010). Your mistakes are mine: Self-other overlap predicts neural response to observed errors. *Journal of Experimental Social Psychology*, *46*, 229-232.
- Kang, S.K.**, & Chasteen, A.L. (2009). Beyond the double-jeopardy hypothesis: Assessing emotion on the faces of multiply categorizable targets of prejudice. *Journal of Experimental Social Psychology*, *45*, 1281-1285.
- Kang, S.K.**, & Chasteen, A.L. (2009). The moderating role of age-group identification and perceived threat on stereotype threat among older adults. *International Journal of Aging and Human Development*, *69*, 201-220.
- Kang, S.K.**, & Chasteen, A.L. (2009). The development and validation of the age-based rejection sensitivity questionnaire (RSQ-Age). *The Gerontologist*, *49*, 303-316.
- Derks, B., Inzlicht, M., & **Kang, S.K.** (2008). The neuroscience of stigma and stereotype threat. *Group Processes and Intergroup Relations*, *11*, 163-181.

WORKS IN PROGRESS

Hirsh, J.B., **Kang, S.K.**, & Bodenhausen, G.V. (revision submitted). Personalized Persuasion: Tailoring Persuasive Appeals to Recipient Personality Traits. *Psychological Science*.

Kang, S.K., & Chasteen, A.L. (in preparation). When attributions to discrimination fail to protect: The case of ageism.

Kang, S.K., & Chasteen, A.L. (in preparation). Ageism ≠ sexism ≠ racism: Differential perceptions of claims of discrimination.

Kang, S.K., & Inzlicht, M. (in preparation). Feeling the weight of stigma: Stigma consciousness predicts negative weight-related outcomes.

Kang, S.K., Remedios, J.D., Chasteen, A.L., & Plaks, J.E. (in preparation). Folk beliefs about genetic variation predict withdrawal from racially-ambiguous people.

CONFERENCE PRESENTATIONS

Kang, S.K., Hirsh, J.B., & Chasteen, A.L. (January, 2012). *Your mistakes are mine: The shared experience of errors among close individuals*. Talk to be presented in A. Galinsky (Chair) Group-Bounded Cognition: How Social Groups Shape Learning, Motivation, and Attitudes (Symposium) at the 13th annual meeting of the Society for Personality and Social Psychology, San Diego, CA.

Chasteen, A. L., & **Kang, S. K.** (2011, November). *How images of aging influence reactions to multiply-categorizable individuals*. Invited talk to be presented at the 64th Annual Scientific Meeting, Gerontological Society of America, Boston, MA.

Kang, S.K., & Inzlicht, M. (July, 2011). *Stereotype threat spillover: How social identity threat extends further than previously thought*. Talk presented in T. Stahl (Chair) Stereotypes, Self-Regulation, and Cognitive Performance (Symposium) at the 16th general meeting of the European Association for Social Psychology, Stockholm, Sweden.

Kang, S.K., & Inzlicht, M. (January, 2010). *Stereotype threat spillover: How threats to social identity affect aggression, eating, decision-making, and attentional control*. Talk presented in V. Jones (Chair) Beyond Laboratory-Based Test Performance: Exploring the Far-Reaching Consequences and Implications of Stereotype Threat (Symposium) at the 11th annual meeting of the Society for Personality and Social Psychology, Las Vegas, NV.

Kang, S.K., & Inzlicht, M. (June, 2008). *The Development of Stigma Consciousness: Dissociating Top-down and Bottom-up Influences*. Talk presented in S. Kang (Chair) Developmental Perspectives on Prejudice and Intergroup Relations (Symposium) at the 7th Biennial Convention of the Society for the Psychological Study of Social Issues, Chicago, IL.

Inzlicht, M. & **Kang, S.K.** (October, 2007). *Why women leave science: Using a neurophysiological approach to understand and plug the leaky pipeline*. Talk presented at the 47th Annual Meeting of the Society for Psychophysiological Research, Savannah, Georgia.

Kang, S.K., & Inzlicht, M. (July, 2007). *Why women leave science: Neural underpinnings of the leaky pipeline*. Talk presented at the Small Group Meeting on Stigma and Social Disadvantage, Leiden, Netherlands.

Inzlicht, M., Gutsell, J. N., & **Kang, S.K.** (January, 2007). *Running out of steam: Neural signals for ego depletion and stereotype threat*. Talk presented in T. Schmader (Chair) A social neuroscience approach to understanding stereotype threat and psychological disengagement (Symposium) at the 8th annual meeting of the Society for Personality and Social Psychology, Memphis, TN.

SYMPOSIUM CHAIRS

Kang, S.K. (June, 2008). *Developmental Perspectives on Prejudice and Intergroup Relations*. Symposium presented at the 7th Biennial Convention of the Society for the Psychological Study of Social Issues, Chicago, IL.

Kang, S.K. (June, 2007). *Contemporary topics in social and personality psychology*. Symposium presented at the 68th Annual Convention of the Canadian Psychological Association, Ottawa, ON.

Kang, S.K. (June, 2007). *Developmental perspectives in social psychology*. Symposium presented at the 68th Annual Convention of the Canadian Psychological Association, Ottawa, ON.

Kang, S.K. (June, 2007). *Our world then and now: political, environmental, and interpersonal orientations*. Symposium presented at the 68th Annual Convention of the Canadian Psychological Association, Ottawa, ON.

CONFERENCE POSTERS

Kang, S.K., & Chasteen, A.L. (January, 2011). *Beyond the double jeopardy hypothesis: the interaction between age- and race-based stereotypes across the lifespan*. Poster presented at the meeting of the Society for Personality and Social Psychology, San Antonio, TX.

- Hirsh, J.B., **Kang, S.K.**, & Chasteen, A.L. (January, 2010). *Self-other overlap predicts neural response to observed errors*. Poster presented at the meeting of the Society for Personality and Social Psychology, Las Vegas, NV.
- Tse, C., **Kang, S.K.**, Chasteen, A.L., & Remedios, J.D. (January, 2010). *Current perspectives on ageism, racism, and sexism: Attitudes about discrimination and those who claim to have experienced it*. Poster presented at the meeting of the Society for Personality and Social Psychology, Las Vegas, NV.
- Kang, S.K.**, & Chasteen, A.L. (May, 2009). *Target age moderates perceived anger and happiness on Black and White faces*. Poster presented at the meeting of the Association for Psychological Science, San Francisco, CA.
- Kang, S.K.**, & Chasteen, A.L. (February, 2009). *Beyond the double jeopardy hypothesis: Assessing threat on the faces of multiply categorizable targets of prejudice*. Poster presented at the meeting of the Society for Personality and Social Psychology, Tampa, FL.
- Chasteen, A.L., Remedios, J., **Kang, S.K.**, & Packer, D.J. (February, 2009). *What does it mean to identify with your age group: Distinguishing between cohort and youth identification*. Poster presented at the meeting of the Society for Personality and Social Psychology, Tampa, FL.
- Lin, H.L., Preuss, G., O'Grady, M.A., **Kang, S.K.**, & Pattershall, J. (February, 2009). *Characteristics of past and future SPSP job applicants*. Poster presented at the meeting of the Society for Personality and Social Psychology, Tampa, FL.
- Kang, S.K.**, Chasteen, A. L., & Tse, C. (June, 2008). *Differential Reactions to Claims of Ethnic, Age, and Gender Discrimination*. Poster presented at the 69th Annual Convention of the Canadian Psychological Association, Halifax, NS.
- Chasteen, A.L., **Kang, S.K.**, & Fortune, K. (April, 2008). *Consequences of attributions to age discrimination*. Poster presented at the 2008 Cognitive Aging Conference, Atlanta, GA.
- Kwong-See, S.T., & **Kang, S.K.** (April, 2008). *Perceptions of communicative competence in aging: An examination of age stereotyping using a base rate paradigm*. Poster presented at the 2008 Cognitive Aging Conference, Atlanta, GA.
- Kang, S.K.**, & Inzlicht, M. (February, 2008). *The development of stigma consciousness among children*. Poster presented at the meeting of the Society for Personality and Social Psychology, Albuquerque, NM.
- Chasteen, A.L., & **Kang, S.K.** (February, 2008). *Do attributions to age discrimination protect targets of ageism?* Poster presented at the meeting of the Society for Personality and Social Psychology, Albuquerque, NM.

- Edlund, J., **Kang, S.K.**, Knack, J., Lee, E., O'Grady, M., & Portnoy, D.B. (February, 2008). *Characteristics of SPSP Graduate Student Members*. Poster presented at the meeting of the Society for Personality and Social Psychology, Albuquerque, NM.
- Kang, S.K.**, Chasteen, A. L., & Fortune, K. (June, 2007). *Are the self-protective properties of stigma effective for age discrimination?* Poster presented at the 68th Annual Convention of the Canadian Psychological Association, Ottawa, ON.
- Kang, S.K.**, Packer, D. J., & Chasteen, A. L. (January, 2007). *Anticipating future stigma: Extending the rejection-identification model to future group memberships*. Poster presented at the meeting of the Society for Personality and Social Psychology, Memphis, TN.
- Kang, S.K.**, & Chasteen, A. L. (June, 2006). *How stigma sensitivity moderates stereotype threat effects in older adults*. Poster presented at the 67th Annual Convention of the Canadian Psychological Association, Calgary, AB.
- Feltmate, S.E., Gagnon, L.M., **Kang, S.K.**, & Dixon, R.A. (April, 2006). *Exploring metacognitive characteristics of collaborating dyads*. Poster presented at the 2006 Cognitive Aging Conference, Atlanta, GA.
- Kang, S.K.**, Jenkins, J., & Dixon, R. (2004). *The VLS: Longitudinal Research on Aging*. Poster presented at the annual Empey Lecture Series at the University of Alberta.

COURSE INSTRUCTORSHIPS

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| MGT262 Individual and Group Behavior in Organizations, UTM Management | 2011 - |
| PSY220 Introduction to Social Psychology, Dept. of Psychology, University of Toronto | 2009 |
| PSY332 Organizational Behavior, Dept. of Psychology, University of Toronto | 2008, 2009 |

DEPARTMENTAL AND COMMUNITY SERVICE

- | | |
|---|-----------|
| Member-at-Large, Graduate Student Committee, Society for Personality and Social Psychology | 2008-2009 |
| Co-Chair, Social/Personality/Abnormal Psychology Area Meeting, University of Toronto | 2007-2008 |
| Vice-President, Psychology Graduate Student's Association, University of Toronto | 2007-2008 |
| Member-at-Large, Graduate Student Committee, Society for Personality and Social Psychology | 2007-2008 |
| Graduate Student Orientation Committee, Department of Psychology, University of Toronto | 2007 |
| Graduate Program Committee, Department of Psychology, University of Toronto | 2006-2008 |
| Graduate Student Representative, Social/Personality Section, Canadian Psychological Association | 2006-2007 |

PROFESSIONAL AFFILIATIONS

Society for Personality and Social Psychology
Association for Psychological Science
Society for the Psychological Study of Social Issues
Canadian Psychology Association

Ad-Hoc Reviewer:

Canadian Journal of Behavioural Science
European Journal of Social Psychology
Group Processes and Intergroup Relations
International Journal of Aging and Human Development
Journal of Experimental Social Psychology
Journal of Social Issues
Personality and Social Psychology Bulletin
Psychological Science
Psychophysiology
Sex Roles
Social Psychological and Personality Science

REFERENCES

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(Updated November 22, 2011)

CURRENT POSITION AND AFFILIATIONS

2010-Present: Assistant Professor of Economics, Johns Hopkins University, Carey Business School
2008-Present: IZA, Bonn, Research Fellow
2003-Present: Fondazione Rodolfo De Benedetti, Milan, Research Fellow

PREVIOUS POSITIONS

2007-2010: Assistant Professor of Business Economics and Public Policy, University of Michigan,
Ross School of Business

EDUCATION

2007: Ph.D. in Economics, University of Chicago, Department of Economics, Chicago, IL
2003: M.A. in Economics, University of Chicago, Department of Economics, Chicago, IL
2000: Laurea (B.A.) Summa cum laude in Economics and Social Disciplines (DES), Bocconi
University, Milan, Italy
1998: Exchange Student, York University Schulich School of Business, York, Canada

FIELDS OF INTEREST

Labor, Incentives, Prosocial behavior, Health, Experimental.

PEER-REVIEWED PUBLICATIONS

"Will there be Blood? Incentives and Displacement Effects in Pro-Social Behavior"
American Economic Journal: Economic Policy, forthcoming (with N. Lacetera and R. Slonim)

"Do Unemployment Benefits Promote or Hinder Job Turnover?"
Journal of Development Economics 93 (2010) 109-125 (with T. Boeri)

"Social Image Concerns and Prosocial Behavior: Field Evidence from a Nonlinear Incentive Scheme"
Journal of Economic Behavior and Organization 76 (2010) 225-237 (with N. Lacetera)

"Do All Material Incentives for Prosocial Activities Backfire? The Response to Cash and Non-Cash Incentives for Blood Donations"
Journal of Economic Psychology 31 (2010) 738-748 (with N. Lacetera)

WORKING PAPERS

"Rewarding Altruism? A Natural Field Experiment", **NBER working paper 17636**.
(with N. Lacetera and R. Slonim)

"Time for Blood: The Effect of a Naturally-Occurring Incentive for Altruistic Behavior",
R&R, Journal of Law, Economics and Organization (with N. Lacetera)

WORK IN PROGRESS

"Female Executives, Wage and Promotion Policies, and Firm Performance" (with L. Flabbi and F. Schivardi)

"Wage Dynamics and Insurance"

"Export and Wages: Evidence from Matched Employer-Employee Data" (with F. Schivardi)

"Removing Financial Barriers To Organ and Bone Marrow Donation: The Effect of Leave and Tax Legislation In The US" (with N. Lacetera and S. Stith)

"Employment and Welfare Consequences of Compressing the Wage Structure"

"Motivating Blood Donation: Field Experiments in Argentina" (with V. Iajya, N. Lacetera and R. Slonim)

"Obesity, Health Insurance and Wages: New Evidence from the NLSY" (with C. DePasquale)

"Do employers respond to minimum wages by adjusting in-kind compensation? Evidence from Thailand" (with W. Kilenthong)

POLICY PAPERS

"Labor Regulations in Developing Countries", **World Bank SP Discussion Paper** 0833, October 2008 (with T. Boeri and B. Helppie)

The Impact of Non-Wage Benefits on Job Quality and Labor Market Outcomes in the Developing World: What do we know?, **World Bank Employment Policy Primer** N.13, December 2009 (with B. Helppie)

IN ITALIAN

"Il mercato del lavoro e la giurisprudenza in materia di licenziamenti", *Diritto delle Relazioni Industriali*, N. 02/2001, Associazione Lavori e Ricerche, Milano, Giuffrè, 2001.

"Principi di Microeconomia e Macroeconomia: Esercizi e temi d'Esame svolti", Microeconomics Exercises Book (in Italian), with G. DeGiorgi, *Casa Editrice EGEA*, Bocconi University, Milan, 2004.

INVITED SEMINARS

2012: Columbia University, Graduate School of Business (New York - scheduled); Center for Global Development (Washington, DC - scheduled);

2011: University of Maryland, Department of Economics (College Park, MD); Yale University, Department of Economics (New Haven, CT); Yale School of Management (New Haven, CT), Johns Hopkins University, Bloomberg School of Public Health (Baltimore, MD), Johns Hopkins University, Dept. of Economics (Baltimore, MD).

2010: University of Maryland Business School (College Park, MD), Einaudi Institute for Economics and Finance-EIEF (Rome, Italy), Johns Hopkins University Carey Business School (Baltimore, MD).

2009: Universidad de Chile (Santiago, Chile), UC Santa Barbara (Santa Barbara, CA), The World Bank (Washington, DC), Georgetown University (Washington, DC), Stockholm School of Economics (Stockholm, Sweden), University of Cagliari (Cagliari, Italy).

2008: Indiana University (Bloomington, IN), Northwestern University (Evanston, IL), University of Rochester (Rochester, NY), UC Irvine (Irvine, CA), University of Michigan (Ann Arbor, MI), University of Edinburgh (Edinburgh, Scotland), Oxford University (Oxford, England).

2007: University of Michigan (Ann Arbor, MI), University of Illinois (Urbana-Champaign, IL), Case Western Reserve University (Cleveland, OH), Federal Reserve Board (Washington, DC), RAND Corporation (Santa Monica, CA), Duke University (Durham, NC).

CONFERENCE PRESENTATIONS

2012: American Economic Association Meetings (Chicago, IL - scheduled).

2011: American Economic Association Meetings (Denver, CO); Midwest Health Economics Conference (Ann Arbor, MI); fRDB Fellows and Affiliates Workshop (Milan, Italy), 2011 China India Consumer Insights Conference (New Delhi, India).

2010: Advances with Field Experiments, Wharton (Philadelphia, PA); NBER Summer Institute, Labor-Personnel Economics (Cambridge, Mass); Association for Public Economic Theory Annual Conference (Istanbul, Turkey); American Society of Health Economists (Ithaca, NY); IZA-World Bank Conference on Employment and Development (Cape Town, South Africa); World Bank

Workshop on "Promoting Jobs in the Recovery for Men and Women: What Works, What Doesn't and Why?".

2009: American Economic Association Meetings (session chair) (San Francisco CA); IZA-World Bank Workshop on Active Labor Market Policies (Bonn, Germany); Association for Public Economic Theory Annual Conference (Galway, Ireland), Society for Judgment and Decision Making Meeting (Boston).

2008: American Economic Association Meetings (New Orleans, LA); Econometric Society (discussant) (New Orleans, LA); American Society of Health Economists (Durham, NC);

2007: IZA-World Bank Conference on Employment and Development (Bonn, Germany); Society of Labor Economists (Chicago, IL);

2006: Society of Labor Economists (Boston, Mass); Midwest Economics Association (Chicago, IL); Eastern Economics Association (Philadelphia, PA). 2005: American Economic Association Meetings (Philadelphia, PA).

REFeree REPORTS

American Economic Review; B.E. Journal of Economic Analysis and Policy; Economica; CESifo Economic Studies; Journal of Applied Econometrics; Journal of Benefit-Cost Analysis; Journal of Economic Behavior and Organization; Journal of Economics & Management Strategy; Journal of the European Economic Association; Journal of Labor Economics; Journal of Law, Economics, and Organization; Journal of Political Economy; Journal of Socio-Economics; Labour; Labour Economics; Management Science; Review of Economic Studies; Review of Economics of the Household; Small Business Economics; World Bank Human Development Network; World Bank Labor Markets Unit.

TEACHING

Instructor:

- 2012: Economics for Decision Making, MBA, Johns Hopkins University Carey Business School.
- 2011: Economics for Decision Making, MBA, Johns Hopkins University Carey Business School.
- 2010: Topics in Personnel and Organizational Economics, Ph.D., Ross School of Business. Incentives and Productivity (personnel economics for managers), Full-time MBA, University of Michigan Ross School of Business.
- 2009: Incentives and Productivity (personnel economics for managers), Full-time MBA, University of Michigan Ross School of Business. Applied Microeconomics, BBA Core course, University of Michigan Ross School of Business.
- 2008: Applied Microeconomics, BBA Core course, University of Michigan Ross School of Business (Course Coordinator).

2007: Applied Microeconomics, BBA Core course, University of Michigan Ross School of Business.

Teaching Assistant:

2003-2006: Microeconomics (MBA and Executive MBA); Managing the Workplace (MBA and executive MBA); Competitive Strategy (Executive MBA); University of Chicago Economics Department and University of Chicago Graduate School of Business, years 2003-2006.

GRANTS AND AWARDS

Social Sciences and Humanities Research Council of Canada (SSHRC) Grant, Field Experiments in Global Health: Motivating Voluntary Blood Donations in Argentina (with Victor Iayja, Nicola Lacetera and Robert Slonim), 2010-11, \$42,000.

National Science Foundation (NSF) grant for "Field Experiments on Incentives and Altruism" (with Nicola Lacetera and Robert Slonim), 2009-11, \$330,000.

Mitsui Life Financial Research Center grant for "Export and Wages" (with Fabiano Schivardi), 2008-2010, \$5,000.

Ross School of Business Small Grant for "Incentives and Pro-Social Behavior" (with Nicola Lacetera and Robert Slonim), 2008-09, \$10,000.

Russell Sage Foundation Grant for Young Scholars for "Incentives for Blood Donation: Natural and Field Experiments" (with Nicola Lacetera and Robert Slonim), 2008-09, \$5,000.

E. and T.W. Schultz Endowment Fund Dissertation Fellowship, University of Chicago, 2006-07.

University of Chicago Unendowed Scholarship, 2003-05.

Ente Luigi Einaudi Scholarship for Graduate Studies, 2003-04.

Bocconi University Scholarship for Graduate Studies, 2001-02.

Best Graduates Award, Bocconi University, 2000.