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2008 APA Convention....

A Preview of Convention Attractions

by Nancy Segal - Cal State Fullerton

Nancy Segal

Division 1 (General Psychology) chose *Evolutionary Psychology* and *Behavioral Genetics* as its central themes for the 2008 convention program. Evolutionary Psychology is concerned with identifying behavioral and physical characteristics, functions and processes that foster individual survival and reproduction. Behavioral genetics is concerned with the inherited and experiential influences on individual differences in behavior. Both perspectives continue to receive considerable attention in the psychological literature and in the popular press.

An impressive list of speakers and topics have been assembled for the upcoming convention. *Invited Talks:* **David Cesarini** and **Bjorn Wallace** present results from an identical twin-fraternal twin comparison of strategies applied during an Ultimatum Game. **David Haig** examines the behavioral correlates of Prader-Willi syndrome, a condition suggesting that parent-offspring conflict played a role in the evolution of a distinctive human childhood. *Symposia:* **Sarah Hill** chairs a session concerned with evaluating decisions in light of evolutionary theorizing. **Catherine Salmon,** editor of *Family Relationships: An Evolutionary Perspective,* leads a discussion of parent-child and sibling relations with reference to evolutionary concepts and principles. **Aaron Goetz** chairs a session on old and new topics in behavioral genetics and evolutionary psychology—contributions from the famous Bar Harbor Laboratory, and the conflict that ensues when the evolutionary interests of males and females diverge. Jason Young chairs a session that takes an evolutionary look at perceptions of facial and physical attributes across the menstrual cycle, and at unknown visual illusions. Division 1 President **Thomas J. Bouchard, Jr.** presents new evidence for the evolution of the "traditional moral virtues triad."

Other Division 1 highlights include a conversation hour honoring the legendary psychologist **Anne Anastasi** on the 100th anniversary of her birth. Anastasi made seminal contributions to many areas of psychological theory and practice. In addition, a symposium on basic emotions considers the basic emotions paradigm, as well as various biological and neuroscientific views of emotional development.

On the following pages you will find "preview" pieces by several of the Divion 1 presenters on evolutionary psychology at this year's APA Convention.

Nancy Segal *and* ***Jason Young*** *are Co-Chairs of the 2008 convention program for Division One.*

Genes and Games

by David Cesarini - Massachusetts Institute of Technology

David Cesarini

Experimental economics, the use of controlled experiments to test economic theory, has surged in popularity in recent years. The Nobel prize awarded to the psychologist Daniel Kahneman and the economist Vernon Smith is both a cause and an effect of this development. By now, the use of these methods has transcended into other fields such as evolutionary theory, psychology and neuroscience .

The bulk of experimental work has focused on testing whether theoretical predictions hold on average. Though there are important exceptions, most notably a nascent literature on behavioral anomalies and IQ, the study of individual variation in economic behavior has suffered from a comparative neglect. For instance, in an early experimental paper, Vernon Smith was interested in testing whether competitive price theory holds, that is to say, if prices converge to the equilibrium in a laboratory experiment. The advantage of the laboratory setting here is obvious; supply and demand curves can be created by the experimenter, whereas in market data only equilibrium prices are observed. His conclusion: "the outcome was unbelievably consistent with competitive price theory".

In one sense, the science of economics resembles the branches of psychology that focus on human universals, or study the aggregate effects of numerous individual actions, thereby relegating discussion about individual variation to a footnote. Ultimately, abstracting from individual differences is likely to reduce the predictive accuracy of any model of human behavior. For example, as demonstrated by economists Dan Benjamin, Sebastian Brown and Jesse Shapiro, rationality is a much more plausible behavior assumption for individuals of high cognitive ability.

One might conjecture that one reason why there exists relatively little published work on individual differences in economic games is that it has been notoriously difficult to find variables which robustly predict individual differences. Indeed, as noted for instance by Colin Camerer, many of the correlations between individual behavior in experiments and various demographics measures that have been reported in the literature are either small or do not survive replication. Yet, absence of evidence does not imply evidence of absence. In light of the ubiquity of genetic influences, documented by behavior geneticists, for most human traits a reasonable place to start is to ask if there is genetic variation which explains differences in how individuals act in economic games.

Therefore, a Swedish team of researchers, of which I am a member, collected experimental data using a subject pool of mono- and dizygotic twins. Independently, the political scientists Christopher Dawes and James Fowler at UCSD recently conceived of and executed a similar battery of experiments on US twins. Comparing the behavior of identical and nonidentical twins is a form of quasi-controlled experiment. Both share the same upbringing, but their degree of genetic relatedness differs. To the extent that genetically identical twins make more similar choices in economic experiments, one can deduct that these choices have a genetic component. In all of these experiments, twins interacted with anonymous partners in the laboratory (not their co-twin).

This is not the first time economic experiments are carried out on twins. Previous studies have shown that monozygotic twins cooperate more with each other than dizygotic twins in prisoner's dilemma type situations. These papers therefore offer a laboratory test of inclusive fit-

ness theory. These experiments corroborated the hypothesis, and illustrate a second use of genetically informative data in economic experiments.

Consider the simple example of the ultimatum game, where two players are offered a chance to earn a certain sum of money. A proposer suggests how to split the sum. The responder can accept or reject the deal. If the deal is rejected, neither player gets anything. If the deal is accepted, both players are paid in accordance with the proposed split. Previous research has demonstrated that individuals care not only about monetary payoffs, but also take fairness considerations into account, routinely rejecting stingy offers, something a narrowly profit maximizing agent would not do. Little is known about why some players' behavior is relatively well approximated by the rational model, whereas other people, a vast majority, are willing to forfeit monetary payoffs out of "fairness" concerns. In a recent paper, we estimate that heritability of responder behavior in the ultimatum game is 40 %, suggesting that any attempt to understand responder behavior which ignores this genetic influence is incomplete.

Or consider the trust game, developed by Joyce Berg, John Dickhaut and Kevin McCabe. In this game, an individual (the investor) decides how much money out of an initial endowment to send to another subject (the trustee). The sent amount is then multiplied by some factor, usually three, and the trustee decides how much of the money received to send back to the investor. The standard game-theoretic prediction for a single anonymous interaction between two purely self-interested individuals is for the investor to send nothing, rationally anticipating that the trustee will not reciprocate. Yet, experiments consistently show that cooperation flourishes in the trust game—the average investor sends a significant share of the original endowment, and most trustees reciprocate. But who trusts and who reciprocates? In a joint paper with colleagues from UCSD, we show, in a Swedish and a US sample of twins, that the proclivity to trust, and to reciprocate trust, is moderately heritable. Of course, heritability estimates are always population specific, so it is interesting to note that similar estimates are obtained in two different samples, despite manifest cultural differences between the United States and Sweden.

What is one to make of these findings?

There are at least a few areas where it is immediately obvious that this research may prove helpful. For instance, heritability estimates can be used to discriminate between different models of the evolution of cooperation. Typically, such models differ in their predictions about equilibrium genotypic variation, and the persistent finding of moderate heritability might lend some support to theories featuring polymorphic equilibria.

More generally, our findings, together with previous findings in the behavioral genetics literature it is also time to take seriously the proposition that humans are endowed with genetic variation which underlies heterogeneity in strategies and preferences elicited in economic games. We hope that this finding can make a small contribution toward ending the almost singular preoccupation with social and cultural transmission in economic research, and taking genetic variation into account. Economics provides a rich set of analytical tools, but is sometimes crippled by an incomplete model of human nature. A richer, more evolutionarily informed, theory of human behavior would hopefully inject new ideas and fresh perspectives into the subject, without abandoning the rigor and cohesiveness which is the strength of economics.

Finally, it is obvious that laboratory experimentation on genetically related individuals is a fruitful strategy for understanding individual variation, but also to shed light on evolutionary hypothesis about kinship and cooperation. Future studies are likely to combine the two approaches, thereby deepening our understanding of the evolutionary, genetic and social underpinnings of preferences and their variation.

Evolutionary Insight into Siblings' Psychological Bag of Tricks

by Richard L. Michalski, Hollins University

In a recent chapter published in *Family Relationships* (Salmon & Shackelford, 2007), my co-author and I present a review of the literature on sibling relationships and highlight how the application of an evolutionary perspective can enrich our understanding of sibling relationships (Michalski & Euler, 2007). We reviewed research on sibling competition, sibling conflict, birth order, siblicide, and favoritism; and within these lines of research offer directions for future, evolutionary informed research. These lines of research have been the beneficiaries of an explosion of new, theoretically grounded findings over the past decade. In this chapter my co-author and I argue that an ardent application of an evolutionary perspective has transformed how we think of sibling relationships. Theories such as inclusive fitness theory (Hamilton, 1964), parental investment theory (Trivers, 1972), and parent-offspring conflict theory (Trivers, 1974) have revolutionized our understanding of sibling relationships; and the guidance offered by applying these theories, we believe, will continue to propel our research endeavors.

The study of sibling relationships has been hampered historically by disjointed approaches to understanding sibling relationships with little integration of various theoretical positions. Common historical and contemporary areas of study on sibling relationships include sibling relationships in childhood, sibling relationships in adulthood, studies on differences between and among siblings, sibling violence and abuse, and altruism toward siblings, to name just a few. An overarching framework from which to understand the nature of different sibling relationships and how these relationships change across the lifespan has been lacking. We propose that more earnest attempts need to be made to incorporate explicit evolutionary, adaptationist accounts of sibling relationships to propel future research in the area of sibling relationships in an integrated way. In short, the most revealing research on the nature of sibling relationships has yet to be done because the most powerful tool available to social scientists has not been fully brought to bear on the topic—Darwin's theory of evolution by natural selection.

I highlight below a brief primer on evolutionary psychology and discuss a few areas of research addressed in the chapter that showcase the value of applying an evolutionary perspective to the study of sibling relationships. These areas of research were chosen because they have benefitted (and will continue to benefit from) the insight offered by applying an evolutionary perspective.

Researchers guided by an evolutionary perspective are unified in their belief that psychological mechanisms have evolved via processes of natural selection and sexual selection (Darwin, 1859; 1871). Selection produces evolved psychological mechanisms that function to take in relatively narrow slices of environmental input and generate output correlated with reproductive or survival advantages in ancestral environments. Siblings, having been recurrent features of ancestral social environments, may have posed adaptive problems that led to the development of psychological mechanisms that counteract the adaptive problems posed by siblings. In the chapter, we propose that sibling relationships (1) may contribute to the development of certain classes of mechanisms including, for example, personality and sexual strategies, (2) may have forged specific mechanisms triggered only by the presence of siblings, and (3) that the activation of these mechanisms are unique to specific adaptive problems confronted at certain points throughout development. One area of research that has blossomed is the impact of genetic relatedness (or assessments of relatedness) on sibling relationships.

Genetic Relatedness

Research on how relationships between siblings vary as a function of the genetic relatedness has not been a central focus of most past research. A research platform informed by an evo-

lutionary perspective suggests that we can expect to find adaptations in the minds of humans that distinguish siblings based on cues of genetic relatedness. If female infidelity compromised genetic relatedness between siblings recurrently throughout human evolutionary history then selection may have crafted mechanisms that help identify kin based on characteristics that reliably signaled a genetic relationship. Psychological mechanisms triggered by cues of less certain genetic relationships may spur conflict between siblings or regulate investments made among siblings. In siblings, these psychological adaptations may become activated based on actual or perceived psychological similarity, actual or perceived physical similarity, parental attempts to manipulate perceptions of psychological or physical similarity, presence of same putative father, and/or features of parental behavior to which siblings may be sensitive (e.g., parental favoritism).

We can expect to find adaptations in the minds of humans that distinguish siblings based on cues of genetic relatedness.

A powerful study was presented by Jankowiak and Diderich (2000) who examined investments made among siblings in a Mormon fundamentalist community. Based on the ideology of this group, siblings are not differentiated along full sibling and half-sibling lines and are consequently instructed not to differentiate between these two types of siblings (that they need to be told not to distinguish between siblings is telling!). Despite ideological claims to the contrary, more solidarity is expressed with full siblings than with half-siblings as shown in monetary gifts, requests to babysit, feelings of closeness, favoritism, and attendance at birthday and wedding celebrations.

In the chapter, we present preliminary results of a study that was conducted to ascertain the specific types of aggressive tactics perpetrated by siblings on each other (Michalski & Shackelford, 2008). One popular tactic reported by siblings involved derogating a sibling by saying that he or she is genetically unrelated to others "in the family" (e.g., telling a sibling he or she was adopted). This tactic would emerge only if siblings were sensitive to the extent to which they are related to others in the family because of the consequences of *not* being related to kin in ancestral environments. We can expect these tactics to be deployed in early childhood by full siblings or half siblings but there are other types of siblings for which genetic relatedness is known. One such type of sibling relationship includes those between siblings-in-law.

Relationships with Siblings-in-laws

Very little research has emerged to understand relationships between siblings-in-law. The paucity of research in this area drives the speculative nature of this section. Despite this paucity, an evolutionary perspective can inform and guide predictions concerning these relationships. I have to first distinguish between different types of siblings-in-law. A sibling-in-law may be the mate of one's sibling, the sibling of one's mate, or the mate of one's mate's sibling. Couple these three types of siblings-in-law with the sex composition of these sibships and dust soon begins to rise masking the picture of these relationships. An appreciation of the insights of sibling relationships and mating psychology anchored to the evolutionary sciences, I believe, offers a heuristic guide to help the dust settle on the study of relationships between siblings-in-law. The relationship between siblings-in-law may be sex-specific and focused on the reproductively relevant resources offered by siblings-in-law. Researchers document that men, more than women, place greater emphasis on characteristics associated with youth in evaluating a prospective mate and that women, more than men, place emphasis on characteristics associated with resources in evaluating a prospective mate (See, for review, Buss, 2003). The quality of relationships with the mate of one's sibling may track the reproductively relevant resources he or she offers to one's sibling. Men and women may report their relationships with brothers-in-law as closer and less contentious when the brother-in-law exhibits characteristics linked with the mate preferences of the sister (e.g., access to resources, high social status). Conversely, men and women may report their relationships with sisters-in-law closer and less contentious when they exhibit characteristics linked with the mate preferences of the brother (e.g., youthfulness, sexual fidelity).

In short, siblings may feel closer to and develop better relationships with siblings-in-law who convey sex-specific characteristics associated with the mate preferences of one's sibling. The rub is that among same-sex siblings, what may make one happy with a sibling-in-law may also trigger attraction.

Among heterosexual, same-sex siblings, there is a *potential* for sexual attraction to develop between siblings-in-law. I am not aware of any data indicating prevalence of attraction between siblings-in-law but an evolutionary analysis suggests that we may see this potential revealed in the mate retention behaviors deployed by siblings in this context. For example, men and women might report interactions between their partners and same-sex siblings as more distressing than interactions between their partners and opposite-sex siblings. Siblings may also obstruct interactions between partners and same-sex siblings more often than interactions between partners and opposite-sex siblings.

The sex difference in mate preferences noted above leads to the prediction that among siblings, older brothers may be more likely to view as attractive (and consequently attempt to attract) the mates of younger brothers because the mates of younger brothers, on average, will be younger than the mates of older brothers. Women may then be more upset over interactions between their partner and a younger brother's partner than an older brother's partner. Men may be more upset over interactions between their partners and the partners of older sisters than the partners of younger sisters. Support for such predictions awaits future empirical examination but I expect such effects to emerge consistent with the nature of sibling relationships and of sex-differentiated mating psychology. In short, research in the area of relationships with siblings-in-law is wide open with possibilities.

I argue that many important components and studies of sibling relationships have been missed by a failure to incorporate the theoretical power of evolutionary theories and that an evolutionary perspective offers us a means to generate new, untested hypotheses in many areas that have been neglected. I believe that much research has yet to be done on topics such as relationships with siblings-in-law, siblicide, sibling conflict, relationships between siblings of varying degrees of relatedness, jealousy, favoritism, examinations of personality differences between siblings, and an exploration of possible mechanisms that function in the minds of siblings to distinguish full siblings from half-siblings. Although many of the predictions offered here have not been tested, I expect answers to such research questions to emerge in the near future. I also expect that a clearer and more comprehensive picture of sibling relationships will emerge with the increased application and appreciation of the value an evolutionary perspective offers to our understanding the nature of sibling relationships.

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Evolutionary Psychology & Family Relationships

by Shirley McGuire - University of San Francisco

I am not an evolutionary psychologist, but I was intrigued by the new book by Catherine Salmon and Todd Shackelford, *Family Relationships: An Evolutionary Perspective*. My research examines sibling relationship dynamics in middle childhood and adolescence, using socialization and behavior-genetic approaches. Before I read their book, I was familiar with basic theories and concepts in evolutionary psychology (e.g., inclusive fitness and parental investment) and with studies in my field based on this framework (e.g., Frank Sulloway's [1996] work on birth order and personality development). But, it was only recently that I learned to appreciate the power of this perspective for understanding family relationships. I must confess that I have ignored research on family dynamics by evolutionary psychologists for most of my career. I suspect that many of my fellow social scientists would admit that they have too.

My interest in this perspective has developed during my collaboration with Nancy Segal, an evolutionary psychologist and behavior geneticist at the University of California, Fullerton, on the Twins, Adoptees, Peers, and Siblings (TAPS) study. The main goal of TAPS is to investigate links between sibling dynamics and children's social and cognitive development using a twin-adoption-sibling design. The behavior-genetic design allows us to test hypotheses about links between genetic relatedness and family relationships from many perspectives, including predictions based on evolutionary theory. Salmon and Shackelford's (2008) book includes chapters by top researchers in the field about genetic contributions to family dynamics, such as dating, parenting, sibling competition, and even grandparenthood. Consequently, I am excited to be the discussant for a symposium on family relationships from an evolutionary perspective at the next APA convention. In this article, I provide my initial reactions to the chapters in Salmon and Shackelford's book by the three panelists in the APA symposium—Catherine Salmon, Richard Michalski, and Aaron Goetz.

Shirley McGuire

Let me first give a brief review of some of the ideas that I found particularly compelling in the three chapters, which all focus on an aspect of family conflict. According to an evolutionary psychology approach, the level of genetic relatedness between individuals impacts their daily decisions and the quality of their relationships. (This differs from a behavior-genetic approach that focuses on links between genetic relatedness and individual differences in traits and behaviors). Catherine Salmon's chapter focuses on parent-offspring conflict theory. Salmon explains how this theory can be used to explain both perplexing maternal conditions (e.g., gestational diabetes) and common parenting situations (e.g., such as weaning conflict and parental differential treatment of siblings). Richard Michalski, in a chapter co-authored by Harald Euler, uses parent-offspring conflict theory to discuss the roots of sibling competition. Their hypotheses concerning sibling competition and grandparent investment were fascinating. Aaron Goetz's chapter on violence and abuse in families utilized an evolutionary perspective on parental uncertainty to explain how mistreatment can occur in even caring romantic relationships.

Now, let me turn to some two issues that emerged while I was reviewing their chapters. First, it is not clear how evolutionary theory explains some well-supported findings in the family literature. For example, according to

parent-offspring conflict theory, parents should invest equally in their children because they are genetically related to their children to the same degree. (The scenario would be different if one or more of the children were not genetically related to the parents.) From evolutionary standpoint, children should demand all of their parents' resources because they are 100% genetically related to themselves, but are only 50% genetically related to their siblings, on average. Consequently, there should be parent-child conflict about parental investment. Studies of siblings do show that parental differential treatment towards siblings is an issue for parents and children (McGuire, 2001). However, parents show differential treatment towards some children and not others in families where the parents are biologically related to all of the children. In addition, biological parents of monozygotic twins treat them more equally compared to biological parents of dizygotic twins and full siblings. How would parent-offspring conflict theory explain such findings?

The level of genetic relatedness between individuals impacts their daily decisions and the quality of their relationships.

Second, there seems to be a boundary between family psychology and evolutionary psychology that may be preventing an exciting exchange of ideas. Michalski and Euler begin their chapter commenting on the fact that sibling researchers rarely mention evolutionary studies of sibling relationships. Some scientists may be ignoring work based on the framework because they do not agree with the perspective. However, I suspect that many researchers are simply not aware of the latest evolutionary studies of family dynamics. I would like to add that evolutionary psychologists do not always cite work by sibling researchers from other theoretical perspectives too. For instance, Michalski and Euler discuss the importance of examining links between genetic relatedness and sibling relationship quality. However, they do not review studies that have tested differences in sibling warmth, cooperation, conflict, and competition using twin, adoption, and stepfamily designs (e.g., Reiss, Neiderhiser, Hetherington, & Plomin, 2000; Segal & Hershberger, 1999). How do we promote great intellectual collaboration between evolutionary psychologists and other researchers? Here, I do have an answer. We can start by reading Salmon and Shakelford's book and coming to the symposium. The scientists will present compelling, and perhaps controversial, hypotheses about why we act the way we do as siblings, partners, and parents.

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An Evolutionary Psychology of The Family

by Catherine Salmon, *Psychology Department, University of Redlands*

Family relationships are the foundation of human lives. Children are dependent on their families for food, shelter, and for helping them learn about the social and physical world in which they live. As adults, a majority of individuals step out of the family circle to form a family of their own despite maintaining strong ties to their natal kin. Family relationships contribute greatly to emotional health and social success. They are, often at the same time, a source of great joy and great pain. Family can be our strongest allies and our most determined opponents. *Family Relationships: An Evolutionary Perspective* attempts to address the reasons behind people's familial behavior and how a greater understanding of what drives our interactions with kin can help us in our own lives, to better understand our own behavior and that of our family members.

Evolutionary Psychology

In the early 20th century, many researchers interested in the study of human behavior embraced Darwinism. However, in the past 75 years the study of human behavior has had less and less contact with biology. In psychology, neo-behaviorism, social learning theory, cognitive theory, modern psychoanalysis, and a variety of post-modernist explanations have come to dominate the thinking of many academics. It is perhaps time for a return to a consideration of our ancestral history and the forces that shaped not only our physical bodies but also our mental structures. For a discussion of basic theory in natural and kin selection as applied to humans, please see the first chapter in *Family Relationships* or any text in evolutionary psychology.

Kinship

For a long time, kinship has been central to anthropological analyses of social behavior, and one might have assumed much the same role in psychology. And a focus on the family has been important in such areas as developmental psychology, whereas it has been notable for its absence in other areas, such as, for the most part, social psychology (see Daly, Salmon, & Wilson, 1997, for a discussion, and see Burnstein, Crandall, & Kitayama, 1994, for an example of evolutionarily informed social psychological research).

Catherine Salmon

While psychologists in some fields (such as Family Studies, Developmental, and Counseling) appreciate the importance of understanding familial relationships, most have suffered by not attending to the qualitatively distinct types of close relationships found within the familial universe. Family psychology is relationship-specific in that humans have evolved specialized mechanisms for processing information and motivating behavior that deal with the particular demands of being a mate, father, mother, sibling, child, or grandparent. An evolutionary perspective on the family provides insight into our behavior in a way no other perspective provides.

Relationship-Specific Adaptations

Family is not just one relationship. The challenges that have faced human mothers, for example, are different from those confronting fathers or offspring or siblings. Unique challenges are entailed with motherhood, fatherhood, grandparenthood, sibship, and mateship (where individuals are not related genetically but have a shared genetic interest in mutual children).

From a biological standpoint, our children are all important. They are our genetic passport into the future. So one might, at first glance, argue that parents would never come into conflict with their children and that they would give up everything for the well-being of their offspring.

And sometimes parents do just that, giving their time and resources to best prepare their children to be successful and produce their grandchildren. Other times, they risk their own lives to protect their children.

But conflicts do occur for a variety of reasons, a primary one being that the best interests of parents and the best interests of any particular child may not exactly coincide. From the parental perspective, each of their children is equally related to them by 0.5 (i.e., they share 50% of their genes, on average). But among a sibship, each child is related to their sibling by 0.5 but to themselves by 1.0 (the special case of identical twins, siblings related by 1.0 has been well documented by Nancy Segal). As a result, children might be expected to care more about themselves and their own well-being than about their siblings. Parents, on the other hand, might be expected to care equally about their children and divide investments in them accordingly. Differences between siblings over the allocation of parental resources are a major source of parent-offspring conflict. Who has not heard (or heard stories about) children accusing a parent of loving another child more than them or treating them better? This often spills into conflict between the siblings, either verbal or physical. And yet the early stages of parent –offspring conflict are set and played out even before birth.

Family is not just one relationship. The challenges that have faced human mothers, for example, are different from those confronting fathers or offspring or siblings.

Motherhood

Of all mammalian relationships, the most intimate is that between mother and offspring. It is also a relationship entailing a large number of special purpose anatomical, physiological, and psychological mechanisms (Hrdy, 2000). However, the tasks of motherhood are more intricate than the demands of conception, gestation, and nursing would suggest. Since not all offspring are equally capable of converting parental care into the long-term survival of parental genes, intense selection for subtle discriminations in the allocation of maternal effort has occurred. As a result, the evolved motivational mechanisms directing maternal investment decisions are influenced by variation in attributes of the offspring, of the material and social situation, and of the mother herself (Daly & Wilson, 1995).

Allocation of maternal investment can also be influenced by other individuals, especially offspring themselves. Parent-offspring conflict (Trivers, 1974) is common among sexually reproducing species due to the genetic asymmetries in family relationships. A mother is equally related genetically to any two of her offspring, but each of those offspring is more closely related to themselves than to their sibling (unless they are identical twins). As a result, mother and offspring value the relative fitness of offspring and the division of maternal resources somewhat differently. This conflict over the distribution of maternal investment provides an explanation for the puzzling aspects of certain mother-offspring interactions, including weaning conflict (Trivers, 1974) and the presence of substances of fetal origin in the blood of pregnant women (sometimes at levels which can put the mother at risk), such as placental lactogen which up-regulates the fetus's access to maternal glucose stores, which can result in gestational diabetes (Haig, 1993).

The special nature of the maternal relationship has been of interest to many researchers attending to family psychology. But attention has rarely been focused on the sources of variability in maternal feeling and behavior, perhaps due to being unfamiliar with an evolutionary framework that can make sense of such variability (Daly & Wilson, 1988). When attention has been paid to maternal feels and behavior, it has concentrated mainly on the impact of maternal behavior on the developing child (Howes, Matheson, & Hamilton, 1994) as well as maternal style as a personal-

ity trait (Belsky, Fish, & Isabella, 1991), rather than on maternal behaviors as adaptively contingent responses (however, see Belsky, 2000, and Bjorklund & Pellegrini, 2002, for examples of evolutionary developmental psychology).

Fatherhood

While it is apparent that there are many commonalities between paternal and maternal solicitude, there are also significant differences. Discriminative parental solicitude evolved in both mothers and fathers to allocate investment adaptively in response to cues of the expected impact of parental resources on any offspring's future success. As a result, both parents have been selected to assess offspring quality and need and both father and mother have been selected to attend to available cues that the offspring is the parent's own. For mammalian females, these cues are clear. If you gave birth to it, it's yours. Human males, due to internal fertilization and concealed ovulation, can never be certain of paternity. Fathers must rely on cues of their partner's probable fidelity, or the offspring's phenotypic resemblance to his relatives or to himself. This would suggest that levels of paternal affection will be influenced by perceptions of resemblance. Consistent with this prediction, people pay more attention to how much an infant resembles their father than their mother, and mothers and their kin actively draw attention to any hint of paternal resemblance (Daly & Wilson, 1982; Regalski & Gaulin, 1993).

Sibship

Our understanding of the dynamics between siblings also can also benefit from taking an evolutionary perspective (Mock & Parker, 1996). Sisterhood was integral to Hamilton's (1964) investigation of the evolution of sociality and altruism in haplodiploid insects. But if relatedness makes siblings valued social allies, it also turns them into competitors, especially for limited parental resources. The resulting sibling relationships are often characterized by ambivalence. Sulloway has suggested that the physical and social differences between siblings cause them to experience different family environments and to pursue disparate strategies for soliciting parental investment (Sulloway, 1999). Such strategies may impact on their relationships with those outside the family as well.

Grandparenthood

Do we have adaptations designed specifically for the demands of grandparenthood? It is well-known that in a majority of cultures postmenopausal women play a substantial role in the welfare of their grandchildren (Lancaster & King, 1985; Sears, Mace, & McGregor, 2000). Knowing this, it is not unreasonable to suppose that mental processes designed to provide for the adaptive allocation of grandparental investment could have evolved though natural selection (Hawkes, O'Connell, Blurton Jones, Alvarez, & Charnov, 1998; Smith, 1988). Recognizing that if paternity certainty could influence paternal investment, it could also have an impact on grandparental investment, Euler and Weitzel (1996) asked adults to rate the degree of grandparental solicitude they received from each of their four grandparents. The results illustrated the importance of relatedness and paternity certainty. Maternal grandmothers showed the highest solicitude ratings, followed by maternal grandfathers, paternal grandmothers, and paternal grandfathers. A maternal grandmother has the greatest certainty of her grandchild being biologically related. A paternal grandfather, on the other hand, has two uncertain links: the grandchild might not be his son's child and his son might not be his own biological child (see also Michalski & Shackelford, 2005).

Conclusions

The research presented in *Family Relationships: An Evolutionary Perspective* is intended to illustrate many of the ways in which an evolutionary perspective on the family can add to our understanding of family dynamics. It may also help us, in some small way, to deal with the distinctive features of family relationships in our everyday lives. The majority of the joys and pains of family relationships have been with us since the beginning and our behavior today is, in part, the product of our evolutionary response to those pressures.

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Behavioral-Genetic Methods Illuminate Evolutionary-Based Analyses

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Nancy Segal

Twin and adoption methods have moved beyond the classic monozygotic (MZ) – dizygotic (DZ) twin comparison that Sir Francis Galton made famous in the late 1800s (Galton, 1875). During the last three or four decades, behavioral geneticists have utilized an array of twin, sibling and adoption designs to identify genetic and environmental influences underlying variation in human behavioral traits. Simultaneously, research directed at examining the evolutionary underpinnings of human behavior was underway, but in different laboratories. Efforts along these lines first emerged under the rubric of sociobiology, a perspective that engendered evolutionary psychology (Buss, 2004).

Behavioral genetics and evolutionary psychology differ in their central foci, offering a likely explanation for why these related disciplines have had fairly limited contact over the years. (Fortunately, this situation is beginning to change.) Specifically, behavioral genetics is concerned with variation within-species, while evolutionary psychology is concerned with variation across species. However, each has a great deal to gain from the other.

Evolutionary psychology offers behavioral genetics an insightful theoretical framework for identifying adaptive heritable variation (Mealey, 2001; Buss, 2004). Behavioral genetics offers evolutionary psychology a rich source of tools (e.g., twin, sibling and adoption designs) for assessing evolutionary-based hypotheses and questions concerning social relatedness and other behaviors. Descriptions of a sampling of these designs and their applications are provided below.

In classic twin analyses, each co-twin is the unit of analysis, providing scores and measures that investigators compare. Greater MZ than DZ twin resemblance demonstrates genetic influence on the trait under study. This is because MZ twins share 100% of their genes, while DZ twins share 50% of their genes, on average, by descent (Segal, 2000).

Genetic influence has been detected for most measured traits, including general intelligence, special mental abilities, extraversion, shyness, social attitudes (Plomin, DeFries, McClearn, & McGuffin, 2001), age at menarche (Segal & Stohs, 2007) and popularity (Burt, 2008). However, it is also possible to compare the social-interactional processes and outcomes expressed by MZ twins, relative to DZ twins and other dyads, making the pair the new unit of study. The extent to which partners' genotypic similarity or dissimilarity affects social exchanges falls within a subdiscipline of behavioral genetics, called social genetics.

Genetic influence has been detected for most measured traits, including general intelligence, special mental abilities, extraversion, shyness, social attitudes, age at menarche, and popularity.

John Paul Scott (1977, 1989) recognized the fruitfulness of a social-genetic approach in an elegant series of studies comparing cooperation and competition between, and within, different breeds of dog. (Scott's work is acknowledged in a Division 1 presentation by Donald Dewsbury at the 2008 APA convention.) Comparing the social relationship qualities of MZ and

DZ twins in this way offers a test of Hamilton's (1964) theory of inclusive fitness. Specifically, Hamilton reasoned that natural selection favors alleles prompting individuals to behave in ways that favor the transmission of those alleles.

Alleles predisposing individuals to favor others likely to carry copies of those alleles would offer an indirect means to transmit one's own genes into later generations. Therefore, cooperative behaviors should increase as the proportion of shared genes between the benefactor and recipient increases. In proposing this theory, Hamilton solved the puzzle of why individuals act altruistically toward others despite some cost in fitness to the self.

A number of studies and life histories using a twin-based approach have tested and confirmed Hamilton's predictions (see, for example, Segal, 1997; Loh & Elliott, 1998; Segal & Hershberger, 1999; Segal, 2002; Danby & Thorpe, 2006; Segal, 2007). Associations between genetic relatedness and social closeness have also been demonstrated by studies of MZ (MZA) and DZ (DZA) twins reared apart from birth and reunited in adulthood (Segal, Hershberger & Arad, 2003). Specifically, MZA twins indicated greater feelings of social closeness and familiarity toward their newly found co-twin than did DZA twins. Furthermore, the reunited twins felt closer to the co-twin whom they recently met than they did to the adoptive sibling with whom they were raised.

Natural selection favors alleles prompting individuals to behave in ways that favor the transmission of those alleles.

Such findings underline the idea that siblings' extent of shared contact does not necessarily predict social relationship quality. However, the search for proximal mechanisms underlying social closeness has been more elusive. In the reared apart twin study, few meaningful associations emerged between social closeness and similarity in various objectively measured traits (e.g., personality, attitudes and values). This suggests that subjective perceptions between people may be a more significant feature in the genesis and progress of their social relations. This idea was tested in a subsequent study using the twin-family design.

The twin-family design occurs naturally, when MZ and DZ twins marry and raise families. The children of MZ twins are genetic half-siblings because they have one genetically identical parent. Furthermore, each twin aunt and uncle becomes the "genetic mother" and "genetic father," respectively, to their nieces and nephews (their co-twins' children). In contrast, conventional family relationships are maintained when DZ twins marry and have children (Segal, 2000). Segal, Seghers, Marelich, Mechanic, and Castillo (2007) reported greater social closeness between MZ twin aunts and uncles toward their nieces and nephews, relative to DZ twin aunts and uncles. Three factors of significance emerged: perceived closeness, perceived similarity and comparative closeness, all of which were positively associated with genetic relatedness. Perceived similarity significantly mediated the relationship between zygosity and perceived and comparative closeness.

Twin designs can also be profitably combined with adoption studies. A new kinship known as virtual twins (VTs) has been defined and studied over the last several years (Segal & Hershberger, 2005; Segal, McGuire, Havlena, Gill, & Hershberger (2007). VTs are same-age unrelated siblings who uniquely approximate the rearing situation of twins. They are a more informative comparison with twins than are ordinary adoptive siblings because their age and time of entry into the family do not differ. Similarity between VTs provides a pure estimate of shared environmental influence on trait development, complementing what twins reared together and apart can reveal. VTs are also a welcome addition to evolutionary research on cooperative behavior.

In another search for mechanisms affecting social relatedness, Segal, McGuire, Havlena & Miller combined MZ twins, DZ twins and VTs in an analysis of *tacit coordination*. Tacit coordination, as defined by Schelling (1960), refers to situations

in which interactants cannot communicate, but need to synchronize or coordinate their activities so that both will benefit. It was predicted that MZ twins would show greater success on coordination tasks than DZ twins who, in turn, would show greater success than VTs.

Results from this study will be presented as part of a Division 1 Symposium, "Decision Making Through the Lens of Evolutionary Psychology," chaired by Dr. Sarah E. Hill.

In summer 2008, a special session was held at the *International Twin Congress*, in Ghent, Belgium, to honor the late esteemed twin investigator, Dr. David T. Lykken. The theme of that session was based on a comment that Lykken made himself in reference to his work: "It's [research] always better with twins." The value that twins can bring to studies in behavioral genetics, studies in evolutionary psychology and studies that span both perspectives appears incontrovertible.

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Decision-Making Evolving: Choice and Strategic Behavior Coordination Through the Lens of Evolutionary Psychology

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Sarah E. Hill

Nearly two decades ago, evolutionary psychology emerged as a promising new theoretical perspective on the study of human behavior. Evolutionary psychology synthesizes the fundamental principles of evolutionary biology with modern psychological theories, providing a powerful foundation from which to derive testable hypotheses about the design of the human mind. The overarching framework of evolutionary psychology has guided researchers to discover empirical phenomena previously unknown and has led to the development of new theories about entire domains of human functioning (e.g., mating, Buss, 1989; Buss & Schmitt, 1993; Daly & Wilson, 1988; kin detection, Lieberman, Tooby, & Cosmides, 2007; language, Pinker & Bloom 1990; social exchange, Cosmides & Tooby, 1992). The success of an evolutionary psychological framework as a meta-theory for uncovering new knowledge in psychology makes the prospect of its being highlighted as a theme for Division 1 programming at the 2008 Convention of the American Psychological Association one that is both exciting and whose time has come.

When evolutionary psychology first arrived on the research scene it was met with a mixed response. While some embraced its principles, applying them to provide new insight into their research hypotheses (e.g., Gazzaniga, 1999; Nesse, 2000; Pinker, 1999), others rejected it outright, denouncing the perspective as fatally flawed (e.g., Eagly & Wood, 1999; Panksepp & Panksepp, 2000; Wood & Eagly, 2002). Despite the continued objection of a small handful of opponents, in general researchers are increasingly welcoming evolutionary psychology's place in the enterprise of psychological science. As such, the field continues to witness tremendous growth both in numbers of practitioners and research questions addressed. What began as a small group of researchers exploring a relatively small number of topics has developed into a thriving area of research encompassing phenomena as wide-ranged as morality, personality, and law (e.g., Buss, 1996, Jones, 2005; Krebs, 2005; McCrea & John, 1992).

One area of evolutionary psychological research that has experienced tremendous growth in the last ten years has been inquiry into the decision-making structures and processes that guide human behavior. Researchers have recently used an evolutionary psychological perspective to make predictions about decision-making in domains as diverse as economics (Todd, 2001; Wang, 2001, 2002) and investing behavior (Burnham, 2005) to mating behavior (Hill & Buss, *in press*; Wilson & Daly, 2003) and cognitive biases when reasoning about the psychological states of romantic partners (Haselton & Buss, 2000). The upcoming panel to be held at the 2008 meeting of the APA—*Choice and Strategic Behavior Coordination through the Lens of Evolutionary Psychology*—was born out of a desire to spotlight innovative decision-making research being done by some new faces in the area of evolutionary psychology. The panelists will be presenting some of the latest research on human decision-making through a Darwinian lens. Some of the highlights of this research are detailed below.

Emerging research paradigms in evolutionary psychology and decision-making

Evolutionary psychology has provided new insight into decision-making in a wide range of research domains, including those traditionally explored from classic economic decision-making paradigms. Adaptive positional bias theory (Hill

& Buss, *submitted*) uses an evolutionary framework to make predictions about the role social competition plays in individuals' valuations of specific types of monetary and social outcomes. Dr. Sarah E. Hill will be presenting new research demonstrating that human decision-making mechanisms (a) selectively attend to information about relative position when reasoning about specific types of outcomes in domains that have historically impacted reproductive success and (b) adaptively bias decision-making in favor of outcomes that improve relative position, even at the expense of lowered absolute gains. This research ties together previously disparate findings regarding key features of human decision-making processes into one unified theoretical framework. Additionally, it yields novel predictions about how attending to information about relative position in these predicted domains can mitigate and sometimes reverse well-documented effects in human decision-making under uncertainty (Kahneman & Tversky, 1979) in addition to other heretofore undocumented features of human decision structures.

Principles of evolutionary psychology have also been applied to economic theories of decision-making to expand our understanding of romantic relationships. Until recently, evolutionary and social exchange models examining human mate preferences had recognized principles of economic theory (e.g., Kenrick, Groth, Trost, & Sadalla, 1993) but dismissed a key concept embedded within the decision-making process – necessities and luxuries (e.g., Varian, 1984). When budgets are high, a large portion of one's income can be allotted to the purchase of luxury items. In contrast, when budgets are low (or constrained), individuals tend to purchase only those items that are of greatest need. Research investigating human preferences often fails to constrain the decision process and, thus, participants are put in a position akin to spending imaginary lottery winnings. Outside of the laboratory, we are rarely afforded the opportunity to choose from an endless range of options. Dr. Norman P. Li has developed a ground-breaking paradigm that applies principles of economics to decisions made regarding romantic relationships (Li & Kenrick, 2006; Li, Bailey, Kenrick, & Linsenmeier, 2002). Participants were given low, medium, and high budgets of "mate dollars" to purchase characteristics pertaining to an ideal long-term mate. Evidence will be presented showing that both men's and women's preferences shift dramatically when operating from low (constrained) to high "mating budgets".

There is perhaps no research topic that better illustrates the usefulness of an evolutionary perspective on decision-making more than the emerging body of research demonstrating the important role played by the menstrual cycle in women's preferences and behaviors (e.g., Bullivant et al., 2004; Gangestad, Garver-Apgar, Simpson, & Cousins, 2007; Haselton & Gangestad, 2006; Penton-Voak, Perrett, & Castles, 1999). Many of the greatest reproductive fitness benefits women can gain in their lifetime are limited to the brief fertile window of the cycle when the probability of conception is highest. Using this logic, evolutionary psychologists have reasoned that women's mating psychology will be sensitive to fertility status, and that the approach of ovulation should shift women's social motives and behaviors in adaptive ways. Doctoral candidate Kristina Durante will present new research showing that the ovulatory cycle may contribute to day-by-day changes in women's motivations to appear attractive (e.g., Durante, Li, & Haselton, 2008; Haselton, Mortezaie, Pillsworth, Bleske-Rechek, & Frederick, 2007). Ms. Durante's research demonstrates that women exhibit ovulatory shifts in decisions regarding choice of dress, consumer purchases, and willingness to take risks when trying to appear more attractive. She suggests that shifts in motivation to appear attractive may reflect an increase in female-female competition near ovulation.

Kristina M. Durante

Continuing in a similar vein, pioneering new research has unveiled the relationship between hormone concentrations and behavioral expressions. Dr. James R. Roney uses discoveries about

nonhuman neuroendocrine mechanisms to generate testable hypotheses about the evolved design features of human social behavior. He has found that men, similar to other nonhuman males, show a suite of behavioral and hormonal responses to specific cues from potential mates (Roney, 2003; Roney, Mahler, & Maestripieri, 2003). His current research examines the hormonal correlates of mate attractiveness (Roney & Simmons, 2008). Dr. Roney will present research showing that ovarian hormones (e.g., estradiol) regulate women's attractiveness judgments of men and, more specifically, demonstrates that hormone concentrations in one sex are associated with attraction to hormonal cues of attractiveness in the opposite sex.

The upcoming panel will also highlight new research exploring sex differences in the decision-making strategies that shape men's and women's mating behaviors. Dr. Joshua M. Ackerman will present research that underscores the important role cooperative coalitions play in courtship behavior (Ackerman & Kenrick, in prep). Dr. Ackerman's findings reveal that men and women use cooperative coalitions in opposite ways to assist executing the mating strategy most advantageous to their sex. Women primarily use cooperative coalitions to assist in building romantic barriers, while men primarily use cooperative coalitions to assist in achieving romantic access. Additionally, people provide the exact opposite pattern of help to opposite-sex coalition partners from that provided to same-sex coalition partners, suggesting that assistance is adapted to recipient goals, rather than enacting sex-specific fixed action patterns. Cooperative courtship is revealed to be a commonly-used set of mating strategies by which people functionally tailor aid to meet both their own and their coalition partners' romantic relationship goals.

Evolutionary psychology has provided insight into decision-making in a wide range of research domains

Research examining the dynamics of cooperation has also taken an innovative and highly informative turn by combining evolutionary psychological and behavioral genetics perspectives using twin studies to yield novel insights into decision-making. Combining these methodologies provides insights into the degree to which relatedness modulates social decision-making. Dr. Nancy L. Segal will be presenting data from a twin-adoption study to test whether monozygotic (MZ) show greater success on tacit coordination than do dizygotic (DZ) twins or virtual twins (VTs, same-age unrelated sibs). Tacit coordination (Schelling, 1960) refers to situations in which interactants cannot communicate, but need to synchronize or coordinate their activities so that both will benefit. Given their greater relatedness (Hamilton, 1964) it was predicted that MZ twins would show greater success on coordination tasks than DZ twins who, in turn, would show greater success than VTs.

In sum, the creation of the symposium, *Choice and Strategic Behavior Coordination through the Lens of Evolutionary Psychology,* marks an exciting time in evolutionary psychology and in Division 1 of the APA. We look forward to the opportunity to contribute to the continued growth in the field and bring an informative perspective on the study of human behavior to the audience at the 2008 meeting of the APA.

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American Identity: The Redemptive Self

by Dan P. McAdams, PhD - Northwestern University

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for

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Had I not attended a conference in the Netherlands in the summer of 2000, I might never have written *The Redemptive Self: Stories Americans Live By* (McAdams, 2006). At the conference, I presented a paper reviewing 10 years of research that my students, colleagues, and I had conducted on *generativity*—what Erik Erikson (1963) long ago described as the adult's concern for and commitment to promoting the well-being of future generations. Drawing on quantitative results and qualitative interviews, I argued that generative men and women tend to tell a certain kind of story about their lives, a story that emphasizes the themes of suffering, redemption, and personal destiny. Having a story like this one, I argued, helps a person to be generative by sustaining hope in the face of adversity and perseverance for the long run.

At the end of the talk, my first question/comment came from a Dutch woman in the front row: "Professor McAdams, this is very interesting, but these life stories you describe, they seem so, well, *American*. We Europeans admire this kind of story, but it is not ours." I countered with some sort of lame response. But later I came to believe that the woman in the front row was largely right. There are caring, productive, and generative people in all societies. But might it be the case that each society holds out its own distinctive forms for what living a generative life should mean? If yes, then what do the life stories of highly generative *American* adults say about American identity? My current answer is my book.

What does it mean to be an American?

Social and behavioral scientists have long argued about the extent to which a particular type of American character or personality plays itself out on the world stage, expressed and sublimated in both the public and the private arenas of lived experience. Researchers, however, have never been very successful in identifying a set of discrete personality traits that distinguish clearly one national or cultural group from another. It is dubious to claim, therefore, that Americans are more aggressive, domineering, altruistic, friendly, boastful, honest, fun-loving, idealistic, cynical, or whatever, compared to citizens of other nations (McAdams & Pals, 2006; but for a contrary view, see McCrae et al., 2005). Psychologically speaking, American identity lies not in our personality traits, our behavior, our dispositions and complexes, or even our most deeply held political and religious values. It lies instead, if it lies anywhere, in our *stories*.

Here is a personal story—a biographical script of sorts—that many very productive and caring American adults see as their own: *In the beginning, I learn that I am blessed, even as others suffer. When I am still very young, I come to believe in a set of simple core values to guide me through a dangerous life terrain. As I move forward in life, many bad things come my way—sin, sickness, abuse, addiction, injustice, poverty, stagnation. But bad things often lead to good outcomes—my suffering is redeemed. Redemption comes to me in the form of atonement, recovery, emancipation, enlightenment, upward social mobility, and/or the actualization of my good inner self. As the plot unfolds, I continue to grow and progress. I bear fruit; I give back; I offer a unique contribution. I will make a happy ending, even in a threatening world.*

I call this story *the redemptive self*. The redemptive self is a particular kind of *life story* told, lived, and imagined by many highly productive and caring American adults, men and women who score high on quantitative measures of generativity. But even American adults who are not especially generative know this story, and like the woman in the front row, they admire it. The redemptive self provides Americans of many different persuasions with a common language or format for making sense of an individual life. Even when we resist seeing our lives as conforming to this pattern, we are deeply (often unconsciously) cognizant of the pattern, and we must ultimate-

ly come to terms with it.

As a cultural narrative, the redemptive self resonates with some of the most cherished texts and ideas in America's cultural heritage—from the spiritual autobiographies written by 17th-century Puritans to the 19th-century African-American slave narratives; from Benjamin Franklin's autobiography to the latest self-help manuals, business guides, Hollywood movies, *People* magazine, best-selling fiction, prime-time entertainment, and episodes of the Oprah Winfrey Show. As a psychological narrative, the redemptive self is a story that functions to support or reinforce some of the most well-meaning efforts of caring, productive, and principled American adults to make a positive difference in the world. At the same time, this self-defining story implicitly reconfigures and plays out contested cultural themes about what it means to be an American—like the idea that we are a "chosen people," destined to live free and spread freedom, even if the world does not wish to go along. Mainly for better but sometimes for worse, many Americans cannot help but apprehend their lives as variations on an autobiographical script that is as American as apple pie, the Super Bowl, and manifest destiny.

Alexis de Tocqueville

Who Tells This Story?

A life story is an internalized and evolving narrative of the self that provides a life with some degree of coherence and purpose. It is less an objective rendering of what "really" happened in life and more a *personal myth,* part fact and part fiction, selected and edited to function as a narrative of personal identity (McAdams, 2008; McLean, Pasupathi, & Pals, 2007; Singer, 2005). Beginning in the adolescent years, most people start to put their lives together into a story by reconstructing the past and imagining the future as an ongoing narrative that depicts who they were, are, and will be—and how the past, present, and future are meaningfully linked (Habermas & Bluck, 2000; McAdams, 1985). As adults, we walk around with these stories inside us, frequently drawing upon them, or parts of them, to explain ourselves to others, to guide our behavior and shape our experience, and to inform the decisions we make about our lives. We continue to work on our stories, unconsciously editing and tweaking, sometimes radically revising, as we move through the adult life course. Our stories spell out our identities. But they also speak to and for *culture*. Life stories sometimes say as much about the culture wherein they are told as they do about the teller of the story.

I have studied life stories for 25 years, and for much of that time, I have focused attention on the life stories told by especially generative adults. According to Erikson (1963), the most obvious and natural expression of generativity is the care that parents provide for their children. But Erikson maintained that generativity can be expressed in many other ways, too, including teaching, mentoring, leadership, and various other life commitments that involve leaving a positive legacy of the self for the future. Generative adults seek to give something back to society. They pass on valued traditions, and they create new ones. They work to make the world a better place, not just for themselves but for future generations, as well. A considerable body of research shows that adults who score high on measures of generativity tend to express more warmth and discipline in their parenting practices, be more actively involved in their children's schooling, have closer family ties and broader networks of friendships, do more volunteer work, vote more often and engage in civic activities, and show higher levels of psychological health and well-being, compared to less generative adults (e.g., de St. Aubin, McAdams, & Kim, 2004; McAdams, 2001; McAdams & de St. Aubin, 1998; Peterson, 2006). As I argued in my talk in the Netherlands, highly generative American adults, furthermore, are statistically much more likely than their less generative counterparts to tell life stories that sound like the redemptive self.

How Does the Story Begin?

Visiting the United States in the 1830s, Alexis de Tocqueville observed that Americans believe themselves to be "the only religious, enlightened, and free people. They have an immensely high opinion of themselves and are not far from believing that they form a species apart from the rest of the human race." Tocqueville realized that the Americans' sense of special destiny lay partly in their celebration of the individual self. "One's self I sing, a simple separate person," proclaimed Walt Whitman. And, "Is not a man better than a town?" asked Ralph Waldo Emerson, in *Self-Reliance*. (The fact that a town is made up of individual men—and women—seems strangely absent from Emerson's thinking.) Not only are we the chosen people, Emerson suggested, but each individual man (or woman) is *chosen for a special destiny*. That individual destiny is inscribed within an inner self that is always true and good. "Trust thyself: every heart vibrates to that iron string,"

Emerson wrote. In Emerson's uniquely American brand of romantic individualism, the good and productive life is the heroic actualization of the inner self. To live freely and truthfully is to manifest one's inner destiny.

Flash forward 150 years or so. In life-narrative interviews, highly generative American adults tend to begin the stories of their own lives in the same way. Of course, Whitman and Emerson are not the protagonists in these psychological narratives, and rarely do the authors employ lofty religious or political rhetoric. But they speak a language of chosen-ness and manifest destiny, albeit in contemporary and personal ways. To a significantly greater extent than their less generative peers, highly generative American adults at midlife will often identify an incident from childhood as symbolic of their enhanced status, as if to suggest that they have known that they were special, that they were chosen, for a very long time. Perhaps mom liked me the best. Maybe it was the wonderful second-grade teacher I had, or a loving aunt, or my special talents in music, or the responsibilities I assumed when my father died, or the fact that we were the only African-American family on the street, which provided me with special challenges and opportunities.

In stories like these, the protagonist is chosen early on for a special destiny. At the same time, he or she shows an early awareness that the world is not fair and that many other people suffer greatly. One highly generative adult remembers how the children on her street used to tease a retarded boy. Another recalls how the church bus was re-routed so that it would not have to pick up black kids on Sunday morning. Yet another saw how his friends were mistreated or neglected by their parents. And yet another identifies the death of John F. Kennedy as the most memorable event of her childhood. My research shows that highly generative adults are *five times more likely* than less generative adults to import spontaneously into their life-narrative accounts a discrete childhood incident in which they felt empathy for the suffering of another or witnessed an injustice experienced by another person. It is as if these narrators want their listeners to know this about the beginnings of their stories: I was blessed, but others suffered; or put differently, I was chosen for a special destiny in a dangerous world.

The redemptive self is a particular kind of life story told, lived, and imagined by many highly productive and caring American adults, men and women who score high on quantitative measures of generativity.

My Good Inner Self and the Power of Moral Clarity

From self-help gurus to scientific researchers, American experts on psychological development have long worked within the same narrative tradition that has given us the redemptive self. From the inspirational tracts put out by pop psychologists to the latest scientific theorizing about mother-infant attachment, American experts maintain that the first goal of healthy psychological development is to establish a good and coherent sense of self in a threatening environment. This achievement typically depends on a trusting relationship with an "attachment figure," a "mirroring object," or some other caring person who protects the infant from danger and nurtures the realization of the infant's good inner potential. Theorists simply assume that (1) infants need to establish distinctive selves, (2) those selves are always good and true, and (3) environments are filled with dangers that threaten to undermine the good inner selves with which we are all blessed. While these assumptions may be useful in promoting healthy development, they are not the objective givens or universal developmental rules that many experts claim. Instead, they are narrative conventions—culturally-conditioned ways of telling a good story about human development. American psychologists rarely think to tell other kinds of stories.

What other kinds of stories? Well, how about this: *Infants are conflicted at their very core, and as they grow up they develop greater and greater ambivalence about the world and their place in it.* That's vintage Freud, by the way. Americans have always preferred Emerson to Freud, although they may not realize it. Throughout the 20th century, American psychoanalysts sanitized and simplified Freud in order to sell him to the optimistic American consumer. Freud's supremely tragic view of human life is difficult to square with the life experiences that most middle-class Americans know, or aspire to know. And it cannot be squared with America's cultural heritage. In his cultural history of psychotherapy, Cushman

(1995) argues that Americans' prevailing understanding of their inner self—the "human interior"—mirrors their sense of geography. Like the heartland of North America, the inner self is large and good, and our manifest destiny is to "liberate" it—to free up and actualize its vast potential.

The good is inside us. But the outside world is bad, and in need of redemption. In the life stories of highly generative adults, the contrast between the protagonist's early blessing and the misfortune of others in the outside environment sets up a moral imperative. If I am especially favored in a difficult world, then it becomes my calling to exert some positive impact on that world. I need to use my gifts in a positive way. I need to give something back. The sense of individual mission that runs through the life stories of highly generative American adults is often linked to life principles consolidated in the teen-aged years, be the formative influences the Baptist church, Ayn Rand, Maya Angelou, or *Tuesdays with Morrie*. As young people, protagonists dedicate themselves to simple moral principles like the Golden Rule. Often rooted in a religious tradition, these principles establish an ideological setting for the life story. As the plot unfolds over time, many things change, but the setting remains relatively stable.

The protagonists in these stories are not the tormented souls or ironic drifters celebrated by European existentialist writers and postmodern literary critics. They don't wake up in the middle of the night wondering what the meaning of life is. They know what is right, more or less, and they strive to put their life principles into action. There is a decided lack of ambivalence about moral and ethical values in the life stories of highly generative American adults, be they born-again Christians or card-carrying members of the ACLU. Instead, we witness clear-eyed, no-nonsense protagonists who have too many things to do and too little time to waste on a searching re-examination of what is good and true, who is God, and what they believe in their hearts to be right. From Ben Franklin to Michael Jordan, prototypical American heroes and heroines are more pragmatic than reflective. They are too restless for prolonged philosophical debate. They brush aside nagging doubts, ignore complexities. They attach themselves to a few simple principles in life, and then they move forward with vigor and confidence.

We walk around with these stories inside us, frequently drawing upon them…to explain ourselves to others, to guide our behavior and shape our experience, and to inform the decisions we make about our lives.

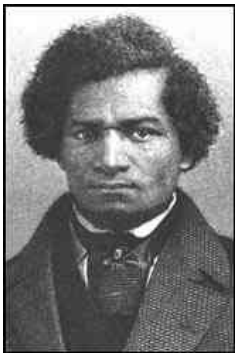
How Does the Plot Develop? The Languages of Redemption

In a famous quote, F. Scott Fitzgerald once said that there are no second acts in American lives. But Fitzgerald was certainly wrong, for Americans are as adept as any people in the world at re-inventing themselves through stories of redemption. From rags-to-riches success stories to 12-step recovery programs, Americans enact second, third, and even more acts in their self-defining life dramas. The burgeoning popular literature on self-help offers a cornucopia of redemption tales, as do television talk shows and human-interest stories in the media. Politicians celebrate their own redemptive journeys: Ronald Reagan rose from a dysfunctional family; Bill Clinton (nicknamed "The Comeback Kid") recovered from childhood poverty (as well as many self-inflicted wounds); George W. Bush turned his life around in his early 40s, after years of drifting and drinking; John Edwards started out "the son of a millworker," but he rose from there. Surveying American novels and short stories from recent years, the *New York Times* book reviewer, Michiko Kakutani (2001), wrote, "There is no public narrative more potent today—or throughout American history—than the one about redemption" (p. D1).

Highly generative American adults develop the plots of their redemptive tales in many different ways. Some employ a religious language in narrating their own pilgrimage from sin and shame to personal atonement. Others speak a language of liberation: In some sense, they were once enslaved or imprisoned, but now they have been set free. Still others talk of a move from ignorance to wisdom, illness to recovery, or hypocrisy and self-abnegation to the full expression of the good inner self. While the languages they use are contemporary, the plot's redemptive features and its emphasis on the protagonist's forward progress are staples of a distinctively American narrative heritage. In 1835, Tocqueville wrote that Americans seemed to be true believers in "the Idea of the Infinite Perfectibility of Man." In 1857, Abraham Lincoln wrote, "I had thought the Dec-

laration [of Independence] contemplated the progressive improvement of all men everywhere."

From Benjamin Franklin to Senator John Edwards, the rags-to-riches success story—sometimes called "the American Dream—has enjoyed a privileged status in the anthology of American myths. As the Industrial Revolution transformed American society in the 19th and early 20th centuries, stories of success and upward mobility moved from the farmers and tradesmen of Franklin's day to the hardscrabble work settings produced by capitalist industry. In this harsh environment of robber barons and union busting, many Americans still embraced stories of economic uplift and the triumph of the little man. Redemptive narratives chronicling the move from poverty to economic well-being were especially popular among the nation's immigrants in the early years of the 20th century, as epitomized in the inspirational tales written by Horatio Alger. Today, stories like these continue to undergird the aspirations of immigrants and many others who hope to secure a piece of the American Dream.



Frederick Douglass

Another set of influential narratives from 19th-century America document a more dramatic redemptive move, from slavery to freedom. As many as 60,000 black slaves may have escaped to freedom across the Ohio River and the Mason-Dixon line before the onset of the American Civil War. Under the sponsorship of Northern abolitionists, a number of escaped slaves wrote vivid, autobiographical accounts of their years in captivity, the most famous of which is the account written by Frederick Douglass. Magnifying many of the themes that appear in the redemptive self, these powerful stories typically feature a hero who, despite his enslavement, enjoys a favored status in childhood while being exposed from the beginning to the horrific suffering of others. (Many slaves identified with the Old Testament Hebrews as God's chosen people in an unredeemed world.) The story depicts cruel masters, duplicitous overseers, brutal beatings, and slave auctions that ripped black families apart. But the protagonist perseveres and overcomes, develops and matures, and enjoys the benefits of life-saving turning points, like learning to read. The story chronicles how the prospect of freedom evolves gradually in the protagonist's mind, beginning as a fantasy and ending in a detailed plan that typically involves deceptive schemes and life-and-death risks. The narrative ends with the protagonist's arrival in the free states, his or her warm reception from Quakers or other religious and political figures, and the assumption of a new last name to signify a new social identity as a free woman or man.

The slave narratives served a prime moral and political purpose—to educate whites about the evils of America's peculiar institution and to rally the readership around the cause of abolitionism. But these texts also served to initiate what the Harvard scholar Henry Louis Gates, Jr. and others have identified as a distinctive African-American literary tradition. The slave narratives expressed images and themes that have been incorporated and reworked ever since in black autobiography, fiction, music, drama, and the cinema. The redemptive move from bondage to freedom is a dominant motif in such celebrated black autobiographies as Richard Wright's *Black Boy,* Maya Angelou's *I Know Why the Caged Bird Sings,* and *The Autobiography of Malcolm X*. While the protagonists of these stories are not literally enslaved, their growth and development over time involve many of the same social and psychological dynamics that Frederick Douglass himself knew, and worked through. Indeed, the redemptive move described by especially generative African-American adults today is often visualized as *vertical*, as Booker T. Washington suggested in his autobiography, *Up From Slavery*—up from the plantation to the town, up from the South to the North, out from under oppression's thumb and struggling to move up in a society that still wants to hold you down. The prospect of moving up and out, breaking out of the cage to fly free still resonates for many Americans, both black and white, affirming what Barack Obama has famously called "the audacity of hope."

Perhaps the most influential spokesperson for redemption in America for the past decade or so has been Oprah Winfrey. Through her television show, magazine, and philanthropy, Oprah urges people to take charge of their lives, to overcome their obstacles, to pursue their dreams, and to think about ways to give back to society. Encouraging adults to tell and revise their own stories, Oprah tells and sells her own. Born dirt poor in Kosciusko, Mississippi, the African-American heroine survives sexual abuse as a child to become first a radio reporter, then a news anchor, a talk-show host, movie-maker, publishing czar, and finally an international celebrity and philanthropist. Like many highly generative American adults, Oprah believes she has been chosen to make a difference in the world. She urges people to resist societal norms and obey their good, inner selves. Her redemptive life journey uses the languages of recovery and upward mobility. In a recent interview, Oprah

says:"I grew up a little Negro child who felt so unloved and so isolated—the emotion I felt most as a child was loneliness—and now the exact opposite has occurred for me in adulthood." As evidenced in her own recovery from sexual abuse, Oprah argues that people can survive traumatic experiences and come out even stronger. "Your holiest moments, most sacred moments, are often the ones that are the most painful."

What's Wrong with this Story?

The redemptive self is the mom-and-apple-pie of American narrative identity. Believing you are one of the chosen people in an unredeemed world, espousing clear moral values that guide your action from beginning to end, affirming the power of human redemption in the face of inevitable suffering, seeing your life as a progressive saga of growth and self-fulfillment—these are substantial strengths in modern life. As parents, teachers, mentors, leaders, activists, worshippers, and productive American citizens, highly generative American adults find in their own redemptive life narratives psychological resources to sustain their commitments to family and society.

From self-help gurus to scientific researchers, American experts on psychological development have long worked within the same narrative tradition that has given us the redemptive self.

Yet, no story is perfect. For all its psychological and moral appeal, the redemptive self may reflect important shortcomings and blind spots in Americans' understandings of themselves and the world. Is it not arrogant, for example, to imagine one's life as the full manifestation of an inner destiny? And is it not presumptuous to expect deliverance from all suffering? Might it be an affront to those who have suffered the greatest calamities and heartaches to expect, even to suggest, that things will work out nice and happy in the end? While redemptive life narratives affirm hope and human progress, we must also face up to the potential dark side of American redemption.

To the ambivalent among us, to the hand-wringers and nay-sayers, to the skeptics and political realists, to the folks who wake up in the middle of the night and wonder if they are indeed doing the right thing, the simple sincerity and quiet confidence of some highly generative American adults can be damn annoying. True belief can look like arrogance (or ignorance). Sustained commitment can seem rigid, narrow, or even blind. And how do we feel when our truths are different from theirs? When the commitments we make conflict with the commitments they make? There is no research evidence to suggest that highly generative American adults are any more narrow-minded or dogmatic than individuals low in generativity. But the *life stories* that highly generative adults live by portray a main character who is chosen for goodness, who believes steadfastly in a deep inner truth, and who moves forward in life with the confidence that comes from feeling distinguished and exceptional. The *story* may have a kind of arrogance about it, even if the *person* living it seems humble and nice.

From the shameless expansionism of the 19th century to the current war in Iraq, cultural observers have taken Americans to task for their arrogant exceptionalism and their deeply held belief that they are the chosen people. American exceptionalism sometimes takes the form of a blithe and naïve isolationism, as Americans go their merry way without paying much attention to what the rest of the world is doing. But American exceptionalism can also take the form of psychological, cultural, and political imperialism, especially when it is buttressed by power: I am blessed with the truth; I will share the truth with you; I will liberate you to see the truth the way I see it; you will follow my path, which is the right path; you will follow my path even if you do not want to.

Moreover, there may be a kind of psychological tyranny in the never-ending expectation in American life that bad things will and should be redeemed. When people tell us their problems, we anticipate that they will also tell us how they have solved them. And when they do not tell us that, we may want to help them find the happy ending we all want. We value and expect improvement, growth, recovery, upward mobility, and the like. We listen intently for the redemptive message in a life narration. When we do not hear it, we are troubled or confused. How can that be? Surely, *something good* must have come out of that!

Well, maybe not.

Many psychotherapists help their patients develop more redemptive understandings of their lives, in order to promote psychological well-being and meaningful participation in society. For the most part, this is good. But a few mental health experts have recently argued that the

emphasis on redemption may be too strong, especially among American counselors and therapists. Some European and Israeli psychologists write that many people's lives would be enriched if they were more aware of the narrative power of *tragedy* (e.g., Alon & Omer, 2004). In classic Greek or Shakespearean tragedy, the hero suffers a fate that he or she cannot avoid and for which he or she is not fully responsible. Oedipus cannot avoid the fate of killing his father and sleeping with his mother, no matter how hard he tries. The tragic hero learns that suffering is an essential part of life, even when the suffering has no ultimate meaning, benefit, or human cause. Suffering is to be endured, but not necessarily redeemed. Human beings are moral agents, to be sure, but not every action or event makes sense in a moral framework. Sometimes we are just lucky, or unlucky. Fate, happenstance, blind chance, serendipity—tragedy teaches us that lives sometimes turn on these capricious factors.

While redemptive life narratives affirm hope and human progress, we must also face up to the potential dark side of American redemption.

Tragedy also teaches us other lessons that serve as a psychologically useful counterpoint to the redemptive self. For example, tragedy calls into question the belief that any particular individual is blessed with an innocent and good inner self that is destined to achieve good things. Tragedy gives fuller expression to the ambivalence and multiplicity of human lives than do many other narrative forms. It looks with skepticism upon the kind of ideological certitude celebrated in the redemptive self. Surely, it is good for people to have strong moral principles. But many would say that the principles need to be flexible, and need to change as the world changes. The tragic hero anguishes over the moral complexities in the world. He or she does not settle for simple truths and pat answers.

Finally, and perhaps most importantly, tragedy opens people up to each other and sometimes brings them closer together. People often identify moments of greatest intimacy in their lives as those times when they shared with others deep sadness and pain. From soldiers to survivors to sorority sisters, people often report that shared suffering bonds them to others in a powerful and enduring way. It may also be true that others are easier to like and to know when they admit to their own vulnerabilities and flaws. Tragedy suggests that we are all flawed, and it rejects the notion that selves can ever be perfected. The redemptive self can sometimes seem impenetrable and aloof in its deep commitment to improving the self and the world. The person whose story celebrates his or her unique giftedness, moral clarity, and redemptive quest to make over the world may evoke our admiration, but he or she may also scare us off a little bit, or put us off, or make us feel inferior.

Conclusion

We are the stories we live by. In America, one of the most powerful stories for the construction of adult identity is the redemptive self. It is a very good story—a story that celebrates the power of human agency to make the world a better place, while sustaining commitment to family and community. Affirmed most clearly in the internalized life stories of especially generative American adults, the redemptive self plays out images, themes, characters, plots, and scenes that resonate with some of the most cherished and contested narratives in the American heritage, ranging from the Puritans to Oprah.

The shortcomings and the limitations of the redemptive self reflect cultural concerns that have been at the heart of American national identity for the past two centuries. Tocqueville warned of the potential dangers of unbridled American individualism and self-righteousness. Violence in the name of redemption is as old as the republic itself, as witnessed in expansionism and imperialism in the name of manifest destiny and other purportedly lofty principles. Americans are known for their pragmatic, can-do optimistic spirit. But this attitude about life finds it difficult to allow for the possibility that life's deepest meanings may be found in tragedy as well as redemption.

The redemptive self reflects cultural and psychological tensions with which Americans have struggled for a very long time. And we continue to struggle with them. But we should not forget that there is no good story that is free of struggle and tension. There is no perfect life narrative, just as there is no perfect life, or perfect society. Every narrative identity is like a double-edged sword, cutting both ways. The redemptive self affirms a generative commitment to society, but it opens itself up to the dangers of psychological and cultural exceptionalism. The redemptive self celebrates the power of human resilience and growth, but it may also fall prey to arrogance and self-righteousness. The

redemptive self sustains hope, but blind hope is naïve. Knowing who we are as Americans should involve knowing the strengths and the limitations of the stories we live by, and knowing that others may live by stories very different from our own.

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The Redemptive Self:
Stories Americans Live By

Dan P. McAdams

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Division ONE

Men Are From Earth, Women Are From Earth:

The Gender Similarities Hypothesis

by Janet Shibley Hyde, PhD - Department of Psychology, University of Wisconsin

2006 George A. Miller Award for an Outstanding Recent Article in General Psychology

for

The Gender Similarities Hypothesis, *American Psychologist* (2005) *60*, **581-592**

The mass media are saturated with reports of massive psychological differences between males and females. Two prominent examples are John Gray's book *Men Are From Mars, Women Are From Venus* (1992), which has sold over 30 million copies; and Deborah Tannen's (1991) *You Just Don't Understand: Women and Men in Conversation*. Both are characterized by the *differences model*, which is based on a belief that men and women, boys and girls, are fundamentally different on important psychological dimensions. I propose a very different view, the *gender similarities hypothesis* (Hyde, 2005).

The gender similarities hypothesis holds that males and females are similar on most, but not all, psychological variables. That is, men and women, as well as boys and girls, are more alike than they are different. Translated into effect sizes, the gender similarities hypothesis argues that most gender differences are in the close to zero (d # 0.10) or small range (0.11 # d # 0.35), and few are larger than that.

The gender similarities hypothesis arose from my review of all available meta-analyses of psychological gender differences at the time, each of which aggregated the findings from dozens – sometimes hundreds – of studies (Hyde, 2005). *Meta-analysis* is a quantitative method for combining the results of numerous studies on the same question. For each study, the meta-analyst computes Cohen's (1988) d statistic as a measure of the magnitude and direction of the gender difference in that study, $d = (M_M - M_F) / s_w$, where M_M = the mean score for males, M_F = the mean score for females, and s_w = the pooled within-gender standard deviation. The d statistic, then, measures the magnitude of the gender difference in standardized units. The meta-analyst then computes a weighted average of d values across all studies to determine the magnitude of the gender difference. According to Cohen's (1988) guidelines, which we also use in power computations, a d value of 0.20 is small, 0.50 is moderate, and 0.80 is large.

I reviewed and synthesized all meta-analyses of psychological gender differences that were available at the time, a total of 46 meta-analyses which yielded 124 effect sizes for gender differences. The meta-analyses addressed the question of gender differences in a wide variety of domains, including cognitive abilities (e.g., verbal, mathematical, and spatial abilities), communication (e.g., interruptions, affiliative speech, assertive speech, self-disclosure, smiling), social and personality variables (e.g., aggression, helping behavior, sexual behavior, leadership), psychological well-being (e.g., self-esteem, body esteem, depression, life satisfaction), motor behaviors (e.g., grip strength, throwing distance, activity level), and miscellaneous outcomes (e.g., moral reasoning).

Janet Shibley Hyde

The distribution of the effect sizes is shown in Table 1. Overall, 30% of the effect sizes were in the close-to-zero range and an additional 48% were in the small range, for a total of 78% effect sizes that were close to zero or small. These findings provide powerful support for the gender similarities hypothesis. Stated another way, for most psychological variables, within-gender variability is considerably larger than between-gender variability.

To give readers a somewhat more detailed view, I will review in more detail three meta-analyses from my lab that address some core questions about gender differences.

Gender and Mathematics Performance

Traditionally, psychologists and the lay public have believed that there are gender differences in verbal, mathematical, and spatial abilities, with females scoring higher on verbal measures and males scoring higher on mathematical and spatial tests. In a 1990 meta-analysis, we

located all relevant studies to assess the claim about gender differences in mathematics performance (Hyde, Fennema, & Lamon, 1990). We located 100 studies with relevant data, representing the testing of more than 3 million people. Averaging across all effect sizes, $d = 0.15$, indicating that males scored higher, on average, but by only a very small amount (recalling Cohen's guidelines that $d = .20$ is small). The group of studies, however, contained a number of odd samples that might not be relevant to the question of gender differences in the general population. If we look just at the studies based on samples of the general population, then $d = -0.05$. That is, females scored slightly higher, but by a negligible amount. These findings directly contradict the stereotype that males have better mathematical ability than females do.

We also conducted moderator analyses to discern whether there were systematic variations in the magnitude of the gender difference as a function of factors such as the age of the test taker or the cognitive level of the test. Some previous reviews, for example, had concluded that there were no gender differences in mathematics performance in elementary school and that the gender difference emerged at the beginning of adolescence. Others had concluded that girls did as well as boys on simple tests of computation but that a gender difference was present for more complex problem-solving. We examined effect sizes for gender differences as a function of both age and cognitive level of the math test. For tests assessing simple computation, effect sizes were -0.20 for elementary school, -0.22 for middle school, and 0.0 for high school. Thus girls did somewhat better than boys in computation in the earlier grades but the gender gap disappeared by high school. For complex problem solving, effect sizes were 0.0 for elementary school, -0.02 for middle school, and +0.29 for high school. That is, there was no gender difference in elementary or middle school, but a small difference favoring males emerged in high school. This last gender difference is worth paying attention to, because complex problem solving is the skill that is needed for careers in fields such as physics and engineering, where women are distinctly underrepresented.

What accounts for the emergence of this gender difference in complex problem solving in high school? The likeliest explanation involves gender differences in course choice (e.g., Eccles, 1994). For decades, high school girls have been less likely than their male peers to enroll in advanced math classes and advanced science classes. The science classes are important as well because students learn much about quantitative problem solving in courses such as chemistry and physics. The gap in math course taking has closed just in the last few years, so that girls today are taking high school calculus at the same rate as boys are. The gap in taking physics persists, however. This meta-analysis was conducted in 1990, so the results in all likelihood represent that differential patterns of course taking that were prevalent in the 1970s and 1980s. The gap should narrow today with girls taking as much math as boys, although a small gap may remain because of choices not to take physics.

For most psychological variables, within-gender variability is considerably larger than between-gender variability

We also explored other variations in the magnitude of the gender difference. In regard to ethnicity, $d = 0.13$ for whites, but -0.02 for African Americans and 0.0 for Latinos. That is, the small gender gap favoring males in mathematics performance may be found in white samples, but it is not found in African American or Latino samples. Too many of the phenomena we consider reliable in psychology may be accurate for whites but not for other ethnic groups, chiefly because those other groups have not been studied.

Cross-national comparisons may be helpful in further understanding the magnitude of the gender difference – or similarity – in mathematics performance. Lummis and Stevenson (1990) assessed the performance of fifth graders on word problems in the U.S., Taiwan, and Japan. A slight advantage was found for boys in each country, but the more important point is that the between-nation differences were large compared with the between-gender differences, with children from the Asian nations performing considerably better than the American children. For example, Taiwanese and Japanese girls performed much better than American boys. In trying to understand and improve the performance of American children in mathematics, we might more profitably focus on the cross-national differences than on the gender differences.

Gender and Self-Esteem

Self-esteem is another area in which there is a widespread belief in gender differences, with girls and women pur-

portedly having more negative self-esteem than boys and men, particularly beginning in adolescence. Kling, Hyde, Showers, and Buswell (1999) conducted a meta-analysis to determine whether these beliefs are supported by the data. We were able to locate 184 relevant articles that generated 216 effect sizes, representing the testing of 97,121 persons. In addition, in a second analysis we used data from the National Center for Education Statistics (NCES); these nationally representative data sets represent the testing of roughly 48,000 American adolescents and young adults.

For the main meta-analysis, d = 0.21, indicating higher male self-esteem, but the gender difference is small, contrary to mass media reports. The magnitude of the gender difference varied significantly by age group. For elementary-school children, d = 0.16, for middle school, 0.23, for high school 0.33, for college-age 0.18, and for adults 0.10. That is, the gender difference was largest in high school (not in early adolescence, as some claimed), but even then it was not large, and the gender gap narrowed in adulthood. The data from the NCES were consistent with these findings, with effect sizes ranging from 0.04 to 0.24 for samples ranging in age from 13 to 32.

In the main meta-analysis, we also examined the magnitude of gender differences in self-esteem as a function of ethnicity. For Whites, d = 0.20, whereas for Blacks d = -0.04. As we saw in the math meta-analysis, the much-publicized gender gap in self-esteem is not found in Black samples.

Gender and Temperament

With an interest in determining whether some psychological gender differences are innate or present from birth, researchers have studied gender differences in temperament, which is usually thought of as traits that are relatively stable across age from early childhood, that form the basis for later personality, and that are heritable yet are also influenced by environment.

We undertook a meta-analysis of research on gender differences in temperament, including studies of children ranging from ages 3 months to 13 years (Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006). Gender similarities appeared for many dimensions, including adaptability (d = -0.03, the negative value indicating higher scores for girls), emotionality (d = 0.01), anger (0.04), negative affectivity (-0.06), pleasure (-0.09), sadness (-0.10), and soothability (0.05). Evidence of gender differences appeared in a factor called surgency, which includes activity level (d = 0.33) and impulsivity (0.18), with boys scoring higher. Gender differences also appeared in effortful control, including attention (d = -0.23) and inhibitory control (-0.41), with girls scoring higher. In general, then, there was much evidence for gender similarities in temperament. Exceptions occurred in areas such as activity level, impulsivity, and inhibitory control, although none of these gender differences were large.

Complex problem solving is the skill that is needed for careers in fields such as physics and engineering, where women are distinctly underrepresented.

Exceptions to Gender Similarities

As noted earlier, my review of 46 meta-analyses of psychological gender differences indicated that 78% of them yielded effect sizes that were small or close to zero (Hyde, 2005). Certainly, though, there are exceptions – areas in which gender differences are moderate or large in magnitude. Large gender differences are found in some aspects of motor performance such as throwing velocity (d = 2.18) and throwing distance (d = 1.98) (Thomas & French, 1985). Large gender differences are also found in some – though not all – aspects of sexuality (Oliver & Hyde, 1993). Large differences are found for masturbation and for attitudes about sex in a casual, uncommitted relationship, but gender differences in sexual satisfaction are close to zero.

Several meta-analyses of research on gender differences in aggression have appeared. Across these, gender differences tend to be moderate in magnitude, d = 0.50 (Archer, 2004; Eagly & Steffen, 1986; Hyde, 1984, 1986).

Costs to Overinflated Claims of Gender Differences

The popular press, then, often get it wrong when they assert that there are large, fundamental differences between males and females. Most of the evidence in fact shows that girls and boys are quite similar to each other, as are men and women.

There are serous costs to these overinflated claims of gender differences. For example, the claim that there are large gender differences in self-esteem in adolescence may lead parents and teachers to stereotype adolescent girls as fragile psychological messes. The claim of large

gender differences hurts boys as well, who are then stereotyped as having no self-esteem problems. Boys' self-esteem problems may manifest themselves differently as, for example, boys who believe that they have been bullied, buy guns and shoot down dozens of their classmates. Girls with self-esteem problems – not all girls – need special attention, but so do boys with self-esteem problems.

Conclusion

The gender similarities hypothesis stands in stark contrast to popular media claims that males and females are so different that it's as if they were from different planets. Moreover, there may be substantial costs to these overinflated claims of gender differences. According to the best scientific evidence, men are from earth and women are from earth.

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Table 1
Effect Sizes for Psychological Gender Differences, Based on Meta-Analyses, Categorized into Different Ranges of Magnitude

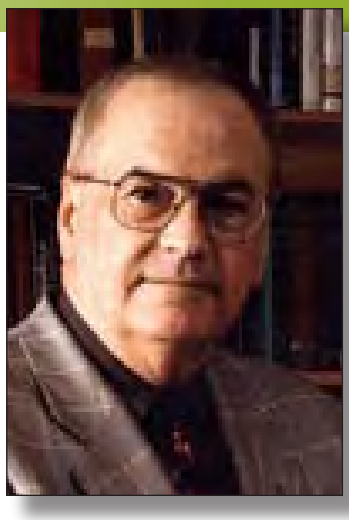
Effect Size

0 - 0.10	0.11 - 0.35	0.36 - 0.65	0.66 - 1.0	> 1.0
37	59	19	7	2
30%	48%	15%	6%	2%

Theoretical Anticipation:
A Multi-Generational Case Study[1]

by Travis I. Thompson, PhD - University of Minnesota Medical Center[2]

2006 Ernest R. Hilgard Award for Lifetime Career Contributions to General Psychology



It has been said that the best way to prevent oneself from developing baldness is to choose your parents carefully. There is something to be said for geneaology in scientific theory as well. Several years ago I was invited to write an article for the journal, *Behavior and Philosophy*, (Thompson, 2005) about the relation between Paul Meehl and B.F. Skinner during their overlapping years at the University of Minnesota. In conducting research for the paper, I was reminded of the culture of the Department of Psychology at Minnesota during that era and subsequently while I was in graduate school in the same department. I was fortunate to have grown up in an intellectual environment shaped by such psychologists as Kenneth MacCorquodale, Paul Meehl, Donald Patterson, Stanley Schachter, Gardner Lindzey and Norman Garmezy a theoretically diverse lot, and not a shrinking violet among them. As graduate students we were expected to enroll in courses taught by most of the senior professors in the department, regardless of one's own area of specialization. We whined, of course, but it did little good. The faculty insisted we understand psychological theories with which we took exception as well as our own preferred theoretical approach.

While I don't recall experiencing an epiphany while listening to one of Gardner Lindzey's lectures on psychoanalytic theory, I believe my aggregate graduate school experiences, and subsequent post-doctoral training with Joseph V. Brady at the University of Maryland, and a year working with Robert A. Hinde at Cambridge University, laid the ground work that made me intellectually receptive to integrating evidence-based approaches to psychology. That is, perhaps, is one of reasons I was fortunate to have been selected for this honor.

Anticipation

The tendency for a genetic trait to be expressed with greater intensity and earlier in life across generations, usually due to increasing numbers of trinucleotide repeats with each generation (e.g. Huntington's disease and Fragile X syndrome) where triplet repeat mutations in DNA are implicated, is referred to as *anticipation* (Rieger, Michaelis, and Green, 1991). In the present paper, I would like to discuss a theoretical counterpart of genetic anticipation in psychological theory and practice, in which an intellectual theoretical disposition that was initially latent, became progressively expressed with successive scientific generations.

Since its inception, the field of behavior analysis has been concerned primarily with variables external to the organism that influence its behavior. Endogenous factors have largely been considered private, inaccessible, and in some cases, hypothetical (Skinner, 1938), a view that persists in some circles today. My own work research and applied activities have been at the interface of operant learning theory, neuroscience and genetics. In this paper I would like to explore the genealogy of those commitments, and discuss the impact of the manner in which the field of behavior analysis emerged in the 1930s on its expression among second generation psychologists and in my own work.

B. F. Skinner at Harvard

The field of psychology now called *behavior analysis* emerged from decidedly biological roots while B. F. Skinner was a graduate student at Harvard University. Skinner was most influenced by his mentors in physiology and biochemistry, and to a far lesser degree, faculty in his own Department of Psychology. Skinner was at the nexus of several scholarly influences, but none had greater impact than the Chairman of Physiology, William Crozier, who was a protégé of Jacque Loeb, L. J. Henderson, the biochemist recognized by the National Academy of Sciences for his work on respiration, and the endocrinologist, Hudson Hoaglund.

Skinner had little positive to say about his experience with Department of Psychology faculty members. " Psychology, as I found it at Harvard, had not been all I expected, and I had always liked biology." (1979, p. 26) "…(Boring's) course…on 'perception' was simply painful." The only psychology faculty member who appeared to favorably influence Skinner was a young assistant professor, Carol C. Pratt, author of *Logic of Modern Psychology* (1939), whose theoretical interests dealt with operationism.

However, throughout his autobiography, Skinner (1979) consistently referred to the positive influences of W. J. Crozier, L. J. Henderson and Hudson Hoaglund on his thinking.

"I came closer to physiology in a new branch of the Department of Biology at Harvard. W. J. Crozier had been brought in as its head only three years before. (He was) bitten by the bug of a new discipline, General Physiology." (p. 16)

Anticipation...in which an intellectual theoretical disposition that was initially latent, became progressively expressed with successive scientific generations

"…Hudson Hoagland, taught General Physiology 5…. It was exactly the course I was looking for." (p. 17)

"That Fall I signed up for one course each with Crozier and Boring…Crozier's own course was right along my line. It was called 'The Analysis of Conduct'." (p. 44)

"Like Loeb, Crozier was fascinated by any demonstration of the lawfulness of behavior." (p. 45)

"Crozier called me into his office almost every day to show me graphs or equations which had turned up in the work he and Gregory Pincus were doing on geotropisms in rats." (pgs 99-100)

"It was said of Loeb that, in his concern for the organism as a whole, he 'resented the nervous system', and Crozier did too…. General physiology dealt with overall quantitative laws. It was a methodology rather than a subject matter…." p. 45

"I rejected Sherrington's physiology not because, like Jacques Loeb, I 'resented the nervous system,' but because I wanted a science of behavior." p. 68

"That Fall I audited a course in the history of science. It was taught by L. J. Henderson, a biochemist who had done pioneering work on the blood and had founded the Fatigue Laboratory at the Harvard Business School."

Lawrence Henderson had major impact on Skinner. Henderson was a brilliant polymath, with far-reaching scholarly interests. He drew on diverse philosophical and methodological sources to develop a strategy for understanding the exchange of oxygen and carbon dioxide from the lungs to the blood stream and the reverse. In order to characterize the moment-to-moment changes in these very complex dynamic processes, he adopted the nomographic method (or calculating chart) of d'Ocagne, for quantitatively representing graphically the interrelations among the numerous reacting constituents of blood, which proved to be an indispensable means of illustrating the system as a whole. (Cannon, 1943). Whether Henderson's graphic work influenced Skinner's adoption of the cumulative record to display behavioral processes in real time is unclear. Henderson nominated Skinner to become a Junior member of Harvard's Society of Fellows, the same year that philosopher Willard Van Orman Quine became a member, who had studied with Alfred North Whitehead. Henderson continued to be an influence on Skinner even after he accepted his first faculty position at the University of Minnesota. The publisher, D. Appleton Century, had told Skinner that the number of figures of cumulative records for his book, *Behavior of Organism* was excessive. Henderson approached the Society of Fellows for a grant to cover the cost of Skinner's figures, and the book was published, cumulative records and all.

B. F. Skinner and the Nervous System

Given Skinner's history at Harvard, it is difficult to reconcile his roots in physiology and biochemistry with his subsequent theoretical writing. In the *Behavior of Organisms (1938)*, Skinner devoted most of his chapter, "The Nervous System and Behavior," to reasons for rejecting reductionism. But Skinner's argument went beyond problems with reductionist theory. He implied that reference to the nervous system was unnecessary, misguided and implied that it was necessarily hypothetical. "The sort of neural homunculus that is postulated as a controlling force bears an unmistakable resemblance to the mental or spiritual homunculi of older systems, and it functions in the same way to introduce a kind of hypothetical order in to a disordered world." (Skinner, 1938, p 418) Later he wrote, "In an acceptable explanatory scheme the ultimate causes of behavior must be found outside the organism." (Skinner, 1959, p . 253) In *Science and Human Behavior* (Skinner, 1953) he presented a similar argument. "We shall (eventu-

ally) know the precise neurological conditions which immediately precede, say the response, 'No, thank you." These events in turn will be found to be preceded by other neurological events….(and) will lead us back to events outside the nervous system and, eventually, outside the organism." (Skinner, 1953, page 28). In fairness to Skinner, it is unlikely he could have anticipated the enormous technological and theoretical advances in neuroscience that have transformed many hypothetical events into objectively measurable members of causal chains (Bechtel, Stufflebeam, Mundale, and Mandik, 2001; Kandel, Schwartz and Jessell 2000). His early writing on the topic was based largely on the slapdash state of reductionistic theory at the time, which was largely devoid of empirical foundation.

Although he made reference to physiology throughout his writing (Morris, Lazo, & Smith, 2004), only in his later works did Skinner embrace the idea that objectively measurable events obtained at a different level of analysis could have the status of familiar external variables within a functional analysis. Skinner acknowledged more clearly the possibility of an integrated biological science that included his concept of the functional analysis of behavior as part of the discipline of psychology and neuroscience. "I have never questioned the importance of physiology or in particular brain science or its relevance to behavior. What is happening inside the skin of an organism is part of its behavior, but it does not explain what the organism does in the space around it until it has been explained in turn.... We can predict and control behavior without knowing anything about what is happening inside. A complete account will nevertheless require the joint action of both sciences [physiology and the experimental analysis of behavior], each with its own instruments and methods." (Skinner, 1989, p. 130)

Although he made reference to physiology throughout his writing..., only in his later works did Skinner embrace the idea that objectively measurable events obtained at a different level of analysis could have the status of familiar external variables within a functional analysis.

Theoretical Foundations at Harvard

What exactly was it that Skinner gleaned from his training and experiences with Crozier, Henderson, Bridgman, and Hoagland? Skinner was encouraged by Crozier and Henderson to pursue a science of the behavior of the whole organism, which he and they argued was a suitable a subject matter in its own right. It need not reveal anything about the nervous system, nor about the mind either. While Henderson was a "big picture" thinker, Crozier was fascinated by the details of the scientific method and laboratory procedure, which rubbed off on Skinner. When I was enrolled in a course on *Theories of Learning* taught by W. T. Heron, one of Skinner's first colleagues at Minnesota in the late 1930s, Heron commented to our class that his strongest recollection of Skinner was his ingenuity at devising new experimental apparatus to solve scientific problems. Crozier had inculcated Skinner with the importance of precise quantitative measurement of behavior, and Henderson shared with Skinner his unique graphical method for teasing apart the multiple variables regulating gas exchange in the lungs and blood stream. And of course, Henderson and Hoaglund introduced Skinner to the standard experimental design in physiology of that era, the reversal ABA design, which became the basis for a functional analysis behavior, which was used to identify controlling variables, a la Claude Bernard (Thompson, 1984). Bridgman and Carol Pratt instilled intense skepticism regarding unobserved, hypothetical causes of observable, natural phenomena, which was especially welcome to Skinner who had early on abandoned mental events. Perhaps most surprisingly, Henderson taught Skinner that at times explanations were at a higher, not a lower level of analysis. Henderson became fascinated by the quantitative study of behavior of groups of people, i.e. sociology, writing a book title "Pareto's General Sociology, A Physiologist's Interpretation" (Cannon, 1943). Skinner left Harvard for Minnesota, with an armamentarium of metatheoretical principles under his intellectual hat. In Minneapolis Skinner encountered an extraordinarily bright group of graduate students at the University of Minnesota.

Howard Hunt, Kenneth MacCorquodale, and Paul Meehl at Minnesota

Among the first group of students Skinner attracted in Minneapolis were Kenneth MacCorquodale, Frank Barron, William K. Estes, George Collier, Keller, and Marian Breland,

Norman Guttman, Howard F. Hunt, and Paul E Meehl. MacCorquodale, Meehl, and indirectly, Howard Hunt (via Joseph V. Brady and Gordon Heistad) all served as my mentors in various ways and to varying degrees. Paul Meehl told me on numerous occasions that Skinner always had an impact upon those around him, even if he were not formally their advisor or mentor, and this group of bright young psychologists was no exception. Skinner's brand of behaviorism influenced their theoretical thinking to varying degrees. To continue the genetic metaphor, one could think of Skinner's influence as "partial penetrance," fully expressed only in Kennth MacCorquodale's theoretical writing and teaching. Hunt and Meehl freely integrated brain science, with operant and psychopathological concepts in their writing and research.

MacCorquodale and Meehl wrote a critical analysis of Tolman's learning theory for Koch's (1954) *Modern Learning Theories* book, which was "must" reading for Minnesota graduate students. MacCorquodale and Meehl's (1948) influential article, "On a distinction between hypothetical constructs and intervening variables," provided grist for numerous animated discussions of Skinner's views. While MacCorquodale taught a version of behavior analysis in which theoretical constructs were near the intervening variable end of the surplus meaning continuum, Meehl considered Skinner's adherence to pure intervening variables as misguided. Meehl argued that, in practice, such constructs were rare except in certain fields of physics. Moreover, in Meehl's view, some putative explanatory variables that are not securely anchored to the observation level (what philosophers call "open concepts") could at times provide important hypotheses to be empirically tested.

To continue the genetic metaphor, one could think of Skinner's influence as "partial penetrance," fully expressed only in Kennth MacCorquodale's theoretical writing and teaching.

Kenneth MacCorquodale and Paul Meehl shaped much of my intellectual life as a psychologist. I had the good fortune of studying with both men. MacCorquodale, who was my undergraduate advisor and informal mentor during graduate school, was the cynosure of incisive, analytic clarity and rigor. I jointly taught a seminar on behavior analytic theory with him for many years prior to his retirement, which was a great pleasure (Thompson, 1987). One came away from a discussion with him with a clearer understanding of what it meant "to know." MacCorquodale and Meehl were life-long colleagues and friends who held one another in high esteem, though in many respects their approaches to psychological theory could not have been more different. I had enrolled in Meehl's term of the "Systematic Psychology" course as a graduate student, during which he discussed Herbert Feigl's philosophical analysis of psychological concepts and the mind-body problem, and I spent a great many hours discussing theory with him as a faculty colleague. Meehl masterfully promulgated his unique approach to synthetic reasoning throughout his voluminous theoretical contributions. He had the ability to find order in psychological phenomena that appeared chaotic, to disentangle threads of thought and evidence that enabled him to deconstruct, then re-weave a novel theoretical fabric, revealing important relationships that had eluded nearly everyone (Thompson, 2005). Being steeped in both intellectual traditions has served me well throughout my career and certainly prepared me to benefit from my time as a post-doctoral fellow with Joseph V. Brady at the University of Maryland.

Howard F. Hunt, like Paul Meehl, was enrolled in the clinical psychology doctoral program at Minnesota. When Hunt completed his doctorate, he spent time in the U.S. Navy before accepting a brief appointment at Stanford University. Subsequently he accepted a position at the University of Chicago where Joseph V. Brady was his first graduate student. Hunt incorporated learning theory concepts into his research on animal models of psychopathology. He conducted early research on psychopharmacology and, with Brady, studied effects of electroconvulsive shock on conditioned anxiety in rats, using Estes and Skinner's (1941) laboratory paradigm. After World War II, Joe Brady accepted a position at Walter Reed Army Research Institute in Washington DC, where he established one of the first truly interdisciplinary "physiological psychology" research programs (now called neuroscience) in the country.[3] Brady divided his time between Walter Reed and the Psychopharmacology Laboratory at the University of Maryland in College Park, where he served as my mentor during a post-doctoral fellowship (1961-3).

Experimental Drug Addiction Brady's University of Maryland laboratory was the *sine qua non* of interdisciplin-

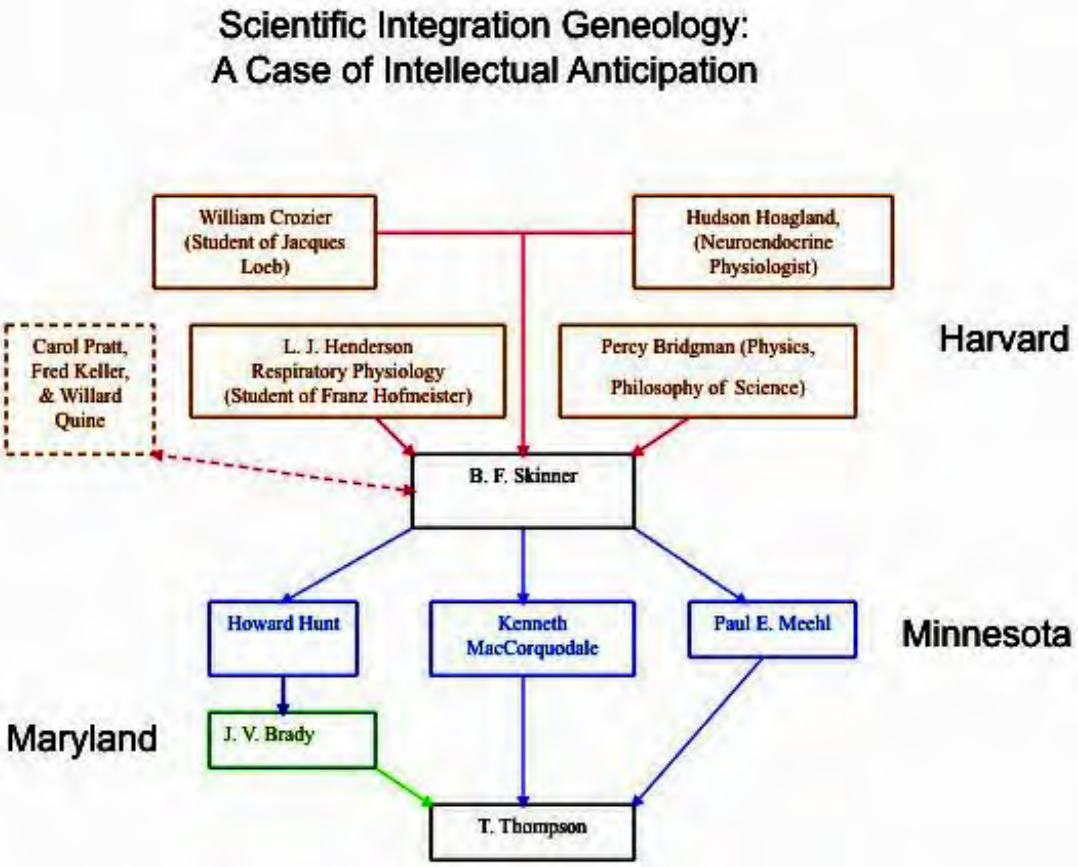
ary research environments, and he was the master of integrative strategic thinking. Brady surrounded himself with some of the brightest up and coming, as well as established psychologists, such as Charles B. Ferster, Louis R. Gollub, Stanley Pliskoff, Charles R. Schuster, Jack D. Findley, and me. Our laboratory staff included not only psychologists, but an engineer who had designed Ed Foringer's original operant research equipment (relay timer control panels and operant chambers) and a full-time veterinarian, Wendell Neimann, who taught and assisted us in carrying out experimental surgery and oversaw care of our vivarium. In this heady research environment Bob (Charles R.) Schuster and I conducted one of the first studies of an animal model of opiate addiction employing Rhesus monkeys as subjects (Thompson and Schuster, 1964). That work helped lay the foundation for the field of drug self-administration by laboratory animals to screen for addiction liability of newly developed pharmaceutical agents. Later Bob Schuster and I wrote the first textbook in *Behavioral Pharmacology* (1968). During my time with Joe Brady, I also developed a keen interest in combining concepts from ethology and operant psychology, working with Siamese Fighting Fish (Betta splendens) (Thompson 1963; 1969) and fighting cocks (Thompson, 1964), which later led to a sabbatical year (1969) with Robert A. Hinde at Cambridge's SubDepartment of Animal Behaviour in Madingley.

Joe Brady...established one of the first truly interdisciplinary "physiological psychology" research programs (now called neuroscience) in the country.

Treatment of Self-Injurious Behavior Robert Hinde once commented to me that he had reached the point in his career at which he could be a bit disreputable, by which he meant he had begun to study people instead of Chaffinches and monkeys. After many years of exclusively basic science research with animal subjects, I too made the decision Professor Hinde had made, and began working with people. I began applying operant principles to working with people with developmental disabilities, first in institutional settings (Thompson and Grabowski, 1972) and later in schools and in families' homes. In the course of developing practical interventions for individuals with developmental disabilities, based on principles of applied behavior analysis, to teach new skills and reduce problem behavior, the drug self-administration work Bob Schuster and I had done laid the foundation for research designed to develop a new treatment for self-injury by individuals with autism and related developmental disabilities. We hypothesized that self-injurious behavior, such has head hitting or hand biting, released beta endorphin that bound to the *mu* opiate receptor, thereby serving as a reinforcer, much as endogenous morphine had reinforced lever pressing leading to morphine infusion to our laboratory monkeys. We reasoned that if people engaging in self-injury were treated with a medication that blocked the opiate receptors, then the self-injurious behavior should undergo extinction, which it did (Thompson, Hackenberg, Cerutti, Baker, & Axtell, 1994). Several years later Curt Sandman and colleagues demonstrated the degree to which self-injury was reduced by an opiate antagonist, naltrexone, was correlated with the amount of increase in plasma beta endorphin following self-injury (Sandman, Touchette, Lenjavi, Marion and Chics-deMet, 2003).

Early Autism Intervention and Synaptogenesis

In 1987 Ivar Lovaas published a landmark paper demonstrating the approximately half of a group of children diagnosed with autism functioned within a typical range intellectually and were integrated in regular education after 3 years of 40-hours-per-week of intensive behavior therapy. There have been several subsequent studies with approximately the same outcomes (e.g. Sallows & Graupner, 2005; Remington et. al. 2007). As exciting as these remarkable improvements in the lives of children with autism truly are, the findings raise the question why only half of the children show these striking changes. For the past five years I have directed community home based behavior therapy services for young children with autism spectrum disorders, and have been struck by the marked differences between "responders" and "non-reponders" to intensive early behavior therapy. I recently suggested that this difference must be due to the possibility of experience-dependent synaptogenesis compensating for the deficits among the rapid-learning children, and a different mechanism underlying the autism symptoms among slow or non-responders (Thompson, 2005). This would be consistent with evidence that reinforced responding in laboratory animals leads to increased synapse formation per cell in rats and monkeys, and when reinforcement is discontinued, the number of synapses declines (Kleim, Bar-



bay, Cooper, Hogg, Reidel et. al, 2002). This suggests there may be a genetic endophenotype that is associated with a synaptic dysfunction, while other autism phenotypes are due to different mechanisms.

Skinner's Radical Behaviorism Revisted

For several decades following publication of *Behavior of Organism*, Skinner's writing promulgated a form of radical environmentalism that rejected the possibility that a more complete functional analysis of behavior could emanate from integrating scientific concepts and methods at different levels of analysis, neuroscience, genetics and operant concepts. Some years later he acknowledged the putative value of such an approach in providing a more complete scientific account, which some of the young psychologists at the University of Minnesota had assimilated years earlier (Howard Hunt, Paul Meehl and to a lesser extend, Kenneth MacCorquodale). By my post-doctoral years with Joe Brady and subsequently, I had undergone the "full mutation of the theoretical integration trait", being committed to the notion that a functional analysis of behavior is enriched and provides a more adequate theoretical account if it includes endogenous as well as exogenous concepts.

Behavior analysis is not separate from biology, it is a biological science. The notion that causal statements must refer to events occurring outside the skin is an implausible assertion, based on a false distinction between behavioral and biological variables (Thompson, 2005). Some of the basic metatheoretical assumptions Skinner acquired at Harvard, though latent throughout much of his career, were passed on to MacCorquodale, Meehl and Hunt at Minnesota and Brady at Chicago, which by my generation, were fully expressed as an integrative theoretical trait. Perhaps I owe a debt of gratitude to my intellectual great grandparents, William Crozier, Lawrence Henderson, Percy Bridgman and Hudson Hoagland whose strategies for doing science found their way through B.F.Skinner, Kenneth MacCorquodale, Paul Meehl, Howard Hunt and Joseph Brady, to me, a fortunate genealogy indeed.

Notes:

1. Ernest R. Hilgard Award Lecture, American Psychological Association Division 1, San Francisco, CA, August 19, 2007.

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3. Among others in Brady's Walter Reed laboratories were Israel Goldiamond, Richard Hernstein, James Sherman, Eliot Hearst, John Boren, Murray Sidman, and Eliot Valenstein.

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Milgram—Obedience to Authority

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Ian Nicholson

The images were ghastly and they sparked a worldwide outcry: Iraqi detainees being electrocuted, beaten, covered in excrement, and sexually abused by American soldiers at Abu Ghraib prison. Putting suffering on display is always unsettling, but what made these images so compelling was not the anguish of the detainees as much as it was the exuberance of the American soldiers involved. Soldiers are shown flashing their best high school yearbook smile over dead Iraqis and posturing menacingly over a prone detainee, apparently delighting in the feeling of absolute power.

The political issues raised by these images are important and much debated, but for psychologists Abu Ghraib also speaks to fundamental questions of human nature:How could this happen? How could seemingly 'ordinary' American soldiers commit such brutal acts? For the historian of psychology, such questions immediately call to mind what is arguably the most famous experiment in the entire history of American psychology, Stanley Milgram's *Obedience to Authority* (1974). First published in 1963,the study was unusual for social psychology insofar as it explicitly linked an experimental framework to an historical event whose political relevance was still current: the Holocaust. The subject had an immediate personal relevance for Milgram. As the child of eastern European Jewish immigrants, he grew up with a keen awareness of the Holocaust and an enduring fascination with the conditions that led to the slaughter. In one of the first published accounts of the experiment, understanding the Holocaust was the principal justification given for the 'obedience' experiments (Milgram, 1963).

The staggering scale of the Holocaust represented a huge challenge for the social psychologist who wished to use "experimentation" as an investigative tool. How could one possibly recreate such savagery in the "safe" and politically sanitized environment of a psychological laboratory? Was it even possible to speak experimentally to the psychological dynamics of the Holocaust without trivializing the historical experience of those who participated? Riding a crest of optimism and faith in the power of human experimentation, Milgram believed that such an experiment was possible. However, to scientifically "reach" the Holocaust he needed to devise a new and more brutal aesthetic for social psychological experimentation. The restrained workaday world was out: Milgram needed to devise a space of power, pain, anguish and domination. He needed a "scientific" spectacle that could at least begin to approximate the brutal wonder of Nazi horror. In what has come to be known as the "obedience to authority" paradigm, Milgram had his spectacle.

Forty-five years later, the basic details of Milgram's experimental design and his essential findings are familiar to most psychology students—a rare accomplishment in a discipline with a notoriously poor long term memory. To briefly recap, Milgram deceived his subjects into believing that they were participating in an experiment on memory and that their task was to "teach" another subject by applying progressively stronger electric shocks every time the subject made a mistake when recalling lists of memorized words. The real test of course was not memory, but obedience. How many shocks would subjects administer? How much pain would they inflict? It was an intriguing, albeit brutal, interrogation of human nature made all the more memorable by an extraordinary film Milgram made of the experiment, a film which, for all of its grainy images

and poor production values, captures the study's intensity and drama in a way that no text can. Watching the film, one can quite literally see the apparent weakness of human nature and how easy it is to transform ordinary individuals into agents of torment. A context of legitimacy and an order from an authority figure was apparently all it took to turn 2/3 of Milgram's participants into killers.

The obedience study captured the public imagination and it propelled Milgram to the forefront of the discipline. Many psychologists were dazzled by Milgram's methodological creativity and fascinated by the destructive behavior produced by the experiment. "What the hell is going on in people's minds when they are performing such behaviorisms (sic)?" psychologist Elliot Aronson exclaimed in 1964. "Do they really think that they are doing the right thing?" (Aronson to Milgram, February 4, 1964, Milgram Papers). Unfortunately for Milgram, interest in his experiment was not all positive, and he soon found himself embroiled in an ethical controversy over the treatment of research subjects. In 1964, Diana Baumrind published a stinging critique of the obedience study. She challenged the parallel between Nazi death camps and the social psychology laboratory, and she questioned whether a laboratory was an appropriate place to study obedience, given that subjects were "more prone to behave in an obedient, suggestible manner in the laboratory than elsewhere" (p.421). Baumrind also took Milgram to task for his apparent indifference to the dignity and psychological well being of his participants. Did the experiment expose subjects to unacceptably high levels of stress? Did Milgram's experimental design infringe on the participant's right to withdraw from the experiment? Milgram (1964) wrote a spirited response to Baumrind, but the ethical debate quickly snowballed, providing the "impetus for a renaissance of sensitivity to ethical issues in human experimentation" (Miller, Collins & Brief, 1995; see also Miller 1986).

Stanley Milgram

As scholars continue to debate the ethics of Milgram's obedience experiments (Herrera, 1997), new historical research has raised questions about the meaning of the experiments (Nicholson, 2007, June). Milgram argued that his study was a politically and historically neutral investigation of human nature, and he suggested that the moral choice posed by his experimental design was obvious. Subjects should have broken off the experiment and refused to harm the "learner," said Milgram, "*in the face of a clear moral imperative*" (1974, p. 4, emphasis added). Their inability to do so was, for Milgram (1974), evidence of a "fatal flaw that nature has designed into us, the capacity for man to abandon his humanity, indeed, the inevitability that he does so as he merges his unique personality into larger organizational structures" (p.188). Although Milgram's conclusion seems warranted given the evidence he presented, it is important to note that he did not allow the subjectivity of his participants to intrude on the moral tale he strove to tell. Participants were shorn of their cultural identities and the majority were presented as weak-willed individuals, acting against their conscience by participating in something that was obviously wrong. However, archival research allows us to go back and reveal the participants as purposeful and politically aware citizens, alive to the implications of what they were doing and to the larger political implications of psychological research. Viewed in this context, their actions speak less of a "fatal flaw" in human nature than they do of a culturally and politically anxious Cold War America (Nicholson, 2007).

Although much has been written about the importance of the Holocaust as an influence on the obedience research, little attention has been paid to the Cold War context that shaped the perceptions of Milgram's participants (almost all of whom were men). The experiments began in August 1961, three months after the Bay of Pigs, and they continued through to May 1962, two months before Soviet nuclear warheads were deployed on Cuba —the event that touched off the Cuban missile crisis. This Cold War context fostered an extraordinarily polarized and intense politicized discourse structured largely around a hard/soft opposition (Costigliola, 1997). As historian K. A. Cuordileone (2000) has noted, the Cold War "put a new premium on hard masculine toughness and rendered anything less than that soft and feminine and, as such, a real or potential threat to the security of the nation" (p.516).

Masculine categories and especially the politically loaded, hard/soft dichotomy provided the terms of understanding for many of Milgram's participants. For some, resisting authority was an affirmation of

manhood: "I was glad to find that I had the 'guts' to refuse to continue despite assurances that all was well." Although many participants saw the experiment in gendered terms, the correct, i.e. "tough," response was not always clear. Several participants noted that a very real problem for the United States in its struggle with its Soviet adversary was not that there was too much obedience but that there was too little. "My old master sergeant in basic training was right," one participant noted emphatically, "We were not tough enough then (1947) and have a long way to go, if we are to survive as a nation."

This felt need for a tough male psyche to defend America, colored the way many men viewed the experiment. Some drew on their own experience as soldiers in World War II and framed the study as a test to identify tough guys who could get the job done against a determined Communist foe. "One of the great difficulties in warfare is that only a few men are able to pull the trigger to kill someone. Studies like this may be able to show how many are what the Air Force calls 'tigers.'" With the Cold War red hot, America needed "tigers" to face down the Communist threat and not weaklings who would flinch in the face of a few screams. Indeed, some participants who broke off the experiment felt bad about their decision and thought that it did not reflect well on the tough masculinity that had been honed through their military experience. "My 38 months of active duty and 17 of them overseas have stood me in good stead….While in the service I was affected by seeing men killed and wounded, and it made me somewhat 'hard.' However, after the experiment when I found I could not or would not continue, it made me realize I have softened." For these men, the experiment was not a test of their own inner morality but a measure of their warrior masculinity. "In my opinion," one subject remarked, "it definitely shows how much one human can stand to see another human suffer….Is this a separation of the 'men from the boys'?"

In the context of the Cold War, sorting out the men from the boys was a matter of national survival, in addition to being a point of personal pride. With the future of the nation seemingly dependent on a robust masculinity, the morality of the obedience dilemma that Milgram had devised was not nearly as obvious as what he had implied. "Now you've got me curious," one of his obedient participants noted. "Are we the cream of the crop because we finished the tests or are we something else?" A defiant subject was equally unsure of the moral meaning of his action: "It seems that I'm in the 40% that will not follow orders without more justification than it being an order. But is this good or bad?"

Several participants noted that a very real problem for the United States in its struggle with its Soviet adversary was not that there was too much obedience but that there was too little.

The moral meaning of the experiment may have been obvious to Milgram, but as the participant feedback makes clear, "obedience to authority" cannot be easily divorced from a political and social context. Political meanings are read into the situation—even one as seemingly inert as a psychological laboratory—thereby rendering any broad based conclusions about human nature highly suspect. Indeed, with historical perspective, what stands out about Milgram's study is not the timeless veracity of its conclusions but its embeddedness in the era's Cold War politics and gender anxieties. The sense of masculinity besieged and the fear of organizations that pervades Milgram's work was a standard trope of Cold War era human science and social commentary. As historian James Gilbert (2005) has recently noted, social scientists in the 1950s and '60s were obsessed by the apparent demise of an older, romanticized masculinity of strong, self-made, "inner directed" American men and the subsequent rise of a feminized, "other-directed" organization man whose principal goal was to conform to mass culture rather than assert his own individuality. Milgram tapped into this longing for strong, inner-directed masculinity, thereby achieving fame not through the novel "truth" that he had revealed, but rather through the dramatic way he staged and reinforced deeply felt cold war anxieties about gender, mass culture, and communism (Nicholson, 2007, June).

Highlighting the historical contingency of Milgram's work, may undermine its power as a kind of folklore for explaining why good people do bad things, but the study remains extraordinarily useful as a vehicle for exploring

both research ethics and the epistemological limits of human experimentation on complex social phenomena. As historian Rebecca Lemov (2005) has recently noted, Milgram's work should make us extremely cautious about "invoking very high social goals in order to justify [experiments] that otherwise might seem duplicitous or sadistic" (p.236). Moreover, when positioned in historical context, the experiment invites us to reflect very carefully on the validity of transforming historical, purposeful beings into culturally inert "subjects." We may rightly question whether our understanding of complex political situated events like Abu Ghraib is enhanced by the kind of suppression of culture featured in Milgram's experiment. It may be, as Lemov argues, that this kind of decontextualized human experimentation has served not to enhance our appreciation of the cultural embeddedness of human action but rather to perpetuate a "logic that blames 'bad apples' for crimes that each person commits or condones in small and large ways every day" (p.236).

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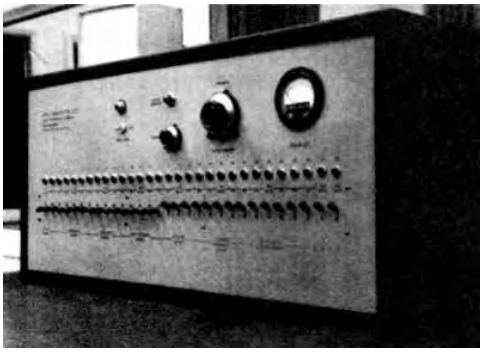

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Please consider recommending articles in *The General Psychologist* to your students. The publication is available online to anyone—members and nonmembers of the Society of General Psychology alike—at http://www.apa.org/divisions/div1/newspub.html.

What They're Reading
or The Curious Reading Habits of Certain Psychologists

Edited by Vivian McCann Hamilton - Portland Community College

Spring has sprung, and our decks and patios are beckoning us outside to enjoy the fresh air. Of course, you'll need a good book or two to keep you company, so here are some provocative recommendations from two psychologists known not only for their excellent teaching, but for their interesting reading lists.

Cynthia Golledge

Cynthia Golledge teaches for Portland Community College in Oregon. Her interests, in addition to reading (with a cat or two in lap), include exploring the Pacific Northwest, scuba-diving, and helping her partner refurbish his 45-ft sailboat. She says, "While my training and PhD are generalist, my specialty leans toward Social Psychology. My favorite courses to teach include Social Psychology, Human Relations, and Human Sexuality -- all variants of the same idea, as far as I can tell -- and I tend to enjoy books that explore those lines of inquiry." Consonant with those interests, below are three books that she has recently finished and thoroughly enjoyed.

Our Inner Ape: A Leading Primatologist Explains Why We Are Who We Are, by Frans de Waal. This book is a 3-fer for me, and I loved it. It's got lots of sex, interpersonal communication patterns, and fascinating examinations of complex social behavior. If you're at all interested in primatology, then you're already familiar with de Waal and his work. If primatology hasn't been one of the subjects you've stayed on top of, but you're interested in an evolutionary explanation for some of the curious behaviors you see demonstrated by your colleagues and co-workers, then this promises to be an illuminating read. How do some individuals wield power without actually being in charge? Is there any support in the simian world for the idea that men (on average) are more able to disagree without taking it personally, and that women tend to hold grudges? Are we humans more like the aggressive, war-faring chimpanzee, or are we more akin to the "free-love" bonobo, a species who appears to be caught in a 1960's ideology? This book will allow you to more knowledgeably answer evolutionary and/or primatology-based questions from your students as you debate whether we're more like chimpanzees or bonobos, and what that might presage for our future as a species. And it's a tremendously fun read.

Vivian McCann Hamilton

Mistakes Were Made (But Not By Me!): Why We Justify Foolish Beliefs, Bad Decisions, and Hurtful Acts, by Carol Tavris and Eliot Aronson. My Social Psych students will tell you that it's with unrestrained glee that when they ask me, shortly into the term and they've learned about conformity and obedience, "But how do people live with themselves after they do these things?" How do they convince themselves that they're still good people?" I respond, "Just wait until we get to cognitive dissonance!" So when I came across this recent new book while perusing the Powell's bookshelf, I think I created a small scene in the aisle. What can I say? As a devoted fan of cognitive dissonance and self-justification, of course I loved this book, written perfectly and engagingly by Tavris and Aronson. My current batch of Social Psych students are made to suffer gladly as I read excerpts from it, and either gasp in horror or laugh with appreciation in response. Even if you don't teach this topic, this is another one of those books that will suddenly make clear and understandable the audacious and the reprehensible, including the antics of our politicians, our co-workers, our neighbors, and our long-term partners as we argue for the Nth time about who is more at fault and whose behavior most needs to change.

The Omnivore's Dilemma, by Michael Pollan. Did you know that the average American eats so much of one particular type of food that it can be detected in our DNA? Pollan takes on the role of an investigative journalist, and he is a mesmerizing one. It's truly difficult to put this book

What They're Reading...

down as he becomes a detective and tries to find out what's in our food, and where it came from. What's IN that chicken McNugget, anyway? What actually are all those ingredients we commonly see listed on our grocery packages? For that matter, what does "organic" mean? And what about "cage-free" and "free-range"? An epicure of carnivorous bent himself, Pollan buys a calf and follows it (as best as he is allowed by the industry) from steer to burger, and learns what the steer eats as well as who will end up eating the steer. If you consider yourself someone concerned about the human condition (locally or worldwide), if you purchase "organic" produce at the grocery store whenever you can, and if you believe that your current actions and decisions reflect your social values, then yes, you want to read this book. But ***Omnivore's Dilemma*** is not a plodding, "this-knowledge-is-good-for-you-so-read-it-and-amend-your-ways" tome. It's as good as any mystery novel, and in the end, the reader is left feeling neither chastised nor righteous, but more aware of the political and social statements made by each and every food purchase.

Regan Gurung

Regan A. R. Gurung is Professor of Psychology and Human Development at the University of Wisconsin, Green Bay. He was an undergraduate at Carleton College (MN), received his Ph.D. from the University of Washington (Social/Personality) and was a postdoc at UCLA before joining UWGB. He is an active member of the Society for Teaching in Psychology and enjoys doing pedagogical research together with research interests in culture and health. Regan offers the following good reads:

Want a good mental workout and to read something that is a big topic in literary circles? Daniel Dennett's ***Breaking the Spell: Religion as a Natural Phenomenon*** provides ample material for reflection. Dennett is a smart, well-read man who can really make you think. A philosopher well-versed in science and a number of disciplines, he has previously authored other thought-provoking books such as the modestly-titled ***Consciousness Explained,*** and ***Darwin's Dangerous Idea: Evolution and the Meaning of Life*** (two similarly good reads). His latest book was the first in the litany of 'Is there a God?' books (notably Dawkins' ***The God Delusion,*** and more recently Hitchens' ***God is Not Great: How Religions Poison Everything*** and Harris' ***The End of Faith: Religion, Terror and the Future of Reason***).

Although the writing is sometimes dense and the logic seemingly convoluted, this is an interdisciplinary tour de force that suggests there is no need to ascribe supernatural status to religion, and that everything about religion has come about due to human needs and the way the mind evolved. Even for those who are firm believers in a God, this book provides many insights into the nature of religious worship that give one pause and provoke an examination of the foundations of faith. At times he will make you mad, but the intellectual workout you get trying to figure out why -- and how to counter his arguments -- provides a thorough mental stimulation. Of the many insights, perhaps one that struck me as the most in need of sharing is that no matter what one believes (whether a certain God or form of religion), there will always be more people who believe something else. Chew on that.

If you are someone who feels guilty reading fiction when there is so much good nonfiction to read and things to learn about, the next two are for you. Both were hard to put down (both for me and the many I lent my copies to) and, although they are fictional, you learn a lot about many things in both.

First, try out some fiction involving a cognitive psychologist and near death experiences (NDEs). Connie Willis' ***Passage*** is all about the possible causes of the similar experiences recounted by those who experience death for a brief moment of time before being revived. Often such close calls are accompanied by experiences of floating above the body, being in a dark tunnel and seeing light at the other end, and perhaps being greeting by an angelic host that bids you to return to live some more. There are biological explanations and spiritual explanations, and Willis combines a strong knowledge of the research to spin an engaging tale that makes one consider what really happens when we die.

The writing is tight. The storytelling is masterful and you actually learn a lot about the history of research on the topic (as well as on many other topics). There are numerous examples of confirmation biases and other psychological

What They're Reading...

phenomenon at work. For example, there is a writer who uses leading questions to get patients to describe their experiences to fit his book-selling purposes; there is also a nice illustration of what makes for robust research on a topic that is hard to quantify. In keeping with psychology's current fascination with fMRIs and other imaging technology, a major part of the book involves what a NDE looks like in the brain when it is experienced, and an exploration of how it could be created by certain substances. Can creating an experience by neural stimulation or a psychoactive substance duplicate a naturally occurring experience? Are there naturally-occurring spiritual experiences that are solely caused by neural firings? In posing such questions, this book provides an interesting parallel to Dennett's explorations of religion in my first suggestion. If you like considering some heady matter unfettered by the knowledge you are reading fiction, then *Passage* is a perfect book to take a break with.

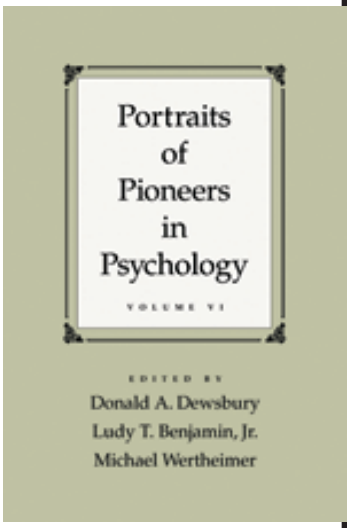
Now for something completely different. Ever had the feeling that you would like to be whisked away from all the busywork that one often has to do as part of being a complete academic? If you want to be drawn into a book by its sheer writing excellence and storytelling power then ***Perfume*** by Patrick Suskind is a book to consider getting a hold of. A slim volume originally written in German, the subtitle (The Story of a Murderer) may make one think this recommendation too macabre for their tastes. Fear not, the mayhem is not especially gruesome, and the premise is tantalizing. The fictional tale set in 18th century France tells the story of a man born with a super-sensitive sense of smell but a variety of psychological problems. He faces all the hardships of someone born in the lowest social class and is shunted through orphanages and mistreated. He, who himself has no smell, becomes obsessed with smells and develops the ability to parse and catalogue millions of smells. He is driven to capture the purest sense of all, the scent to top all scents, and for this he must kill. Along the way is a musing on the role smell plays in the development of impressions and in the fabric of human life. Suskind's writing reels you into a captivating world that, bereft of our modern extravagances, is nonetheless rich in texture, complexity, and heady aroma. The discussion of motivation and the life of a different mind provides ample fuel for our own reflections on what it means to be a human.

Portraits of Pioneers in Psychology - Volume VI

Edited by Donald A. Dewsbury, Ludy T. Benjamin, Jr., and Michael Wertheimer

Co-Published by APA Books and Lawrence Erlbaum Associates. Inc.
PUBLICATION DATE: June 2006
EDITION: Hardcover
344 pages
ISBN: 1-59147-417-5
MEMBER/AFFILIATE PRICE: **$49.95**

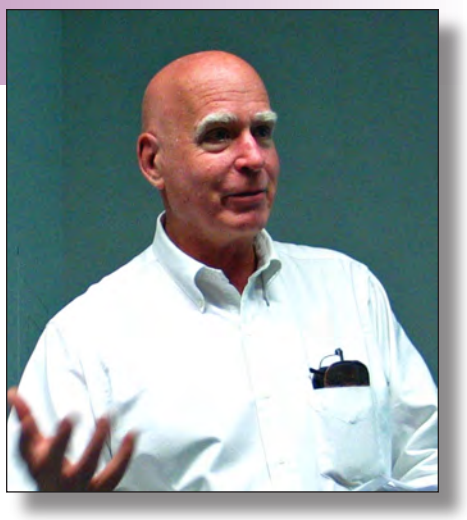
The latest in the series Portraits of Pioneers in Psychology, Vol. VI pays tribute to several big names in psychology, such as Abraham Maslow, Henry Murray, Edmund Clark Sanford, James McKeen Cattell, Robert Woodworth, and Nobel Prize winner Niko Tinbergen, and some perhaps lesser known luminaries who nonetheless made significant contributions to the field. Among the many inspiring accounts is that of the challenges faced by Kenneth Clark, the first African-American president of the American Psychological Association, whose scholarly work on racial prejudice and efforts to unite social science and social activism helped lay the groundwork for the landmark Supreme Court ruling in Brown v. Board of Education, which ended segregation in the schools.



Through this collection of 17 biographies emerges a sense of excitement and of the often challenging work that shaped research and practice across a range of fields, including clinical and counseling psychology, child psychology, individual differences, comparative psychology, emotions, experimental psychology, industrial/organizational psychology, and sport psychology. The chapters, compellingly written by individuals who have contributed significantly to the field of the history of psychology, will capture the interest of graduate and undergraduate students, faculty members in psychology, and scholars in related fields. A unique feature of this volume is a complete list of the subjects and authors covered in the entire series, with descriptors to enable instructors to easily find relevant chapters to supplement their courses in substantive areas of psychology.

President's Report

BY TOM BOUCHARD



Division 1 President
Tom Bouchard

An important objective of Division1 is to represent psychology as a whole. That is, to address issues of interest and significance to the vast majority of psychologists. This idea is the driving force behind the division agenda for the 2008 Boston meetings. The overriding theme is **Evolutionary Psychology**. Initially, evolutionary psychology was a rather controversial approach to the understanding and explanation of behavior. Over the course of three decades it has successfully dissolved numerous disciplinary boundaries and fully justified its existence. It now serves as an umbrella discipline for researchers in many areas of psychology.

For a number of years the division has had a sub-committee devoted to providing a place for evolutionary psychology within APA. This year the chair of that committee—**Jason Young** (Hunter College CUNY)—has teamed up with **Nancy Segal** (California State University) to put together this years program. These two individuals provide an excellent example of how evolutionary psychology attracts investigators with quite diverse research interests. Jason Young was trained in social psychology and has interests in social cognition, political psychology and media studies. Nancy Segal was trained by an advisor with a research focus in psychoanalysis and ethology and she has interests in behavior genetics, social genetics, developmental psychology, individual differences, human ethology, and everything and anything (social and biological) having to do with twins. Another example of how an evolutionary approach brings together investigators with quite diverse backgrounds is the team of **Steven Gangestad** (social psychologist) and **Randy Thornhill** (entomologists) who have produced an interesting body of work on human facial attractiveness, developmental stability, and fluctuating asymmetry.

Mentioning Steven Gangestad brings to mind the not widely known fact that social psychologists have been a driving force behind the development of this discipline, a surprising fact in my mind even though I was trained in social/personality psychology. This particular facet of the evolution of the discipline has not, to my knowledge, been well documented. Perhaps one of our members could take on the task. A nice example of the important role social psychologists have played in the development of this discipline is provided by the new book, *The Evolution of Mind: Fundamental Questions and Controversies,* edited by two Social Psychologists, Steven W. Gangestad and **Jeffry A Simpson** (The Guilford Press, 2007). I highly recommend this book to anyone with an interest in this field. The editors used a novel approach in structuring the book. They identified 12 fundamental controversies and asked each of the authors to address a few of the pertinent issues in a short (@ 2000 words) essay. They were successful. The essays are short, incisive and extremely informative. (Disclaimer, both editors were superb students at Minnesota and Jeff is now a colleague, so I cannot be considered unbiased in my recommending this book.)

I can't resist bringing to your attention the fact that our flagship journal, *Review of General Psychology* has been a venue for work in evolutionary psychology since it's founding. The journal is our "Jewel in the Crown" and continues to be very successful thanks to the superb editing by **Douglas K. Candland.** You are reading this in another of our success stories. *The General Psychologist* is now the very best non-journal publication produced by any of the APA divisions. It has gone well beyond the status of a "newsletter" and is so useful, informative and downright interesting that we believe it has a novel status and we do not know what to call it. All of this is due, of course, to the superb editing of Bob Johnson.

Another issue of considerable importance to all psychologists, whether they realize it or not, is the pervasive, and many believe "stifling" impact of Internal Review Boards (IRBs) on our discipline. There is now an "IRB Industrial Complex" and it is growing by leaps and bounds. This problem is not unique to psychology as it afflicts all of the social/behavioral sciences and it is beginning to impact the humanities as well (See http://institutionalreviewblog.blogspot.com/2008/02/aahrpp-calls-for-research-on-irbs-and.html). Mission creep is rapidly expanding the scope of the authority of IRBs and many believe that IRB rulings are changing the nature of social science research in fundamental ways. This issue deserves far more discussion than it has received.

Following up on superb presentations regarding the abuses inflicted on investigators by Institutional Review Boards (IRB's) at the 2007 APA meeting, the Division 1 IRB committee (Chair **Richard O'Brien,** Co-Chair **John Mueller**) is scheduling an important presentation for the 2008 meeting. For those who might be interested in pursuing this issue further John Mueller has a nice web site devoted to this topic: http://mueller.educ.ucalgary.ca/research-ethics.html.

A final note: Membership is the lifeblood of any division and our membership, along with that of many other divisions, is declining. If you know of any colleagues who are prospective members of the division please send them a copy of this edition of *The General Psychologist* with a brief note urging them to also take a look at the *Review of General Psychology* and consider joining the division.

INTRODUCING.... President-Elect Donald A. Dewsbury

Donald A. Dewsbury was born in Brooklyn, NY and grew up on Long Island. He attended Wantagh High School and then spent four years at Bucknell University in Pennsylvania, graduating with an A.B. degree in psychology in 1961. He continued on to the University of Michigan, receiving a PhD in psychology supervised by Edward L. Walker four years later. This was followed by a postdoctoral fellowship with Frank A. Beach at the University of California, Berkeley for a year.

In the Fall of 1966 he joined the faculty of the Department of Psychology at the University of Florida and served as an assistant professor (1966), associate professor (1970), and full professor (1973). He was the acting department chair in 1980. He taught at UF for 41 years and retired from teaching in the summer of 2007. However, that was a retirement only from teaching and he remains active in research and professional affairs.

His research for the first 25 years of his faculty career was in the field of comparative animal behavior studies with an emphasis on social and reproductive behavior of rodents. This research received 25 consecutive years of support from the National Science Foundation.

He then changed his emphasis to the history of psychology, albeit with an emphasis on comparative and experimental psychology. His foci are concerned with such matters as the careers of individual psychologists, research facilities, academic organizations, and patronage for research. Among current projects are studies of the history of the behavior program at the Jackson laboratory, the research of John Watson and Karl Lashley on the acquisition of skill in archery, work on the early primate research at the University of Pennsylvania, co-editing a second volume of autobiographies in *Leaders in the Study of Animal Behavior*, and editing a special issue of the *American Psychologist* for the bicentennial of the birth of Charles Darwin for February 2009.

He has written or edited 16 book volumes and published over 350 articles and chapters. He is a fellow of the Animal Behavior Society, AAAS, and APS, and a member of several other organizations. He has been president of the Animal Behavior Society and of three divisions of the American Psychological Association (1, 6, and 26). He is a fellow of 5 divisions (1, 2, 3, 6, and 26). In the APA he has served on the Council of Representatives, the Committee on Animal Research and Experimentation, and as historian/archivist for Divisions 1, 6, and 26.

Donald Dewsbury

He has received the University of Florida Sigma Xi Senior Research Award (1997), the Animal Behavior Society Exemplar Award (1998), the Clifford T. Morgan Distinguished Service to Division 6 Award (1998), and the Animal Behavior Society Exceptional Service Award (2003).

He leads a rich family life with a wife, two grown children, and one grandson. Outside of his career and family he enjoys opera, baseball, jazz concerts, and amateur photography.

The 2008 Division Leadership Conference

I spent the weekend of January 25-27 at the Division Leadership Conference, bringing together the division presidents-elect, in DC. We were treated and fed well. Even though I have previously been president of two other divisions, it was a good opportunity to make personal contacts and to learn some things that I did not know or have changed in recent years.

The program included an interesting and impressive talk from president Alan Kazdin, a description of CODAPAR (the Committee on Division/APA Relations), remarks from president-elect James Bray, CEO Norman Anderson's overview of APA, a plenary session on the nuts and bolts of working with APA, a set of breakout sessions on various topics, a talk on how to be a division president, information on inter-division grants. The Sunday program included a session on legal matters and discussions of media presentations and the convention. All were informative but I will highlight a few.

An interesting session concerned the redesign of the APA web site. Although some have criticized the budget for the project, it will be a massive job bringing some 44 different sites together as one. The SEARCH option should become more inclusive and useful than with the present design. One issue concerns whether divisions would support an effort to have all division web sites built on a common template so that one could find the basics (newsletter, membership, officers, etc.) in the same place on each. Divisions would be free to add their unique content as desired. This is not in the current plan but the divisions seemed generally to support it and presenter Toby Habash, the APA Chief Information Officer, seemed agreeable. As of now the SEARCH function would not include material on the division web sites as each will be independent, though there will be links to those sites.

Unscheduled presentations were made advocating the recently failed attempts to add representatives of several groups of minority psychologists to the APA Council of Representatives.

There is a fairly straight-forward written report of a committee trying to improve the convention. Independent of this, the proposal that I found rather distressing was that president-elect Bray wants to ask divisions to contribute 1/3 of their program hours toward centrally determined themes. That proposal was greeted with a rather considerable lack of enthusiasm among the people with whom I talked. Most divisions feel squeezed for program hours and are skeptical of the value of centrally mandated programs. Various centralized formats have been tried in the past and failed. Personally, I am a strong believer in divisions and in division-organized programs. I favor strong collaboration among divisions but only that which emerges from within divisions rather than that which is imposed from above.

Overall, I thought it was a worthwhile meeting with lots of opportunity to network and learn some new ropes.

—Don Dewsbury

Division One Executive Committee
Fall Retreat
November 17-18, 2008

The meeting was opened by Tom Bouchard at 9:25 am, November 17, at the Home of Rivka and Michael Meir in Fort Lee, New Jersey. In attendance were Tom Bouchard - President; Don Dewsbury – President Elect; Harold Takooshian – Immediate Past President; Bonnie Strickland – Past President; Dick Meegan – Secretary/Treasurer; Nancy Segal – 2008 Convention Program Co-Chair; Jason Young – 2008 Convention Program Co-Chair; Laura Meegan, Webmaster & Listmaster; Rivka Meir – 2007 Convention Program Chair; Gloria Gottsegen – Handbook Editor; Frank Farley – Interested Party; Michael Meir – Host, Interested Party.

Agenda & Minutes

1. **2008 Convention – Nancy Segal and Jason Young**

   A discussion centered on the issue of a hospitality suite for two nights at the convention. A discussion centered on using the suite to welcome poster presenters and possibly using it for the new fellows' reception. Nancy and Jason will make the final decision.

   Poster submissions for the poster session will be encouraged to expand our offering and attract new members. A Program Planning Document will be added to the handbook for use by future chairs.

   Further discussions were held relative to the structure for the Business Meeting, the Presidential Address, Executive Committee meeting and Awards sessions.

2. **Publications**

   Tom Bouchard discussed the success and quality of the division journal. Tom suggested that we should not sell the journal to the APA as it is a successful financial endeavor. Tom will work with APA to ensure that they continue to provide us with financial statements twice a year.

   Don Dewsbury discussed the *Portraits in Psychology* book series. He pointed out that the amount of money we have to pay to cover the development of the series is getting high. Don proposed that we provide the series electronically. Michael Wertheimer has made contact with APA books to explore this possibility. In order to develop contracts and copy right clearances for publication, there has to be coordination with APA Books and Baker and Francis Publisher. Don will continue working on this project.

   Harold discussed a review of our journals and found that members seem to be very pleased with both *TGP* and the *Review of General Psychology*. The work of Bob Johnson *(TGP)* and Doug Candland was praised. The treasurer will work with Doug to determine if his stipends up to date in payment from the division.

3. **Membership**

   Brian Stagner's report was reviewed and accepted. Rivka Meir was appointed to the position of Chair of the Outreach committee. She will make contact with other groups and on ways of bringing more members to Division 1. She will use her experience in Division 52 to help her with this task. She will also research with APA to find out if there are members who, for whatever reason, are not receiving our journal. She will report her findings at the business meeting in August.

4. **Awards**

   The reports from Nancy Russo and Bob Johnson were reviewed. Bob Johnson suggested in his report that the division send award winners to regional meetings and pay their expenses. The Awards Committee would administer this program. The compensation was discussed and it was decided to make this apply specifically to the Hilgard

Award winner. They would be paid a stipend of $1,000 for a regional meeting, $1,200 for the APA meeting. They must notify the treasurer of their intention to attend a meeting before requesting the stipend. It was voted to undergo a two year trial period for this program, with a review to be scheduled in 2010.

It was voted to increase the stipend of the Miller and James award recipients to $1,200 for 2009.

Tom asked that board members submit names for new fellows of the division.

At Tom's suggestion, it was voted to institute runners-up awards for the James and Miler awards. The recipients will be awarded certificates.

Harold proposed that an award be established in honor of Anne Anastasi, provided her estate would approve. It was voted to have Harold pursue this possibility with the Anastasi Foundation and report back to the annual meeting in August.

5. Webmaster

Matthew Goodwin has asked to step down form this position so that he can focus more on his dissertation. It was voted to appoint Laura Meegan to this position.

6. Treasurer's Responsibilities

It was voted to amend the duties of the treasurer so that the outgoing treasurer (their term of office ending at the annual meeting) will be responsible to deal with the financial tax reporting requirements of APA at the end of each calendar year. The reason for this change is that the outgoing treasurer would be in a better position to reconcile accounts for the 8-9 months that they were in charge of accounts.

7. Handbook

Gloria Gottsegen reported that she has created a prototype handbook based on the work she did for the Division 52 Handbook. Gloria will act as compiler and editor of the handbook. She has requested that all chairs and officers send on to her information that they believe should be included in the manual.

It was moved by Dick Meegan and seconded by Frank Farley and voted by the committee to provide Gloria a one-time $500 stipend in recognition of the large amount of time required to put the handbook together.

8. Reimbursement Policy

Harold will write up a policy relating to what expenses of the Executive Committee members will be reimbursed. This will be voted on at the August meeting. A motion was made by Don Dewsbury and seconded by Dick Meegan to reimburse Executive Committee members for the cost of registration at the annual meeting. Frank Farley moved to table the motion until August. The motion to table passed.

9. CODAPAR (Committee on Division/APA Relations)

At the December '07 meeting, the CODAPAR board will vote to provide a list of fellows available for speaking engagements in various geographic areas.

10. Reorganization of APA Council

Bonnie Strickland reported that 75% of the APA Council members are practice oriented. A committee has been appointed to look at means of making the membership in the council more balanced between practice and research orientations. She pointed out that the actual membership in the APA is about 50/50 in terms of practice and research.

11. IRB (Institutional Review Board) Committee

Tom Bouchard reported that the need for IRB approval limits the amount of research that can be done by many institutions. A discussion about the issue followed.

The meeting adjourned at noon on Sunday, November 18, 2008.

Richard Meegan, Secretary/Treasurer

APA Council of Representatives Meeting

by Bonnie R. Strickland, University of Massachusetts

The 2008 Spring Council meeting was held in Washington, DC February 22-24. A plenary session and a number of Caucuses met prior to the Business Meeting. I attended meetings of the Coalition for Academic, Scientific, and Applied-research Psychology and the Women's Caucus.

CEO Norman Anderson gave an update on the status of the Association. Our membership remains strong with about 145,000 members including 42,000 student affiliates. This figure has been steady for the last twelve years. Our difficulty in attracting and retraining early career professionals is a continuing problem for the Association with serious implications for the future. The Membership Committee has been restructured into a Membership Board and various committees and task forces have been established to examine the problems and identify ways to recruit and serve younger psychologists. Dr. Anderson also discussed the status of the Strategic Action Plan. Consultants have been hired and the Council actually spent some time of its meeting collecting data as to the Council Representatives expectations about a new mission statement.

APA continues to be financially strong. Our two buildings close to Capital Hill are valued at $290M with $125M in equity. They are fully rented with long term contracts and generate a steady revenue stream. We have $72M in our investment portfolio and although markets declined last year we have an annualized growth rate of 13.65%. The 2007 operating budget was approximately $105M. The 2008 operating budget will be close to $114M .

Dr. Anderson noted the recruitment of Archie Turner as our new Chief Financial Officer and Katherine Nordal as Director of the Practice Directorate. He gave an update of our initiative to consolidate, integrate, expand and upgrade the various APA websites into a single site that will be user friendly and the portal to the world of psychology for both APA members and the general public (www.apa.org).

President Alan Kazdin announced his Presidential Initiatives. They are Interpersonal Violence in Relationships, Psychological Science's Contributions to the Great Challenges of Society, and Post-traumatic Stress Disorder and Trauma in Children and Adolescents. The Convention theme is Clinical Practice and Science Integration and an attention to Hate Crimes.

Bonnie Strickland

Council conducted its regular business meeting. In addition to various house keeping items such as updating the language of the Bylaws, approving the budget, and approving the August minutes, a number of agenda items was discussed. Below is a listing of some of the important decisions.

Council had approved 4 new seats to be allocated to representatives from psychological organizations representing the interests of ethnic psychologists (i.e., the Association of Black Psychologists, and groups representing Asian American Psychologists, Hispanic/Latino psychologists and American Indian psychologists). This required a Bylaw change which was sent to the membership where it failed by a very slight margin. Council determined that they will return the Bylaw to the membership for a vote following an educational campaign.

The Council Resolution Against Torture and Other Cruel, Inhuman, and Degrading Treatment or Punishment continues to be a source of concern for some of our members. In an effort to clarify the Resolution, Council voted to rescind the original wording of one of the paragraphs and substitute the following:

> BE IT RESOLVED that this unequivocal condemnation includes all techniques considered torture or cruel, inhuman or degrading treatment or punishment under the United Nations Convention Against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment; the Geneva Conventions; the Principles of Medical Ethics Relevant to the Role of Health Personnel, Particularly Physicians in the Protection Of Prisoners and Detainees against Torture

Council Report…

and Other Cruel, Inhuman or Degrading Treatment or Punishment; the Basic Principles for the Treatment of Prisoners; or the World Medical Association Declaration of Tokyo. An absolute prohibition against the following techniques therefore arises from, is understood in the context of, and is interpreted according to these texts: mock executions; water-boarding of any other form of simulated drowning or suffocation; sexual humiliation; rape; cultural or religious humiliation; exploitation of fears, phobias or psychopathology; induced hypothermia; the use of psychotropic drugs; or mind-altering substances; hooding; forced nakedness; stress positions; the use of dogs to threaten or intimidate; physical assault including slapping or shaking; exposure to extreme heat or cold; threats of harm or death; isolation; sensory deprivation and over-stimulation; sleep deprivation; or the threatened use of any of the above techniques to an individual or to members of an individual's family. Psychologists are absolutely prohibited from knowingly planning, designing, participating in or assisting in the use of all condemned techniques at an time in the use of all condemned techniques at any time and may not enlist others to employ these techniques in order to circumvent this resolution's prohibition.

Council passed a motion that the APAGS Representative on the Board of Directors should have voting privileges. Council approved permanent status for the Division of Trauma Psychology. It now has over a thousand members, is beginning a journal, and has responded to a number of various issues.

Council approved adding Territorial after State and Provincial Associations throughout the language of the APA Bylaws and Association Rules.

A luncheon meeting was held for interested Council Representatives who wished to provide input to the Task Force on Restructuring Council.

Council Representatives involved themselves in "break-out" groups to consider how individuals in the governance structure may better communicate with and receive input from members.

Respectfully submitted,

Bonnie Strickland

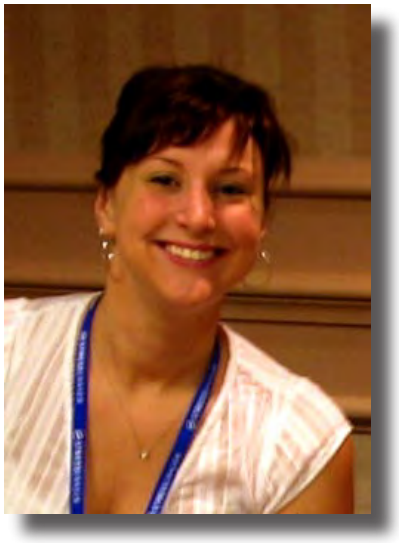
Division 1 Council Representative

New Division One Webmaster

We say, "Thank you!" for a job well done and a hearty "Farewell!" to **Matthew Goodwin**, who is passing the Webmaster job for Division One on to **Laura S. Meegan,** MA, NCC.

Laura received her BA in Psychology from the University of Massachusetts at Amherst in 2001 where she studied under Dr. Bonnie Strickland and first became involved with the APA. She received her MA in Counseling Psychology from the University of Denver in 2004. Laura is a Board-Certified Mental Health Counselor and practices in Massachusetts in both in-patient and out-patient settings specializing in severely mentally ill adolescents and forensic psychology.

As a Master's level early career therapist, Laura hopes the Division 1 website can be a user-friendly tool for psychology professionals of all levels and interests. Laura's goal is that the website will encourage early career professionals to join the division and become active in APA as well.



Laura Meegan

Ad Hoc Committees of the Society for General Psychology

In 1945, APA saved itself from spontaneous fission by forming fourteen specialty divisions—wisely designating the very first as the division of General Psychology. In the ensuing sixty-seven years, the role of Division One has been to identify pervasive topics and issues that transcend specialties. In this spirit, Division One formed several new committees in August, 2006, to examine issues that (a) impact psychology across specialties, (b) are relatively overlooked, or (c) may engage our younger colleagues or students. These committees are listed below.

The charge of each committee chair is to define the committee's mission, appoint a few Division One members to serve on it, including one early career psychologist (ECP), and to provide a report on its activities to *The General Psychologist*. In addition, it is hoped that some of the activities of these committees will turn into sessions at the APA convention. Members who would like to join a committee should contact the chair of the committee. Members who would like to chair or simply suggest a new committee topic should contact the current President of the division Thomas J. Bouchard, Jr. <bouch001@umn.edu> or the President-elect, Donald Dewsbury <dewsbury@ufl.edu>.

1. Early Career Psychologists - Chair: Matt Goodwin
Mission: Work with APAGS and others to recruit and engage students and ECPs in general psychology.

2. Coping with Technology - Chair: Richard S. Velayo
Mission: Examine the negative impacts of email and changing technology on the field of psychology (teaching, science, practice) and practical means of coping with technostress.

3. Humor - Chair: Joe Palladino
Mission: Examine humor in psychology as a topic of research, teaching, and fun. Goals: Sponsor a best-jokes contest, with award at APA.

4. National Speakers Bureau - Chair: Harold Takooshian
Mission: Use CODAPAR funds to identify convenient speakers for local student and community groups, by developing (in cooperation with Divisions 2 & 52, Psi Chi, Psi Beta, TOPSS) a web-based zip code list of willing Division One fellows, with their contact information and preferred topics. The division has applied for a second grant to continue this work.

5. Human-Animal Relations - Chair: (open)
Mission: Take a fresh look at human-animal interaction, as well as the diverse roles of animals across all of psychology (aside from learning and physiology research)—in areas such as therapy, companion animals.

6. IRB/Scientific Integrity - Chair: Richard O'Brien, Co-chair: John Mueller
Mission: Probe the impact of IRBs on science, scientists, and society, as well as academic freedom, junk science, and other trends threatening the integrity of the scientific enterprise.

7. Advisory Committee - Co-chairs: Bonnie Strickland, Harold Takooshian
Mission: Insure continuity within Division One, using a panel of past officers/presidents to help guide Division One procedures.

8. Publications - Chair Bruce Overmier. Committee members: Peter Salovey, Nancy Russo, Donald Dewsbury, Matt Goodwin
Mission: Oversee effective communication within the Society, coordinating *TGP, RGP,* book series, Website, listserv, and possible member serveys.

9. Evolutionary Psychology - Chair: Jason R. Young
Mission: Develop and give a home to this interdisciplinary specialty. In 2008 at the APA meeting Jason Young and Nancy Segal (Chair of the Program Committee) are planning to feature Evolutionary Psychology and Behavior Genetics.

10. Photography and Psychology - Chair: Joel Morgovsky
Mission: Seek out the many members of APA who are deeply involved with photography; become a networking hub and community of psychologist/photographers. This committee sponsored a excellent program at the 2007 APA convention.

11. Science and Practice - Chair: Mark Koltko-Rivera
Mark is developing an exciting research program that requires cooperation across much of psychology. It will be sponsored by Division. More information will be forthcomming shortly.

Officers of The Society for General Psychology

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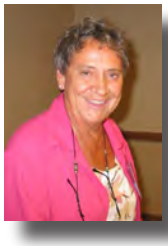

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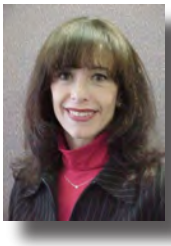

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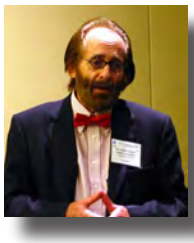

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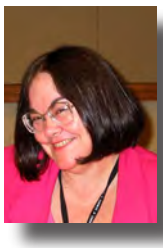

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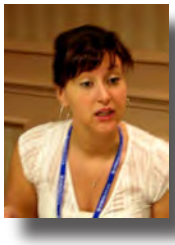

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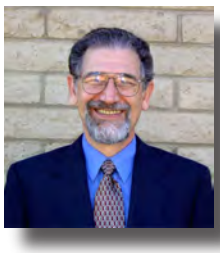

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2008 DIVISION ONE CONVENTION PROGRAM

Highlights

Invited Talk: ***Experimental Game Theory and Behavioral Genetics* – David Cesarini**, MIT and **Bjorn Wallace,** Stockholm School of Economics, Sweden; Chair: **Nancy Segal.**

Invited Talk: ***Prader-Willi Syndrome and the Evolution of Human Childhood*** – **David Haig,** Harvard University; Chair: **Nancy Segal.**

Symposium: ***Anastasi at 100---Her Impact on All of Psychology***. Presenters: **Jonathan Galente, Howard Everson, Jodi Casabianca, Mark Mattson, Thanos Patelis, John Hogan, Vincent Alfonso; Discussant: Michael Wertheimer;** Chair: **Harold Takooshian.**

Symposium: ***Basic Emotions—Cutting Nature at the Joint***. Presenters:: **Lisa Barrett, Jaak Panksepp, Rainier Reisenzein, Louise Sundararajan;** Discussant: **Marc Lewis;** Chair: **Louise K.W. Sundararajan.**

Symposium: ***Decision Making Through the Lens of Evolutionary Psychology.*** Participants: **Kristina Durante, Norman Li, James Roney, Nancy Segal, Joshua Ackerman, Sarah Hill;** Chair: **Sarah E. Hill.**

Symposium: ***Evolutionary Influences on Perception.*** Participants: **Anne Reagan, Amara Davis, Chingjung Huang, Wei Xiong, Jessica Belfy, Debby Cochrane** Chair: **Jason R. Young**

Symposium: ***Family Relationships in Evolutionary Perspective***. Participants: **Catherine Salmon, Richard Michalski, Aaron Goetz;** Discussant: **Shirley McGuire;** Chair: **Catherine Salmon.**

Symposium: ***The Old and the New---Behavioral Genetics and an Evolutionary View of Sexual Conflict.*** Presenters: **Donald Dewsbury, Aaron Goetz**; Chair: **Aaron Goetz.**

Presidential Address: ***Evolution of the Traditional Moral Virtues Triad—Authoritarianism, Religiousness, and Conservatism*** – **Thomas J. Bouchard, Jr.**, University of Minnesota.

2008 Division One Awards Addresses[1]

Mark Koltko-Rivera

Mark E. Koltko-Rivera: *2007 George A. Miller Award*

Dr. Rivera won the 2007 George A. Miller Award for the outstanding journal article in general psychology across specialty areas for "Rediscovering the Later Version of Maslow's Hierarchy of Needs," published in the *Review of General Psychology* (2006, pages 302-317). This article contains important, yet little-known, information on the "hierarchy of needs" model developed during the long career of Abraham Maslow (1908-1970). Maslow's later and posthumously-published papers made pivotal yet oft-overlooked changes to his five-step hierarchy, including the addition of stage 6, self-transcendence.

Koltko-Rivera has received other awards for his scholarly work, including the 2004 Miller Award for his article on "The Psychology of Worldviews" *(Review of General Psychology, 2004)*. He is affiliated with the Professional Services Group, in Winter Park, FL.

Nancy Eisenberg

Nancy Eisenberg: *2007 Ernest R. Hilgard Award for Career Contributions to General Psychology*

Dr. Nancy Eisenberg is a true exemplar of the criteria for the Ernest R. Hilgard Award for Career Contributions to General Psychology. Her major contributions span multiple fields including clinical, developmental, and social psychology. Her ground breaking research on children's socioemotional development, in particular, has brought diverse perspectives together to focus on development in a unified way. She has been the driving force in the emergence of the study of prosocial behavior and prosocial moral reasoning in children and of their empathy-related responding and emotion-related regulation. Dr. Eisenberg is regents Professor of Psychology at Arizona State University.

Gregory Feist

Gregory Feist: *2007 William James Book Award*

Dr. Gregory Feist won the 2007 William James Book Award for *The Psychology of Science and the Origins of the Scientific Mind*, published by Yale University Press in 2006. Dr. Feist is widely published in the domain of creativity and the development of scientific talent. His book builds on his previous work and integrates a large and diverse literature. He argues convincingly for an integrated study of the psychology of science. The first two-thirds of the book consists of an integration of the relevant fundamental findings from research in biological, developmental, cognitive, personality and social psychology. The last third of the book takes an evolutionary perspective, and attempts to track the origins and precursors of scientific thinking through the practice of modern science. The final chapter provides a thoughtful discussion of the relationships between science, pseudoscience, and antiscience, and the need to balance skepticism with belief.

[1] The awards addresses are delivered at the APA Convention in the year following the award.

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_____ APA Member (includes Fellows, Associates, and Affiliates): Membership is $25, including $16.50 for the journal, *Review of General Psychology*

_____ APA Dues-Exempt Member (also known as Life-Status Member): Division One member ship is free. To receive the *Review of General Psychology,* please submit $16.50.

_____ Student Affiliate of APA: Membership is $7.50. To receive *Review of General Psychology,* submit an additional $16.50, for a total of $24.

_____ Other Student: Membership is $7.50. To receive *Review of General Psychology,* submit an additional $16.50, for a total of $24.

_____ Professional Affiliate and International Affiliate: Membership is $7.50. To receive *Review of General Psychology,* submit an additional $16.50, for a total of $24.

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