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BEHAVIORAL RESEARCH ON AID-GIVING THAT CAN ASSIST LAWMAKERS WHILE TESTING SCIENTIFIC THEORY

*John H. Beckstrom**

I. INTRODUCTION

There is increasing appreciation for the contributions that empirical research can make to the legal process¹ and many have encouraged legal academics to become more actively involved in such research.² There are major obstacles to that involvement, however.³ Few lawyers possess the skills necessary for sophisticated field research. Furthermore, the reward structure of legal academia tends at present to discourage the acquisition of such skills or their application when possessed. The law school world is not well attuned to the time and energy requirements of empirical field research. Typically, several articles resulting from traditional legal library research on legislation and reported court decisions can be produced in the time that it takes to plan, execute, analyze and report on one field project with legal orientation. And there is a tendency to pay considerable attention to the absolute number of articles or pages produced when scholarly production in law schools is assessed.⁴

One would hope that the demands and contributions of legal empirical research will receive greater recognition and credit in the legal community in

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1. See *Debunking Litigation Magic*, NEWSWEEK, Nov. 21, 1983, at 98 (describing a report of Wisconsin's Civil Litigation Research Project as having "more than academic interest; it may change some perceptions of the courts and rechannel demands for reform").

2. E.g., Harvard President Derek C. Bok, a former law professor, in his 1983 Report to the Board of Overseers of Harvard College, stated that law faculties "lag far behind their counterparts in medicine and other fields in using the tools of social science which might lead to a more enlightened legal system" and "[w]e ignore the social sciences at our peril, for their techniques grow steadily more refined." N.Y. Times, Apr. 22, 1983, at 11, Cols. 1, 3 (Midwest ed.).

3. See generally Priest, *Social Science Theory and Legal Education: The Law School as University*, 33 J. LEGAL EDUC. 437 (1983).

4. See Ellman, *A Comparison of Law Faculty Production in Leading Law Reviews*, 33 J. LEGAL EDUC. 681, 687 (1983), where the author ranks law faculties based on criteria such as total pages produced, with the notation that there were no "distinctions made as to the type of piece or its contents."

the future. Until that time we cannot expect large numbers of people to invest the time and resources necessary to acquire the social science *and* legal skills required for legal empirical research and then attend to the library and field aspects of such research. In the meantime, however, an alternative exists for promoting empirical research that has a pay-off for substantive legal issues. That alternative is to encourage "pure" behavioral scientists who are testing theories in their specialties to do their work in areas where their research can be of incidental value to the law. This article focuses upon the potential for such research in connection with a scientific specialty of recent origin.

A substantial number of scientists are currently working to test a theory that suggests we have been biologically predisposed by the processes of evolution to aid people around us in predictable patterns depending upon our relationship to those people and upon the signals we receive from our environment. Empirical research on typical behavior of a population sample in response to an environmental fact pattern can tend to either prove or disprove the theory.

The theory concerning aid-giving to which I have referred is a keystone concept in the subdiscipline of evolutionary biology called sociobiology. Since sociobiology first came into the public limelight in the mid 1970's, there has been an avalanche of books on the subject.⁵

Sociobiology must be classified as a developing theory at present, although confirmations of basic concepts exist in human behavioral research as well as in common sense impressions. But whether sociobiological theorists are correct in any particular or whether any piece of behavioral research tends to support them is not important for those who may be interested in whatever the research shows as to *actual* behavioral patterns of the population. Lawyers have an interest in actual aid-giving tendencies. This interest lies in several areas of the law that have occurred to this writer. I will presently outline three of them. But here let me take an illustration from an area of the law that I will not otherwise mention in this article as I have related it to sociobiology in an extensive manner in an earlier article.⁶ Every state in the United States has laws providing for the manner of disposition of the property of people who die without a will. One of the main objectives of these laws is to dispose of the property in the manner that the *average* person

5. The uninitiated reader might best begin familiarization with R. DAWKINS, *THE SELFISH GENE* (1976), then read E. WILSON, *ON HUMAN NATURE* (1978), followed by R. ALEXANDER, *DARWINISM AND HUMAN AFFAIRS* (1979) and C. LUMSDEN & E. WILSON, *PROMETHEAN FIRE* (1983).

6. See generally Beckstrom, *Sociobiology and Intestate Wealth Transfers*, 76 NW. U.L. REV. 216 (1981).

dying without a will would want it done. This has resulted in the relatives of the deceased being preferred in certain orders of priority that amount to rules of law.

These and other rules of law concerning human aid-giving tendencies have traditionally been fashioned by lawmakers from their personal experiences or visceral impressions.⁷ At one time there was little alternative to that. But today social science has developed techniques that can measure and quantify patterns in large samplings of the population so as to report average or typical attitudes and behavior. Lawmakers should welcome such reports when they involve fact patterns where human aid-giving tendencies are important to the law.

The objective then is to encourage scientists to work with fact patterns that will provide a test for their theory while producing data of use in the law. Invitations and expertise from the legal community are needed and contributions from the legal side to research funds would surely be useful. An initial step toward such cooperative enterprise is to introduce scientists and lawyers to the types of questions that involve an overlap of their interests. That is the objective of this article.

I will first outline the relevant theory and then illustrate how it might be tested in contexts where the reports would be of use to lawmakers. The contexts will be drawn from the law of torts (bystander recovery of damages for emotional distress from observing someone being injured), evidence (impeachment for bias of the testimony of identical twins), and the family (interparental child custody disputes).

Sociobiological theory is more precisely a cluster of similar theoretical positions that are still under development. I will attempt to track the positions relating to fundamental aid-giving tendencies upon which a consensus developed among sociobiologists in the 1970's.⁸ Thorough explanations of the theory involve complex scientific concepts and mathematical formulae and require a thick book format. I can merely outline the relevant aspects of the

7. The draftsmen of the fairly recent Uniform Probate Code sections on the devolution of the property of people who die without a will had available empirical studies of how people gave their property by will, which is at least analogous. Mulder, *Intestate Succession Under the Uniform Probate Code*, 3 PROSPECTUS 301, 304 n.9 (1970).

8. There is considerable recent thinking concerning the "coevolution" of genes and culture in humans that has not been elucidated to the point where it can be applied to legal problems of the type outlined in this article. For a summary of these developments, see C. LUMSDEN & E. WILSON, PROMETHEAN FIRE 44-50 (1983). But there is general agreement that broad central tendencies in human behavior of the sort dealt with in this article can be predicted to a limited extent by using sociobiological concepts as originally formulated. *Id.* at 44-45.

fundamental theory in this article.⁹ When attempting to outline the theory to lay audiences it has become common to use metaphors and other verbal shortcuts.¹⁰ I will do that here with an occasional addition of detail and caveats by use of substantive footnotes. I urge the lay reader not to judge the cogency of the theory without looking into it further.

II. THE BIOLOGICAL BASIS FOR AIDING RELATIVES

We can begin our outline with the concept that human beings, as well as all other living organisms, can be thought of as vehicles by which the genetic material they contain passes from one generation to the next. We have been programmed by the processes of evolution optimally to reproduce our genes.

Thus, sociobiologists theorize that most of our behavior is, consciously or unconsciously, to a greater or lesser degree directed towards reproducing our genes. This has implications beyond conduct that could promote personal reproduction due to the fact that other humans contain in varying degrees, depending upon our relationship to them, the *same* genetic material that we contain. By aiding our close relatives, with whom we have a high percentage of genetic overlap, we promote the reproduction of our genes. For example, a child contains fifty percent of the genetic material of each parent. Geneticists express relationships in terms of fractions.¹¹ We are related to our children by one-half. For most of us, as far as our genes are concerned, the next best thing to our reproducing personally is to have our children reproduce. We can personally produce offspring genetically related to us by one-half. Our children can produce offspring genetically related to us by one-fourth. I said that, for *most* of us, having our children reproduce is the next best thing, as far as our genes are concerned, to reproducing ourselves. For those few who are identical twins, the next best thing, if not an equivalence, is having the other twin reproduce. Identical twins contain 100% of the same genetic material.

9. See, e.g., C. LUMSDEN & E. WILSON, *GENES, MIND AND CULTURE* (1981), which was, in effect, translated into standard English in C. LUMSDEN & E. WILSON, *PROMETHEAN FIRE* (1983).

10. See, e.g., R. DAWKINS, *THE SELFISH GENE* (1976).

11. In computing genetic relatedness the focus is upon genes that are family-specific; that is, they are relatively rare in the population as a whole but common within a family. The fractions used generally represent averages. For example, brothers and sisters are taken to be related by 1/2. There is a 50% chance that your sister or brother has any particular familial gene that you have. If you had 100 brothers and sisters, approximately 50 of them would contain any particular familial gene that you have. See generally R. ALEXANDER, *supra* note 5, at 44, 45, 130 and R. DAWKINS, *supra* note 10, at 97-100. As all topics in this article focus on the average or typical person in large samples, for convenience I will express relationships between all relatives as if they were exact percentages.

But for most of us who have siblings, the siblings are related to us by one-half and can produce offspring related to us by one-fourth, just as our children can. However, our brothers and sisters are normally one generation older than our children, so they have less time within which to reproduce and nurture offspring who contain our genes. Thus, sociobiologists theorize that in the usual case we should be inclined to aid our children before our siblings if we must make a choice.¹² But we should normally be inclined to aid our siblings before our cousins though they may be the same age. The cousins, being related by one-fourth, can only produce and nurture offspring related to us by one-eighth; we already noted that siblings (one-half) can produce and nurture offspring related by one-fourth. Calculations of this sort can be done for all relatives.

But the process is much more complicated than the above would suggest. The calculations regarding aid-giving propensities can be affected by idiosyncracies in any particular case. A child may be obviously unable to reproduce, for example, while a cousin is capable in that regard. And the generational difference factor can be affected, for example, when a person has a child who is the same age as or older than a sibling.

Furthermore, there is another factor operating in our aid-giving inclinations. Many scientists call it "reciprocal altruism."¹³ Reciprocal altruism fits into our conscious or unconscious calculations concerning aid-giving. It prompts us to aid people (relatives or strangers) when we believe that we—or ultimately our genes in whatever being they might be lodged—are likely to get a return benefit.¹⁴ Finally, and very significantly, our basic aid-giving inclinations are affected by, and mix with, our environment and culture to produce our aid-giving behavior in any instance.

In spite of all these variation producing factors, sociobiologists are willing to predict average patterns of aid-giving inclinations toward relatives in large population samples. Where the sample is large enough, idiosyncracies "wash out." In a large population sample, for every unhealthy child, there will be an unhealthy sibling, for example. And for every ingrate brother who is unlikely to return a favor, there is an ingrate father. Similarly, when there are extreme variations in environment or culture, the extremes will balance each other when the population sample is large and dispersed.

To test the aid-giving theory of sociobiology, scientists generally look at samplings that are as large as resources permit to see if their predictions

12. R. DAWKINS, *supra* note 10, at 102-03.

13. TRIVERS, *The Evolution of Reciprocal Altruism*, in READINGS IN SOCIOBIOLOGY 189 (T. Clutton-Brock & P. Harvey eds. 1978).

14. *Id.*

appear in the data. The predictions are couched in terms of what the *average* or *typical* person with a given profile of personal characteristics will do in a given situation. This allows for differences in behavior or attitudes based upon idiosyncracies, the principles of reciprocal altruism and extremes of environment and culture that exist in the population sample. If the behavior or attitude of the average person in the sample accords with the prediction, it is taken as being supportive of the theory. If not, it is not.

This is where the interests of lawyers come in. Whatever the outcome of the research as far as the theory is concerned, the empirical evidence itself can be of value to lawmakers if the research design is appropriately fashioned. Let me illustrate this by moving into a legal context.

III. THE RECOVERY OF DAMAGES FOR EMOTIONAL DISTRESS BY BYSTANDERS WHO WITNESS A PERSON BEING INJURED

Following the lead of a 1968 California decision,¹⁵ the highest courts in several states have, in recent years, permitted people to maintain an action for damages for emotional distress when, from a distance, they observe another person receiving a bodily injury wrongfully inflicted by a third party. There has been much hesitancy among the courts in taking this step largely because of the difficulty of disproving alleged emotional damages.¹⁶ When the plaintiff has received a physical impact, or at least been in the zone of danger created by the wrongful act, there is some assurance that the alleged attendant emotional distress is genuine. When those additional facts are not present the assurance they provide dissolves. Some substitute for that assurance has been provided, however, by the fact that virtually all of the cases approving of the action to date have involved bystanders who were close relatives of the victim.¹⁷ The Iowa Supreme Court has very recently taken the step of circumscribing the relatives who can recover for emotional damages from observing someone being wrongfully impacted.¹⁸ The recovery in

15. *Dillon v. Legg*, 68 Cal. 2d 728, 441 P.2d 912, 69 Cal. Rptr. 72 (1968).

16. *E.g.*, *Tobin v. Grossman*, 24 N.Y. 2d 609, 615, 249 N.E.2d 419, 422, 301 N.Y.S. 2d 554, 558 (1969).

17. *Dillon v. Legg*, 68 Cal. 2d 728, 441 P.2d 912, 69 Cal. Rptr. 72 (1968); *Barnhill v. Davis*, 300 N.W.2d 104 (Iowa 1981); *Dziokonski v. Babineau*, 375 Mass. 555, 380 N.E.2d 1295 (1978); *Toms v. McConnell*, 45 Mich. App. 647, 207 N.W.2d 140 (1973); *Versland v. Caron Transport*, 671 P.2d 583 (Mont. 1983); *Corso v. Merrill*, 119 N.H. 647, 406 A.2d 300 (1979); *Sinn v. Burd*, 486 Pa. 146, 404 A.2d 672 (1979); *D'Ambra v. United States*, 114 R.I. 643, 338 A.2d 524 (1975). *But cf.* *Leong v. Takasaki*, 55 Hawaii 398, 520 P.2d 758 (1974) (stepgrandmother).

18. *Barnhill v. Davis*, 300 N.W.2d 104, 108 (Iowa 1981). After observing, *inter alia*, that (1) a negligent defendant should only be liable for consequences of his act which an ordinary person could reasonably foresee and (2) that it is important to have some guarantee of the genuineness of claims, the court sets out five elements of a bystander's claim in Iowa including

Iowa by bystanders for emotional damages is limited to the circle of close relatives delineated by the court.

The courts seem to be of the impression that people are more likely to be severely affected emotionally when they observe a close relative in danger than when the endangered person is a distant relative or a stranger. This comports with sociobiological theory. The aid-giving inclinations that the theory describes translate into concern for the welfare of close relatives. If we have been programmed to aid a person with whom we have a high degree of genetic overlap, when we observe that person imperiled we should react in much the same way as we react when we ourselves are imperiled.¹⁹ Our nervous system is triggered into extreme alertness to prepare us to avoid dangers to our person that arise²⁰ and lingering after-effects such as nervous tension, preoccupation and sleeplessness are common experiences.²¹ When a typical mother observes her child (related by one-half) imperiled we hardly need sociobiological theory to make us suspect that her body reacts much the same as when she is personally endangered.²² The reactions should be

the requirement that "[t]he bystander and the victim were husband and wife or related within the second degree of consanguinity or affinity." *Id.* at 108. Iowa employs what is termed the "civil law" method of computing degrees of kinship for this purpose. Letter to the author from Justice A.A. McGivern of the Iowa Supreme Court, Apr. 21, 1982. For collateral relatives, *i.e.*, those who are not directly ascendant or descendant, the degree "is determined by counting upward from one of the persons in question to the nearest common ancestor, and then down to the other person calling it one degree for each generation in the ascending as well as the descending line." *State v. Allen*, 304 N.W.2d 203, 207 (Iowa 1981). Under that system of counting, your grandparents are related to you in the second degree and included in the bystander recovery scheme in Iowa, but your uncles, aunts, nephews and nieces are not included because they are third degree relatives.

In respect to the significance from a sociobiological perspective of the inclusion of relatives by affinity in the Iowa scheme, see J. BECKSTROM, *SOCIOBIOLOGY AND THE LAW* 109 (1985).

19. D. BARASH, *WHISPERINGS WITHIN* 133 (1979).

20. Bourne, *Military Psychiatry and the Vietnam Experience*, 127 *AM. J. PSYCHIATRY* 481, 486 (1979); See Buck, Parke, & Buck, *Skin Conductance, Heart Rate, and Attention to the Environment in Two Stressful Situations*, 18 *PSYCHONOMIC SCI.* 95 (1970).

21. Cohen, *Aftereffects of Stress on Human Performance and Social Behavior: A Review of Research and Theory*, 88 *PSYCHOLOGICAL BULL.* 82 (1980).

22. Konner reports a study done by David Hamburg on the parents of children who were dying of leukemia:

All these parents had high rates of excretion of 17-hydroxycorticosteroid, a major urinary metabolite of cortisol, suggesting that they were under prolonged, measurable physiological stress. These physiological indications were correlated with the severity of expressed grief

[A]ll the above psychological and physiological indicators also occurred in prior studies by Hamburg and his colleagues of victims of polio and of disfiguring burns. Thus the process of response . . . to the loss of part of one's own physical capacity or body image has much in common with the loss of a very close loved person such as a child.

M. KONNER, *THE TANGLED WING* 346 (1982).

similar in character though probably somewhat more intense when she herself (100% of her genes) is endangered. What of the average bystanding grandmother (related by one-fourth) then? Presumably she has reactions that are similar, but somewhat further reduced in severity because of the reduction in genetic relatedness. Sociobiologists would assume corresponding reductions as one moves further out on the family tree of the impact victim and genetic relatedness decreases.

Thus, for the purpose of predicting the severity of typical reactions of bystanders one might, as a first step, sort their relatives into groups based upon an index of genetic relatedness. For example, one might put bystander's grandparents, uncles, aunts, nephews and nieces in the same category of impact victims because they are all related to bystander by one-fourth.²³ The theory, however, suggests that the typical bystander would be more solicitous for the welfare of an aunt than of a grandmother because the aunt is normally one generation younger than the grandmother and thus has more time remaining for reproduction and/or nurture. The normal three generation distance between a grandmother and a niece suggests yet more solicitude for the niece. From these calculations, sociobiological theory would indicate that if a bystander were not permitted to recover for emotional damages from observing a tortious impact on any and all relatives related by one-fourth, and the objective is to help assure the genuineness of claims, the female relatives related by one-fourth should be included in the following order: nieces, then aunts, then grandmothers. However, and to the contrary, under the new Iowa rule, mentioned earlier, a bystander may recover when the impact victim is, among others, a grandmother, but not when it is a niece or an aunt. The males related by one-fourth are treated correspondingly.²⁴

To be cautious one must allow that one or more other operative factors such as reciprocal altruism facilitated by close geographical distance between grandchildren and grandparents as opposed to the other relatives, lo-

23. The fact that your grandparents, aunts, uncles, nieces and nephews are all genetically related to you by $1/4$ may surprise some who are familiar with the "civil law" method of counting degrees of relatedness, which is used for legal purposes in many jurisdictions including Iowa. See note 18, *supra*. Under that system, your grandparents are related to you in the "second degree"—the others, in the "third degree." Let me use the case of an aunt to illustrate why the genetic relationship is the same ($1/4$) for all of these people.

When your grandmother (related to you by $1/4$) and grandfather (also $1/4$) united to have your aunt, one half of the genes of each of them went into your aunt. Thus: $(1/2 \times 1/4 = 1/8) + (1/2 \times 1/4 = 1/8) = 1/4$. The same type of thing happened whenever any two of your ancestors reproduced, such as when your parents (each $1/2$) produced your sibling (also $1/2$)—who, in turn together with a genetic stranger, produced your niece ($1/4$). See R. DAWKINS, *supra* note 10, at 99-100.

24. See note 18, *supra*.

cal environment or culture justify this aspect of the Iowa scheme. But sociobiologists would strongly suspect that it is wrong given the Iowa Supreme Court's objective of circumscribing the included relatives so as to help guarantee the genuineness of claims.

Therefore, a ground exists here for a cooperative empirical enterprise between scientists and lawyers. A modest research design could involve administering a questionnaire to a representative sampling of people who fit the characteristics of personal injury plaintiffs in Iowa. They could be asked whom they would save if they could save only one among pairings of endangered relatives including grandparents, nieces/nephews and uncles/aunts.²⁵

If the interviewees should tend to a significant degree to choose the others before grandparents, then the theory would be supported and the Iowa scheme should be reevaluated. On the other hand, if grandparents tended to prevail, then the Iowa scheme would appear to be proper in this particular. The theory would not be supported in that event unless the research design controlled for factors that sociobiologists consider operative other than genetic relatedness and generational differences.

I have focused on Iowa in this exercise because it is the first state that has taken steps to circumscribe the relationships that will qualify a bystander to recover for emotional damages. Empirical research of the sort described would be useful to lawmakers in other states that might be considering those steps.

Now, let me outline some empirical research on aid-giving propensities that could have immediate pertinency in all states depending upon its outcome.

IV. BIASED TESTIMONY FROM IDENTICAL TWINS

Most behavioral scientists would not be surprised if empirical research showed that average identical twins sets are more inclined to render aid to one another than any other set of relatives, such as ordinary siblings of similar ages. Some might see such reports as supporting sociobiological theory. We noted earlier that identical twins contain 100% of the same genetic material. As far as the interests of the genes are concerned, one twin is essentially the equivalent of the other. Other relatives are related by one-half or less.

25. D. FREEDMAN, *HUMAN SOCIOBIOLOGY* 115 (1979), refers to an empirical study by H. Ginsburg in which grandparents were asked to choose between saving children and grandchildren. The children prevailed except when they were beyond the reproductive years. Then there was a tendency to "save" the potentially reproductive grandchildren. The Ginsburg study appears never to have been published, but was reported in a paper read to the Psychonomic Society, Washington, D.C., Nov. 1977. *Id.* at 217.

Some scientists would see a report that identical twins were more inclined than any other relatives to aid one another as needing some explanation other than biological programming resulting from evolutionary processes.²⁶ Whatever the explanation for the phenomenon, if it exists to an appreciable degree the fact alone could be of interest to lawyers involved in the law of evidence.

Lawyers would be particularly interested to learn that one form of the exceptional aid that one member of a set of identical twins is inclined to give the other is to withhold information, shade the truth or fabricate in the interests of the other. In the law of evidence, a witness's creditability can be impeached for bias based merely on his kinship with a party in the lawsuit. Furthermore, we should note, not incidentally here, that when a witness himself is a party to the lawsuit, his "self interest" has historically intensified the impeachment value of the "relationship," if we may call it that. At one time in Anglo-American legal history, a party to a lawsuit was disqualified as a witness in the action.²⁷ On the other hand, his kin were permitted to testify in his behalf and it was left to the trier of fact to determine the credit to be given to their testimony.²⁸ Today disqualification of the party has been eliminated,²⁹ but upon request, instructions are often given to the jury to the effect that they must bear the party/witness's interest in the outcome in mind when weighing his testimony.³⁰

The process permitting impeachment of creditability for bias based upon kinship would appear to have developed over the years due to the collective impressions of lawyers and judges that kin are inclined to shade the truth, etc., in behalf of one another. Sociobiologists would predict that that impression would be borne out by research. No one appears to have suggested that identical twins should be treated differently than other relatives—essentially as if they were the same person—for these purposes. If the facts support such treatment, lawyers and judges have probably had too little contact with identical twins for a collective impression to have arisen. If the facts do support such treatment, those concerned with the law of evidence should be interested to learn of it³¹ and so should sociobiologists. Thus, a common

26. SEE R. ALEXANDER, *supra* note 5, at 157.

27. 9 W. HOLDSWORTH, *A HISTORY OF ENGLISH LAW* 193-96 (1926).

28. *Id.* at 187, n.9.

29. *Id.* at 196; 2 J. WIGMORE, *EVIDENCE* § 488, (J. Chadbourn Rev. 1979).

30. *E.g.*, *Denver City Tramway Co. v. Norton*, 141 F. 599 (8th Cir. 1905); *Lawler v. Pepper Constr. Co.*, 33 Ill. App. 2d 188, 178 N.E.2d 687 (1961). While similar instructions may be given in respect to other "interested" witnesses, 88 C.J.S. *Trial* § 315(e) (1955), the courts appear more inclined to give them when the witness is a party. *E.g.*, *Scanlon v. Chicago Union Traction Co.*, 127 Ill. App. 406 (1906).

31. If a basis were established for treating identical twins differently than other siblings for

ground for joint empirical research by the legal and scientific communities would appear to exist here.

Before moving to the last of my illustrations, which will probably be of the widest general interest to lawyers, we need to outline some additional sociobiological theory which to this point has not been directly relevant.

V. AID-GIVING IMPLICATIONS OF THE BIOLOGY OF REPRODUCTION

In some animals gestation of offspring occurs outside the body of adults—the chicken and the egg is an example. In others, gestation occurs in the bodies of males. The seahorse is an example of that. In humans, however, to date all gestation has occurred in the bodies of females. This fact has important theoretical implications concerning aid-giving inclinations toward relatives.

We have noted that sociobiologists suggest we are biologically predisposed to help our relatives. But, it is generally believed that we have no innate mechanism by which we are able to identify those relatives. Apparently something in our environment must tell us that a person is related to us.³² A mother is told a child is hers by the very convincing fact that it emerges from her womb. A father is usually told that a child is his by the mother. Thus, a father can virtually never be as certain of his parenthood as a mother can be of hers.

Although the typical male is relatively uncertain of his parenthood of any particular child, he has more capacity for parenthood than his female counterpart. A healthy male is theoretically capable of fathering thousands of children. Given these facts, sociobiologists trace evolutionary processes that suggest males have been biologically programmed to devote some attention to the nurture of children attributed to them, while continuing efforts to be responsible for other childbirths. This programming best serves the end of assuring that at least some of the children born during a male's lifetime (and

impeachment purposes, it would be necessary as part of the impeachment process to show that the individuals involved believed themselves to be identical twins. Fraternal (or sororal) twins, if similar enough in appearance, can be mistaken for identical twins. A blood test can prove the point, but for purposes of activating any behavior that is biologically programmed, it should only be necessary that the siblings *believed* themselves to be identical twins. D. BARASH, *supra* note 19, at 106; IRONS, *Kinship*, in *EVOLUTIONARY BIOLOGY AND HUMAN SOCIAL BEHAVIOR* 79, 80-81 (N. Chagnon & W. Irons eds. 1979). If the witness, on cross examination for purposes of impeachment should deny identical twinship in order to avoid a more stringent impeachment rule, analogous precedent exists for introducing evidence of reputation for identical twinship in the family and community. *Cf.* C. MCCORMICK, *HANDBOOK OF THE LAW OF EVIDENCE* 2d ed. (1972) § 34 (prior inconsistent statements admitted for purpose of impeaching witness) and § 322 (declarations of other family members and close friends of family concerning reputations of family relationships admitted into evidence).

32. See D. BARASH, *supra* note 19, at 106 and IRONS, *supra* note 19.

nine months thereafter) contain high percentages of his genes.³³

This behavioral attitude is obviously just a general predisposition. It can be overcome by environmental and cultural influences and individual will power. The celibate priest is an extreme example of that.

For the female each reproductive effort is comparatively important to the proliferation of her genes. She has considerably less productive potential during her lifetime than does the male and she invests heavily in the gestation process. On the other hand, when a child is born the female can be relatively certain as to whether or not it is hers.

All of these facts result in a theoretical disparity of solicitude of the typical parents for a given child. Sociobiologists suggest that the typical female parent should be somewhat more solicitous for the welfare of her child than her male counterpart. I should emphasize that this prediction has reference to large population averages.³⁴ It does not mean, of course, that in any particular family the mother will necessarily be more solicitous of her child than the father. Furthermore, it has reference to only one fact variable—the sex of the parents. One can juggle facts and circumstance in such a way that sociobiologists would expect to learn from empirical research that fathers tend to be more solicitous caretakers than mothers of the average child being cared for. Such would be the case, for example, if one were to isolate parents without spouses where the single mothers had several children of their own in their care whereas the single fathers had only one.³⁵

Empirical research on groups of this sort could be done on records of child abuse and neglect that are kept on a national scale or on geographically local samplings assembled specifically for the purpose. Presumably child abuse and neglect represent the reverse of solicitude. Empirical researchers have already examined the neglect and abuse picture in regard to single parents and their reports tend to substantiate sociobiological theory regarding comparative parental solicitude where the sex of the parent is the only variable.³⁶

33. M. DALY & M. WILSON, *SEX, EVOLUTION AND BEHAVIOR* 59, 272 (1978).

34. D. BARASH, *SOCIOBIOLOGY AND BEHAVIOR* 300-01 (1977); M. KONNER, *supra* note 22, at 317-18.

35. Daly & Wilson, *Child Maltreatment from a Sociobiological Perspective*, 11 *NEW DIRECTIONS FOR CHILD DEV.* 93, 100-02 (1981); D. BARASH, *supra* note 34, at 302-03. Empirical data have shown that the risk of child abuse is greater in larger families. Lenington, *Child Abuse: The Limits of Sociobiology*, 2 *ETHOLOGY & SOCIOBIOLOGY* 17, 22 (1981).

36. Daly and Wilson have recently reported data for the year 1976 from twenty-eight states and three territories, comprising 44.6% of the total U.S. population, showing that the risk of abuse and neglect of children from birth to seventeen years was larger in single-parent households headed by the natural father than it was in those headed by the natural mother. DALY & WILSON, *Abuse and Neglect of Children in Evolutionary Perspective*, in *NATURAL SELECTION AND SOCIAL BEHAVIOR* 405, 408-09 (R. Alexander & D. Tinkle eds. 1981). The

VI. INTERPARENTAL CHILD CUSTODY DISPUTES

Well-tailored and executed empirical research on parental solicitude should be of interest to courts charged with deciding custody disputes between parents undergoing divorce. The best interest of the children involved is the cardinal principle governing the resolution of those disputes. One factor that the courts consider in searching for the child's best interests is the comparative dispositions toward solicitude of the parents.³⁷ The history of the family may resolve that question. But it may not; and if not, the courts should welcome empirical reports on comparative solicitude of parents. The more closely the research design reflected the profiles of the parents before the court in terms of demographic and other characteristics, in addition to their sex, the more useful the report would be to a court.³⁸

VII. CONCLUSION

We have explored three subject areas where the potential appears to exist for cooperative empirical research by scientists seeking to substantiate sociobiological theory and lawyers seeking data on human behavioral patterns that will assist in the solution of practical legal problems. Others may have already occurred to the reader. Many others will surely be uncovered as lawyers gain familiarity with sociobiology.³⁹ A fertile ground exists here for compounding the amount of research that serves dual functions through a sharing by scientists and lawyers of the considerable time and expense necessary for effective empirical research.

risk was more than double for both abuse and neglect in the 0-2 age category. *Id.* There are two earlier studies, more limited in demographic scope, that report on abuse only. One accords with the relative risk situation that Daly and Wilson presented, LENINGTON, *supra* note 35, at 23 (Johnson study), and the other runs counter to it, *id.* (Gil study).

37. See MICH. COMP. LAWS § 722.23 (1974).

38. Empirical evidence concerning typical patterns of comparative dispositions toward solicitude within divorcing American couples contesting child custody is not now available. The American Humane Association has collected data on abuse and neglect of children in single-parent households, but they do not, to date, isolate the parents who are single due to divorce, not to mention those who obtained custody of the child as the result of a court decree. Telephone conversation between the author and Patricia Schene of the American Humane Association, Denver, Colorado, June 29, 1982.

39. A more detailed treatment of the relationship of sociobiology to the law may be found in J. BECKSTROM, *SOCIOBIOLOGY AND THE LAW* (1985).

