

CHAPTER 1

KINSHIP: THE TIE THAT BINDS (DISCIPLINES)

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Abstract. As disciplines, evolutionary psychology and behavior genetics have independent—and even antagonistic—histories, assumptions, and methodologies. One point of intersection, however, is their mutual investment in, and reliance on, the concept of kinship. I argue that this mutual concern might serve as common ground supporting an interdisciplinary investigation into the developmental and evolutionary causes of individual differences. In particular, I argue that the statistical main effects reported by each discipline are not particularly illuminating, and that what is needed is a combined effort to unravel the nature of nurture—the rules of epigenesis. To this end I outline a research program which would: (a) identify traits for which heritable variations are adaptive, versus traits for which heritable variations are simply “genetic junk;” then (b) determine how both heritable and non-heritable differences map onto life history strategies.

(1) INTRODUCTION: A TALE OF TWO DISCIPLINES

“Evolutionary Psychology is Not Behavior Genetics”. So pronounces a section subheading of a recent discussion of evolutionary psychology (Cosmides & Tooby, 1997, p. 89). True, indeed. Evolutionary psychologists seek to explain behavior from an ultimate, phylogenetic perspective while behavior geneticists seek to explain behavior from a proximal, ontogenetic perspective. Evolutionary psychologists seek to identify and delineate the mechanisms underlying human universals (Buss, 1995; Cosmides, Tooby & Barkow, 1992; Pinker, 1994) while behavior geneticists seek to quantify human diversity and to identify the causes of that diversity (Gottlieb, 1995; Loehlin, 1989; Thiessen,

1972). As a result, evolutionary psychologists study cross-cultural similarities and focus on statistical means and main effects, while behavior geneticists study individual and group differences and focus on statistical variances and covariances (Bailey, 1998; Miller 2000a). Over the years, what has provided “wheat” for one discipline has generally been treated as “chaff” (or worse) by the other (Barash, 1997; Tooby & Cosmides 1990; Wilson 1994). In fact, it could easily be argued that these two disciplines represent paradigmatic extremes of the different ways of addressing the fundamental questions of psychology. Bailey (1995/1997) reported being able to find only six published studies that included both the word “evolution” and the phrase “behavior genetics” among their suggested index terms. Yet, despite a history of acrimony and debate between practitioners of these two disciplines, it is my belief that the most exciting vista in psychology today involves their interface and, ultimately, their integration.

In 1984, personality theorist David Buss published an essay in North America’s most widely-read psychology journal, *American Psychologist*, outlining the theoretical and methodological differences between research programs investigating the two fundamental and essential questions of psychology: “What is human nature?” and “What makes each individual unique?” In that essay, Buss made a plea for rapprochement between what could, both then and now, be considered to be two completely independent research programs.

Today the two paradigms can be typified by the labels “evolutionary psychology” and “behavior genetics,” respectively, but in fact, the schism between those studying species-typical behavior and those studying individual differences dates back to the beginnings of scientific psychology in the late nineteenth century (Jaynes, 1969). Even at that time, psychologists could be classified as belonging to one of two already-antagonistic groups: comparative psychologists and ethologists. Ironically, each had its roots in the Darwinian revolution, but each took something different from Darwin’s insights—with the result that we, their intellectual descendents, find ourselves at diverging points on two fundamentally different theoretical trajectories.

Comparative psychologists took from Darwin the idea that humans share a common ancestry with other animals, particularly mammals. This insight led to the notion that we could learn something about the human psyche by studying the behavior of other animals, and it paved the way for experimentation that could not be ethically or practically pursued using human subjects. Which species were studied didn’t matter to comparative psychologists, as long as we and they shared a

significant common heritage; the result is that, because of its popularity among animal fanciers in England at the time, *Rattus norvegicus*, the common "lab rat," became the animal of choice. Similarly, the setting in which an animal was housed, reared and studied was not considered to be of particular importance because both instinctive behavior and the "laws of learning" were thought to be fixed by heredity; thus appeared the experimental research lab with its breeding colonies, mazes and, eventually, Skinner boxes and t-tests.

Ethologists took from Darwin not the idea of a common heritage, but the idea that each species (or type) was adapted to its unique niche, and that variation in form (phenotype) covaried in a functional way with variation in the environment. Ethologists claimed that in order to study this adaptive variation, behavior had to be studied in a natural environment and in a developmental context; thus appeared the field study, naturalistic observations, longitudinal studies and, from Darwin's cousin, Francis Galton, the correlation statistic.

Even though both groups of investigators broadened their methods and scope to include more and more studies of our own species, throughout the twentieth century the philosophical distance between experimental and correlational psychology was maintained (Cronbach, 1975). When Buss published his essay in 1984, he concluded that while "the relations between important species-typical characteristics and important individual differences should be identified and their implications understood," the gulf between the two approaches was so large that rapprochement could be envisioned only in terms of increased cross-disciplinary communication and parallel, but not integrated, study.

Five years after Buss' essay (but notably, without citing it), Charles Crawford and Judith Anderson (1989) proffered a specific methodological approach for the study of adaptive "differences and similarities." They suggested using a Darwinian life-history framework and a quasi-experimental design that had previously been adopted only in studies of non-human animals. Although they, like Buss, published in *American Psychologist*, their essay included little in the way of examples relevant to human behavior, and the only version of their design which they suggested as being applicable to humans involved the difficult study of monozygotic (identical) twins reared apart (MZAs); as a consequence, their important message, like that of Buss, went largely unappreciated.

After almost five more years, in 1993, developmental psychologist Nancy Segal published an essay (again in *American Psychologist*)

exhorting psychologists to take advantage of not just the “natural experiment” of MZAs, but the wide variety of designs utilizing twins and other family constellations that had, to that point, been used fairly exclusively in the context of behavior genetics research. Segal provided as examples, studies that utilized family designs to test questions derived from what was, by then, labeled “evolutionary psychology” (Tooby & Cosmides, 1989).

Now, again with the passage of more than five years, the purpose of this essay is to show that the rapprochement between those who study species-typical behavior and those who study individual differences can entail more than just the parallel study envisioned by Buss; we have the means to achieve a total integration of these two, previously independent, research paradigms. The impending integration of the Darwinian life history approach (suggested by Crawford and Anderson) with the behavior genetic methodology (suggested by Segal) is poised to open a vast new space of possibilities for the study of both human nature and individual differences (see also Bailey, 1998; Buss & Greiling, 1999; Segal & MacDonald, 1998).

(2) COMMON GROUND: THE TIE THAT BINDS

Despite their real differences in philosophy and method, evolutionary psychologists and behavior geneticists are often perceived by others to be a single group with a unitary perspective. (It is this misperception that provided the motivation for the cautionary section subheading quoted at the beginning of this essay). The common perception of evolutionary psychology, like sociobiology before it, is that its emphasis on human universals invariably and inexorably leads to 1) a glossing over of important individual and group differences, and 2) attribution of any acknowledged differences to biological rather than to environmental sources (Barash, 1997; Dawkins, 1982; Plomin, DeFries, & McClearn, 1990; Thiessen, 1998). Likewise, the common perception of behavior genetics is that, while it focuses on differences rather than similarities, it, too, emphasizes biological as opposed to environmental “causes” of behavior (Bronfenbrenner & Ceci, 1994; Loehlin, 1989). Like all stereotypes, these perceptions have led to an oversimplified view of both disciplines and, because of their (presumed) shared emphasis on biological explanations, to the inaccurate categorizing of the two disciplines as one and the same.

One outcome of this stereotyping is the belief that both evolutionary psychology and behavior genetics are necessarily biologically de-

terminist. In fact, as Crawford and Anderson (1989) noted, the evolutionary perspective cries out for systematic study of environmental effects and, as Segal (1993) pointed out, behavior genetic methods need not remain restricted to the single task of partitioning and quantifying genetic “versus” environmental sources of variance. The potential of both disciplines to shed explanatory light on the role of environmental factors in cognitive and behavioral development is prodigious, yet generally ignored (Loehlin, 1989).

The route to realizing this potential lies in the one acknowledged bit of common ground shared by evolutionary psychologists and behavior geneticists: Albeit for different reasons, both acknowledge the critical role of genetic kinship. For evolutionary psychologists, kinship, via the effect of inclusive fitness (Hamilton, 1964), constitutes a core construct of relevance to all social interaction. A quick browse through any animal behavior, behavioral ecology or evolutionary psychology journal will yield a plethora of papers on familial interactions from pair bonding to divorce, parental investment to parent-offspring conflict, sibling cooperation to sibling rivalry. For behavior geneticists, analysis of kinship is the key to a set of methods used to disentangle the complex multiple interactions that constitute development. Kin interactions, while not, *per se*, the topic of behavior genetic investigation, are studied as a matter of course in the analysis of data from across the gamut of topics of interest to students of human behavior (e.g., Reiss, Plomin, Hetherington, Howe, Rovine, Tryon & Hagen, 1994).

Furthermore, from the perspective of both disciplines—and, for that matter, almost every discipline in the social sciences—kinship can be seen as the central feature in the unfolding of each individual’s life story. For the great majority of people, the family, in its various forms, is the most salient feature of the day-to-day environment (Salmon & Daly, 1996; Wilson & Daly, 1997; see also Emlen 1994, 1995). Kinship, the tie that binds, represents the common ground between social science disciplines (Daly, Salmon & Wilson, 1997). As such, it can provide the basis to forge new collaborative links and develop a fresh approach to the study of the role of the environment in the production of both human universals and individual differences (Fuller, 1983).

(3) CURRENT GROUND: THE STATE OF THE UNION

In a 1995 address (see 1995/1997), Bailey presented a fairly non-controversial answer to the once-controversial question: “To what ex-

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