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VOCAL ATTRACTIVENESS OVER THE OVULATORY CYCLE

Joan Buck, '10

Women experience a variety of changes, both physical and emotional over the course of their ovulatory cycles. The hormonal fluctuations that cause these changes affect women's vocal production as well. Evidence suggest that pitch, rate, pitch excursion, and articulation may change depending on the time during the ovulatory cycle that women's voices are recorded. This project examines the impact of ovulation on a woman's voice. Participants are asked to fill out an initial pre-screening survey. Those who do not meet the qualifications - that they are heterosexual, non-smokers and fluent only in English - are not included in the study. Qualified participants are called in for two identical recording sessions - one during a high fertility, or ovulatory phase and one during a low fertility, or non-ovulatory phase. The ovulatory cycles are determined from the participants' responses to questions about their menstrual cycles given in the initial survey. In the recording sessions, students are first asked to say five vowels five times. The key words stEAK, flEEce, spA, gOAt, gOOse are used to indicate to participants the vowels that they are to pronounce. They are also asked to count from one to ten five times and to ask three dating questions to an imagined male interlocutor. They are also asked to rate how they think their voice sounds based on provided pairs of adjectives, as well as rate their current emotional state based on another list of adjectives. Finally, participants are asked about the onset of their latest menstrual cycle, in order to check the accuracy of the initial predictions of their ovulation. These recordings will be analyzed for changes in fundamental frequency, pitch

excursion, rate, and articulation using Praat, a speech analysis software program. We expect to find that during ovulation participants' pitch and pitch excursion will increase, except in the vowel task, that their rate of speech will decrease, and that the participants will have possible changes in articulation, either above or below their normal levels of articulation.

Advisors: Professor Elissa Koff, Professor Andrea Levitt, Professor Margery Lucas, Cognitive and Linguistic Sciences

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VARIATION IN WATER QUALITY REGULATIONS IN CALIFORNIA AND EFFECTS ON DAIRY LOCATION

Regina Hogle, '09

In recent decades, urban encroachment and increasing environmental regulation have impacted California's dairy industry. A virtual morass of environmental legislation affects dairies in the state, and can differ depending on location, creating the possibility for within-state pollution havens. This project details the regional, state, and federal environmental regulation of California's dairy industry, and examines data to see if it matches a hypothesis of increased regulation affecting dairy location. Using county-year data, we show empirical evidence of changing dairy location within the state matching times of local legislative action. The Central Valley gained production while the more regulated and urban-affected Los Angeles area lost. Large dairies have increased by 150% in the Central Valley even as the number of small farms in the region declined by a third.

Advisor: Professor Stacy Sneeringer, Economics

Funded by the Office of the Dean of the College

HIV AND FERTILITY RATES IN UGANDA: A BEHAVIORAL RESPONSE TO THREAT

Virginia Cary Ritter, '10

For the past half century, economists have observed both a widespread HIV/AIDS epidemic across sub-Saharan Africa and slowing fertility rates in the region. Researchers have questioned whether women may respond to the HIV threat by adjusting their fertility behavior, and having more or fewer children. This may significantly influence the nation's population size and growth rate. To get an understanding of possible behavioral changes in response to the HIV epidemic in Uganda, we examine trends in fertility trends and behaviors. Using over 27,000 observations from four nationally representative Demographic and Health Surveys gathered by the United States Agency for International Development, we examine fertility rates, fertility preferences, contraceptive use, birth spacing, age at first marriage, divorce rates, and breast feeding rates relative to the epidemic's timing. We find that the decline in total fertility rates has stalled as the epidemic has reached a plateau, and that contraceptive use has actually declined during the epidemic, particularly at younger ages. While these trends provide suggestive evidence of fertility responses to HIV in Uganda, more rigorous analysis is necessary to discern effects conditional on confounding variables.

Advisor: Professor Stacy E. Sneeringer, Economics
Funded by the Office of the Dean of the College

FINANCIAL GLOBALIZATION AND BANK CRISES IN EMERGING MARKETS

Leslie Sheng Shen, '10

Bank crises have become an increasingly common phenomenon in the post-Bretton Woods era, especially in emerging economies. Since emerging markets do not have well-established financial markets, bank crises can have particularly adverse consequences in those economies, resulting in severe economic contraction. This research investigates the determinants of the cost and duration of bank crises in 20 emerging markets over the years 1976-2002 and examines the impact of financial globalization on those crises. During the period, 29 separate crises occurred. The output costs of the crises range from 0% of GDP to 46% of GDP. Most of these crises lasted for more than one year, with the longest being eleven years. We investigate the links between financial globalization and bank crises by including both domestic and external variables in two types of empirical models: the Tobit model to analyze the determinants of the cost of the crises, and hazard functions to study the determinants of crises' duration. Empirical results indicate that both domestic and external variables are significant factors in explaining the cost of banking crises. Higher domestic economic growth and credit growth are found to be significant in increasing output costs, while inflation and government consumption lower these costs. Lower trade openness and contagion from regional crises also contribute to higher output costs. On the other hand, the duration of the crises does not seem to be robustly affected by financial globalization.

Advisor: Professor Joseph P. Joyce, Economics

Funded by the Office of the Dean of the College

SIZING UP CARBON FOOTPRINTS

Anli Yang, '09

First coined in 1999, the term "carbon footprint" experienced a meteoric rise in usage in 2006 that has continued to this day. Drawing on the tools of history, social studies of science, and political science, I examined carbon footprint in the broader context of environmental politics with a focus on its antecedents, recent popularity, and potential for improvement..

Unlike its most direct predecessor, the more comprehensive (and less popular) "ecological footprint," the carbon footprint ignores spatial implications of human consumption and concentrates on a much smaller part of the human interaction within our environment. However, carbon footprints are applicable at multiple scales, from the individual up through the business and country levels, and have become important boundary objects that allow for people across disciplines and industries to communicate about their contributions to global climate change. In addition, the carbon footprint sheds light on the status of climate change as an important issue garnering public attention.

Today, one can measure his or her individual or household carbon footprint simply by visiting

one of many online carbon footprint calculators and providing basic information about home energy usage, car travel, and air travel. Though these calculators purport to measure the same entity, the information gathered and the resultant carbon footprints can be vastly different. What explains these discrepancies, and might these necessarily render the concept futile? This study suggests several changes that would make carbon footprints more consistent and accurate.

How do carbon footprints fit into the broader environmental movement? Specifically, how do they fit into how responsibility for environmental change has been ascribed? Within a movement that has moved from talking about the public interest in the 1960s and 1970s to today's more individualized approaches, carbon footprints seem to fit right in. In the context of a world faced with global environmental challenges, the mantra of "think globally, act locally," seems to be fulfilled in the idea of the carbon footprint. However, the carbon footprint, coupled with green consumerism, presents serious challenges to effectively tackling environmental problems.

Advisor: Jay Turner, Environmental Studies
Funded by the Office of the Dean of the College

“ONE CHINA”: THE EFFECT OF THE QING LEGACY OF CONQUEST ON THE CREATION OF MODERN CHINA

Cynthia Chen, '10

When did the concept of a modern China encompassing the often contested territories of Xinjiang, Tibet, Inner Mongolia, and Taiwan emerge? Why does present-day Chinese nationalism hold that these multiethnic frontier areas are fully a part of the Chinese nation-state even though many of these areas had never been under continued Chinese rule until fairly recent times? Drawing on a wide range of primary and secondary sources focusing on the late Qing dynasty, we found that this concept of modern China emerged out of several trends that began in the late 19th and early 20th centuries. These trends led to a drastic shift in Qing ruling techniques as they used various tactics in an attempt to incorporate these frontier areas into China proper, making these once-separate areas a part of the idea of a unified modern China.

Before the late 19th century, Qing elites followed two general principles in their rule of frontier areas: they ruled the people according to their indigenous customs and kept them separate from China proper and other frontier territories. Later, as a response to frontier unrest and incursions from the European powers and the Japanese, they drastically changed their approach to frontier areas. The expansion of Qing bureaucracy, the application of provincial administration tactics from China's interior to the frontier, and attempts to make these areas culturally Chinese were consistent with the Qing's increased emphasis on state-building. These policy changes laid the foundation for the development of a Chinese nationalist ideal that considers Xinjiang, Tibet, Inner Mongolia, and Taiwan integral parts of the Chinese nation-state even when many people in those areas did not identify with the Chinese nation.

Advisor: Professor C. Pat Giersch, History
Funded by the Office of the Dean of the College

BUSINESS EDUCATION IN THE UNITED STATES Missy Ford, '09

Today, one out of every five college students graduate with a bachelor's degree in business, making it by far the most popular undergraduate major.¹ However, business education was not always this way; beginning with its foundation in 1881, business education has changed in focus, quality, and popularity. At various points in its history, the education's emphasis has moved from trade skills to academic research to practical application. In order to understand the "one in five" statistic, we must look at the historical progression of business education. Through understanding the significant trends in the dynamic nature of business education, we can better develop an analysis of where the business student stands today.

Advisor: Ann Congleton, Philosophy
Funding: Office of the Dean of the College

¹<http://chronicle.com>. Section: The 2007-8 Almanac. Volume 54, Issue 1, Page 20.

STUDY OF MOTIVATION IN CITIZEN ENGAGEMENT

Marjorie W. Schaeffer, '09

47% of the Americans adults report being involved in some kind of public work in their community in the last year (Wuthnow, 1991). Together these volunteers form the backbone of civic and political life, yet researchers know very little about the processes by which people get involved in this type of participation. The majority of previous research has focused on *what* motivates people to get involved. Instead, our research focuses on *how* people become motivated. In the Study of Motivation of Citizen Engagement we conducted 55 semi-structured, in-depth interviews with political activists from around the United States. Contrary to previous research, which showed that people got involved for very idiosyncratic reasons, we found important commonalities in the processes by which people got motivated. Three major themes emerged concerning people's civic and political involvement: one, what is the source of people's values, two, how do they connect those values to politics, and three, what contributes to individuals' escalating involvement. Together these findings have important implications for our understanding of political and civic participation in American as well as applications for expanding political participation in America.

Advisor: Professor Hahrie Han, Political Science
Funding: Office of the Dean of Students

INTERPRETING THE FACTORS OF THE HIGHLY SENSITIVE PERSON SCALE

Michelle Bourgeois, '09

In 1996, Elaine Aron introduced her conceptualization of the trait of high sensory-processing sensitivity in her book, *The Highly Sensitive Person*. Across a series of seven studies, Aron and Aron (1997) constructed a self-report measure of sensory-processing sensitivity by combining observations from counseling work with interviews, phone surveys, and questionnaire studies of college students. The scale development process started with a pool of items related to the basic physiological temperament of sensory-processing sensitivity. In studies six and seven, however, the scale expanded to include aesthetic, conscientiousness, and shyness items due to a theoretical interest in the effects of a happy versus an unhappy childhood on highly-sensitive people.

Although the items added later in the series of studies appear, at face value, to represent constructs distinct from sensory-processing sensitivity, Aron and Aron concluded that their 27-item scale is a unidimensional measure of a single psychological construct.

Two psychometric studies of the Highly Sensitive Person Scale (HSPS) have since been published that present a two-factor (Evans & Rothbart, 2008) and a three-factor (Smolewska, McCabe, & Woody, 2006) rotated solution for the 27 items. The purpose of the present research was to reexamine the 27 items in two large samples ($Ns = 433$ and 393) and interpret the factors through correlations with existing scales. Our new data did not support Aron and Aron's (1997) original interpretation of a unidimensional scale. Instead, we concluded that the HSPS would be optimally scored by summing the 19 core sensitivity items that load consistently on the first unrotated and rotated factor and omitting the rest. The remaining eight items correlated more strongly with measures of other psychological constructs than they did with the 19 core sensory-processing sensitivity items of the HSPS: conscientiousness (2 items), openness (5 items) and shyness (1 item).

Advisor: Professor Jonathan Cheek, Psychology
Funded by the Office of the Dean of the College

WISDOM AND ITS MEASURES

Veronica Cole, '09

Throughout history, wisdom, or the ability to make sound decisions in difficult life matters, has been highly valued -- as exemplified by the continued relevance of the Biblical story of King Solomon. Despite its importance, however, wisdom has remained largely unexplored by American psychologists because it is a complex construct that is difficult to measure empirically. We validated the newly developed Self-Assessed Wisdom Scale (SAWS; Webster, 2004) on a group of college undergraduates. Based on the *balance theory* of wisdom (Sternberg, 1998), we predicted that scores on the SAWS should be positively associated with an emphasis on personal growth and insight that is devoid of crass hedonism, a concern for harmonious social relations, and a larger concern for the welfare of the world at large. We further assumed that because wise individuals are capable of understanding the bright and dark sides of human nature, high scorers on the SAWS should be neither characterized by undue cheerfulness (positive affect) nor sadness or hostility (negative affect). As expected, the SAWS correlated with measures of personal growth and insight but, contrary to expectation, it was unrelated to social and ecological concerns. Our findings indicate that, at least among college undergraduates, an interest in personal development and self-understanding does not necessarily translate into a broader concern for the welfare of others and the surrounding environment. These results raise concerns about the validity of the SAWS as a measure of wisdom and, on a broader level, challenge the idea that wisdom can be assessed with self-report questionnaires.

Advisor: Paul Wink, Psychology
Funded by the Office of the Dean of the College

THE ROLE OF GESTURE IN LEXICAL RETRIVAL: DOES GESTURING MAKE A DIFFERENCE?

Samantha Grossmith, '11

Pamela Doig, Holy Cross, '09

Whether it is facilitating dialogue or grasping for a desired word, gesturing appears to be entwined in most, if not all, forms of speaking. Little is known, however, to what extent gesturing actually allows the speaker to retrieve a desired word. In the current study, we examine whether gesture aids in word retrieval.

Some studies have found that gesture helps with word retrieval (Frick-Horbury & Guttentag, 1998; Krauss & Hadar, 1999), while others have argued that gesturing does not (Beattie & Coughlan, 1999; Alibali, Kita, & Young, 2000). These mixed findings stem from various methodological problems within the studies. To remedy these discrepancies, we attempt to experimentally control for some of the confounds observed in previous studies.

In this study, 40 undergraduate participants (39 F, 1 M) ranging from the ages of 18.15 to 23.01 (years; months) were randomly assigned to two groups: "Gesture Allowed" (GA) and "Gesture Inhibited" (GI). The GA group was allowed to gesture, while the GI group was inhibited from gesturing by placing their hands in gloves attached to a board. All participants were shown 52 pictures consisting of low frequency target words, likely to elicit "tip of the tongue" (ToT) experiences. We predicted that those in the gesture inhibited condition would retrieve fewer words and have more ToTs than those who were allowed to gesture. We found that the two groups did not differ in the number of correct retrievals or the number of ToTs. However, those who were allowed to gesture were more likely than those in the gesture inhibited condition to resolve their ToT states, eventually retrieving the correct word. Our findings indicate that gesturing plays a very specific role in helping us resolve ToT experiences.

Advisor: Professor Jennie E. Pyers, Psychology Department
Funded by the Office of the Dean of the College and the Council for Undergraduate Research, American Psychological Foundation

PRESCHOOLERS' RELATIONSHIPS AND INTERACTIONS WITH IMAGINARY COMPANIONS

Svetlana Roskin, '10
Alyssa Faro, Connecticut College, '08

Do preschoolers engage with imaginary companions in a way that reflects real-life relationships? Furthermore, do their behaviors and interactions fit into the context of these specific relationship types? By examining descriptions in children's and parents' interviews about children's imaginary companions, we were able to categorize imaginary companion relationships into five global relationship types: older friend, younger friend, sibling, peer, and pet. We hypothesized that children would exhibit care-taking behaviors (e.g., explaining, comforting, nurturing) and conflicts according to these imaginary companion global relationship types. We predicted that children with younger friend imaginary companions would give their friends the most care, children with older friends would receive most care, and that children with peer or sibling imaginary friends would, on average, give and receive equal amounts of care. We also predicted that children would experience more conflicts in sibling-like relationships than in any other type of imaginary companion relationship. To test this hypothesis, parents were asked to keep diaries of episodes involving their children's imaginary companions over the span of approximately two weeks. These diary episodes were then coded for a variety of variables, including caretaking behaviors and the presence of conflict. If our predictions are correct, children as young as

preschool may have a clear understanding of the kinds of behaviors that tend to occur in different types of relationships, whether with peers, older friends, younger friends, siblings, or pets. Preschool age children may also be using imaginary companions as a tool for developing their interpersonal relationship knowledge and skills.

Advisor: Tracy R Gleason, Psychology Department
Founded by the Office of the Dean of the College

THE EFFECTS OF GLOBAL TRAINING ON THE INDIAN IT WORKPLACE AND SOCIETY

Rachel Behler, '10

With the rise of global outsourcing, Indian-Western corporations have endeavored to address the cultural gaps they face with global training. Global training disseminates knowledge of other cultural business practices as well as teaches employees to be “global” employees who practice “global culture”. This global culture standardizes business protocol and etiquette with regards to cross-cultural communication and production in efforts to increase capitalist efficiency. Although global culture is theoretically a synergy of Indian and Western business practices, it is significantly more influenced by Western culture. As a result, Indian IT employees must adapt significantly more than their Western counterparts to perform as comparable global employees.

Superficially, it appears that the global training implemented by multinational corporations is a modern example of Western cultural imperialism as Indian IT engineers must adopt Western practices in order to effectively function with their Western counterparts. However, global training proves to be multidimensional in effect as it serves as an additional form of cultural capital that consequently elevates the social status of Indian IT engineers in Indian society. Moreover, as a new form of exclusive cultural capital, global training more exactly defines the characteristics India’s of “new middle class,” a class comprised disproportionately of IT engineers.

Hence, there is mutual incentive for both multinational corporations and Indian IT engineers to engage in global training as it simultaneously increases efficiency and boosts social status. This study of global training and its effects complicates the assumption of Western cultural hegemony and Thomas Friedman’s “Flat World” theory, as the impact of global training in Indian society appears to reinforce its social hierarchy regardless of its emerging economic competitive edge.

Advisor: Smitha Radhakrishnan, Sociology
Funded by the Office of the Dean of the College

THE LIFE HISTORIES OF BOSTON’S YOUNG REFUGEES

Julia Schroeder, '09

There is a long tradition in Sociology of examining the position of the stranger or “other” in society however much of it is purely theoretical. One of the most interesting, and least studied, examples of this social type is the refugee. These individuals are strangers in the most basic sense, they are unwillingly displaced from their homes "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of their nationality, and is unable to or, owing to such

fear, is unwilling to avail him/herself of the protection of that country" (1951 United Nations Convention Relating to the Status of Refugees). They are at the whims of the interplay between international and state power and are often treated not as individuals but as faceless masses.

This project developed out of a desire to take this Sociological tradition and combine it with grounded research in order to individualize the refugee experience. This is an ongoing project examining young refugee life histories and interviews to compare them in a developed society and in a developing society. I hypothesized that the life experiences of refugees would have many similar factors regardless of their destination and origin countries. However, I believe that the differentiating factor of a refugee's life experience would be whether they experienced refugeehood in a developed or developing destination state. Meaning that refugee life experiences across the globe would contain many common foundational elements, however, differences would show themselves in these foundational elements depending on whether the refugee settled in a developed versus a developing nation. During Wintersession of 08-09 I will conduct interviews at the University of the Witwatersrand in Johannesburg, South Africa to provide the developing country perspective.

Advisor: Thomas Cushman, Sociology
Funding by Office of the Dean of the College