

Working out on your fitness? great...but how is our law doing?: the biological foundations of Japanese family and inheritance law

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(出版者 / Publisher)

法学志林協会

(雑誌名 / Journal or Publication Title)

法学志林 / Review of law and political sciences

(巻 / Volume)

108

(号 / Number)

2

(開始ページ / Start Page)

45

(終了ページ / End Page)

73

(発行年 / Year)

2010-09-29

(URL)

<https://doi.org/10.15002/00007409>

Working out on Your Fitness? Great...but How is Our Law Doing?

—The Biological Foundations of Japanese Family and Inheritance Law—

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Abstract:

Is “law” merely the written rules that humans have created to regulate behavior? Or are there biological foundations common to humans and other creatures, that are expressed in written law? Could the determinants and/or the foundations of law be explained by evolution or “fitness” theory? Family law and inheritance law, *inter alia*, should reflect the influence of evolution and fitness on family and reproduction, human behavior and psychology. This paper will use the tool of “fitness” to examine and evaluate the family law and inheritance law in the Civil Code of Japan, in an endeavor to take half a step toward explaining human law from the perspective of evolutionary theory. It will reveal the effectiveness, and at the same time the limitations, of such a perspective.

To serve this purpose, the paper will first examine the articles in the Japanese Civil Code that represent human behavior which demonstrate much in common with animal parallels maximizing their fitness, such as reciprocal altruism, incest taboo, and mate guarding. These articles in the Code concern loan for consumption, lease, incest taboo, presumption of “legitimacy” or determination of paternity of a child, and family support. Second, this paper will examine statutory regulations and their reforms which are not in harmony with fitness theory. These include articles on degree of

consanguinity, testamentary document (will) and heirs' legal portion (reserved for the successor at law; or *Pflichtteil* in German). Finally, the paper introduces the concepts of degrees of *fit succession* (FS), of *presumed fit succession* (PFS), and of *inclusively fit succession* (IFS), to examine and evaluate the reforms on statutory share in succession of a spouse (wife) in the Civil Code of Japan, 1898 to present.

key words: *law, private law, civil code, law and biology, family law, inheritance law, fitness, reciprocal altruism, incest taboo, mate guarding, fit succession, legal heir, legal inheritance share, spouse's share in succession, legal history of Japanese family and inheritance law.*

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I. WHY FITNESS AND LAW?

A purpose of law is regulating human behavior. What are the fundamental determinants of such regulation? Could at least part of the foundations of law be explained by evolution and fitness theory? "What is the cosmos? The world? And what are *we* at all, *Homo Sapiens*? A step toward answers to those questions is asking "What is human law?" What new perspective could biology and evolutionary theory offer on this eternal question for legal science? Is human law merely the written and orally transmitted and accepted rules regulating behavior, often through punishment? Or is human law an expression of biological foundations that are common to humans and other creatures? If yes, what part of law is?

Family law and inheritance law, among other areas of human law,

should reflect the influence of evolution and fitness on family and reproduction, human behavior and psychology. This paper will use the tool of “fitness” to examine and evaluate the family law and inheritance law in the Civil Code of Japan,⁽²⁾ in an endeavor to take half a step toward explaining human law from the perspective of evolutionary theory. The paper will reveal the effectiveness, and at the same time the limitations, of such a perspective.

II. SCOPE OF THIS RESEARCH AND SOME RESERVATIONS

The discipline of law and biology is well established in the U.S.⁽³⁾ However, analysis of Japanese law in general, let alone specific articles of statutes, from the perspective of law and biology is sparse. Shall we jog? Yes. For *fitness* sake? Sure. *Then how is our Japanese law doing?* We should jog that far, to establish (or to show limitation of) the effectiveness of an approach premised on law and biology.

This paper endeavors only to take half a step toward a biological and/or evolutionary explanation of law. With reference to lessons learned from the socio-biological debate of the 1970's and 80's, let us note that:

1. Merely demonstrating the similarities in human and non-human behaviors is rather meaningless, and cannot be the *final* work goal; and,
2. Research on the selection pressures that generated similar behaviors, as well as the backgrounds to such selection is indispensable. Similar selection pressures could generate different behavioral phenomena; and different selection pressure could results in (superficially) similar phenomena.⁽⁴⁾

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Thus, the work goals should be, *inter alia*:

3. To discover similar or different behaviors and phenomena amongst diverse creatures (including *Homo Sapiens*), and examine similarities and deviations in selection pressure involved in their evolution; and,
4. To examine, from the opposite direction temporally, similar or different selection pressure involved in the evolution of diverse species (including *Homo Sapiens*) and examine similarities and deviations in behavior and phenomena observed.

This paper limits its scope to finding the similarities in human and other species' behavior patters, using the Civil Code of Japan as a "human" material. In addition, the paper poses meaningful questions, including several to biologists, as work goals for the future development of "law and biology." The selection pressure involved in the evolution of human and other species' behavior patters shall be examined in a separate paper (or passed onto biologists!). The author is aware of the criticism that the "fitness-theory lovers are only counting the babies."⁽⁵⁾ Nonetheless, this paper embarks on an examination and evaluation of certain Articles of the Civil Code of Japan, using the measurement of fitness as an analytic tool.

Admittedly, evaluating statutory provisions on the basis of fitness theory will not necessarily demonstrate, let alone prove, the biological or evolutionary foundations of law. Only to the most ardent proponents of fitness-theory will the correlations between fitness theory and legal instruments prove their evolutionary foundations. Thus, the paper acknowledges the possible criticisms, counter-criticisms, and problems of the research method. However, the importance of this research should be seen as a necessary first step forward in determining if there are biological founda-

tions that are common to humans and other creatures underlying human law.

Finally, a few reservations. First, it needs to be stated that in discussing whether legal rules are in accordance with fitness theory, the article is not commenting on the relative merits of the legal rules themselves. Second, reference should be made to recent development in evolutionary psychology, as a means of going beyond the limitations of “just counting the babies.” This, however, should account for criticism that has been made on this approach.⁽⁶⁾ Finally, it is presumably too early to discuss any positive research results concerning the revelation of cognitive system of humans or primates. However, this field could offer new horizons for understanding the foundations of human law, and the literature will be included in future research.

III. FITNESS AND THE CIVIL CODE OF JAPAN: ARTICLES IN HARMONY WITH FITNESS THEORY

The Civil Code of Japan has five Books, established after the *Pandekten* style of German Civil Code (*Bürgerliches Gesetzbuch*, BGB) in 1898. Described below are provisions that harmonize with the fitness theory in: (1) Books II (Property Law, *inter alia*) and III (Obligation Law, typically contract, gift, tort, etc.); and (2) Book IV (Family Law).

A. LOAN FOR CONSUMPTION AND RECIPROCAL ALTRUISM

Modern laws and statutes, including the Japanese law on property, set forth the law regulating loans, including loan for consumption. The reciprocal altruism observed as animal behavior has been defined as “lending help, with expectation of being helped later.”⁽⁷⁾ The significance of reciprocal altruism lays in the fact that “repetition of such social behavior/negotiation [as

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reciprocal altruism] raises, in the long term, the fitness of both [initial⁽⁸⁾ giver and taker]. The determinant characteristic for animals is that reciprocally altruistic behavior is demonstrated by *both* individual parties, with a time discrepancy in between altruistic actions. How is this demonstrated by humans? Examples are seen in the obtaining of a mate, or the exchange of goods [for survival] between separate groups, with reciprocally altruistic⁽⁹⁾ behavior presumably essential within and without the group(s).

1. Financial Loan for Consumption (in Book III: Obligation)

Is loan for consumption also an example of reciprocal altruism? By definition, the answer is yes. To go (at least half a step) towards answering the first work goal, similarity in behavior among humans and non-humans shall be demonstrated. Human business and daily life is filled with loan for consumption: bank deposits, debentures, loans with interest, etc. The Japanese Civil Code, in its Third Book of Obligation, states provisions for loans, as set forth below:⁽¹⁰⁾

[Loan for consumption]

Article 587. A loan for consumption becomes effective when one of the parties receives from the other party money or other things on the understanding that the former will return the money or things of the same kind, quality and quantity.

[Liability of lender to warrant]

Article 590. If, in the case of a loan for consumption bearing interest...

2. Lease (in Book III: Obligation)

Note, however, that this constitutes reciprocal altruism, only when the rent (Article 614) is paid in arrears.

[Lease]

Article 601. A lease becomes effective when one of the parties has agreed to allow the other party to use a thing and take profits there from and the latter has agreed to pay rent therefor.

[Period to pay rent]

Article 614. Rent shall be paid at the end of each month in cases of a movable, a building or building site, and at the end of each year in cases of any other land; however, in cases of a thing which has a harvest season, it shall be paid without delay upon the close of such season.

3. Hypothec (in Book II: Property) and Loan for Consumption (Book III: Obligation)

[Contents of hypothec]

Article 369. [1.] A hypothecary obligee is entitled to obtain satisfaction of his claim in preference to other obligees out of the immovable which has been furnished by the obligor or a third person as security without transferring its possession. [2. omitted]

B. INCEST TABOO (IN BOOK IV: FAMILY LAW)

As in many legal regimes, the Japanese Civil Code prohibits incestual marriage. Some primates, as are well known, similarly observe incest taboo. What work goals are then feasible? Further, which questions can lawyers ask of biologists that are meaningful?⁽¹¹⁾

1. Uncovering the Selection Pressure that Generated Incest Taboo

Did hereditary "handicaps," physical and/or mental, observed as a product of incest work as a selection pressure? What (other?) selection pressure was involved?

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2. Scope of Incest Taboo

The scope set forth for humans in different legal (and cultural) regimes are known. How broad is the scope of an incest taboo that primates and other animal observe? Is it limited to relations between parents and children, or does it include siblings as well? What does the comparison ?

3. Means of Enforcing the Incest Taboo

How do humans and other primates “enforce” their respective incest taboos? Some legal scientists doubt there exists “law” for non-humans. However, this contention depends on the definition of law. Lawyers and legal scholars have failed to agree upon one universal and convincing definition of law. Given the lack of a consensus, this paper shall focus on how law functions amongst humans, and amongst non-humans. Does humans and non-human law rely heavily on oral and/or written language, or on “nature” and “intuition”? Further, how deeply do humans and non-humans depend on either? These questions reinforce that merely demonstrating the similarities in human and non-human behavior is rather meaningless, and cannot be the *final* work goal. Regardless, we do know that an incest taboo exists, and is reinforced with or without written rules similar to human laws. The Japanese Civil Code sets an example of clear scope of human incest taboo:

[Prohibition of marriage between relative by blood]

Article 734. No marriage may be effected between lineal relatives by blood, nor between collateral relatives by blood up to the third degree of relationship....

It is noteworthy that diverse statutes, as well as court practices, differ in the scope of the human incest taboo. An illustrative contrast is that between the Anglo-American and the Japanese family laws. Marriage between

cousins are strictly discouraged in the Anglo-American legal circles, but causes no statutory problems in Japan.

4. Cause for (or Selection Pressure that generated) the Prohibition on Marriage between Relatives by Affinity (In-laws)

On the other hand, lineal relatives by affinity shall not marry in many legal circles, including Japan. This holds true even after the relationship by affinity has ceased:

[Prohibition of marriage between lineal relatives by affinity]

Article 735. No marriage may be effected between lineal relatives by affinity. The same shall apply after the relationship by affinity has ceased in accordance with the provision of Article 728....

[Termination of matrimonial relationship]

Article 728. [1.] The matrimonial relationship is terminated by divorce. [2.] The same shall apply also if after the death of either husband or wife, the surviving spouse declares his or her intention to terminate the matrimonial relationship.

This article could be interpreted as indirect or deterrent mate guarding by an offspring against his or her parent. The question that needs to be answered is whether primates and non-humans follow similar behavior patterns?

C. MATE GUARDING AND MONOGAMY

Mate guarding, discussed below, is known to give rise to fitness for non-humans, especially for males. Species of fowls and some mammals, such as hylobates, follow (not 100%, in case of fowls to the disappointment of

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Konrad Lorenz!) the pattern of monogamy. In addition, humans have instituted monogamy in many countries, cultures and legal regimes. Japanese family law is no exception and prohibits bigamy or polygamy:

[Prohibition of plural marriage]

Article 732. A person who has a spouse may not effect an additional marriage.

The question that must be addressed is whether these legal regulations should be considered as a mate guarding mechanism that increases fitness?

D. MATE GUARDING AND CONFIRMATION OF PATERNITY

Among other primates, *presbytis entellus*' fostering of its own child, in addition to "step" child killing, is representative of a paternal strategy for better fitness. Clarification of paternity contributes to parental/paternal investment and support of offspring; the absence of paternity leads to killing. However, ambiguity of paternity due to polygamous relationships could prevent child killing, as the fathers cannot confirm paternity of offspring.⁽¹³⁾

The socially regulated and accepted monogamy of human relationships does not exclude polygamous sexual behavior, that can lead to ambiguous fatherhood. This raises the questions as to the human legal strategies of mothers and probable fathers then to secure their fitness. Whose fitness is stabilized and how?

1. Provisions and Court Practice in Japan that Contribute to the Fitness of a Husband, who is not Father to Wife's Child

Human and non-human males alike, parental investment to their own children, i.e. of clarified paternity, is decisive. The reverse shall be avoided as set forth below:

[Denial of legitimacy]

Article 774. In any case mentioned in Article 772, the husband may deny that the child is legitimate.⁽¹⁴⁾

This Article is reinforced substantially by court practice and precedent in Japan. Presumed fathers⁽¹⁵⁾ can be a plaintiff *at any time* (!) in a so-called “Confirmatory lawsuit for (lack, as the case may be, of) paternity,” and in recent years have won 99% of the cases after negative DNA testing.⁽¹⁶⁾

2. Provisions that Contribute to the Fitness of a Wife, whose Child’s Biological Father is not Her Husband; and Court Practice that Could Work Against Her

With most mammals, including humans, maternity of offspring is clear. The remaining question for a mother is how to win favorable environment and conditions to protect and raise her offspring. For a human mother, given a monogamous society, support for offspring by additional adults, such as a husband, favors her fitness. Articles that provide such favorable environment are shown below. The denial clause of Article 774, discussed above, enables a husband who is unsure of paternity of the wife’s child to be relieved of support duty for the child. However, Articles 776 and 777, listed below, limit a husband’s right of denial to the advantage of the wife. (At least they contributed to a mother’s fitness in the past, in the presence of trust by the husband of his wife’s sexual fidelity, and in the absence of popular, inexpensive DNA testing).

[Presumption of legitimacy]

Article 772. [1.] A child conceived by a wife during marriage shall be presumed to be the child of the husband.

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[Recognition of legitimacy]

Article 776. If, after it has been born, the husband recognizes that the child is legitimate, he loses the right of denial.

[Ibid -- period to bring action of denial]

Article 777. An action of denial shall be brought within one year from the time when the husband became aware of the child's birth.

Once in court, however, Article 774 and the established precedence let a husband practically deny his paternity after more than a year, thus extracting the teeth from the three Articles.

3. Provisions that Contribute to the Fitness of a Man, who is not Husband to the Mother of His Biological Child

A human male who is not married legally can increase his fitness, given a good chance to parentally invest in a child certain to be his offspring. Acknowledgment in Japanese family law is the key instrument that serves his purpose directly, as once the child is acknowledged by a father, he bears a *right* and a duty to support the child.

[Acknowledgment]

Article 779. A child who is not legitimate may be acknowledged by its father or mother.

In accordance with the Japanese Civil Code, a father can determine the paternity of a child of unmarried parents, referred to statutorily as a "child who is not legitimate," by means of acknowledgment. In the case of a child whose mother is married, paternity is presumed by Article 772. However, if its "legitimacy" is later challenged successfully by the denial of Article 774,

or by the confirmatory lawsuit for lack of paternity, the child is deemed to be not legitimate, and then can be acknowledged by a father.

4. Provisions and Court Practice that Contribute to the Fitness of a Mother, who is not Married

When a human female is not married, she can also secure her fitness by winning support from other adults, such as the child's biological father, in addition to her own actions. Family law provisions enable a mother and her child to force the biological father to acknowledge the child, even when the father refuses to do so, thereby levying a duty on him to support the child:

[Acknowledgment—action for]

Article 787. A child, any of its lineal descendants or the legal representative of any of them can bring an action for acknowledgment....

The Supreme Court reinforced acknowledgment in 1957, long before the era of DNA testing. In the best known case, nicknamed the *Cafe Waitress Case*,⁽¹⁷⁾ whereby an unmarried woman, a waitress at a café, engaged in sexual relations with several men, and subsequently gave birth to a baby. The Supreme Court ruled that the burden is on the side of men to prove they are *not* the child's biological father. This reversed its former decision that had put the burden of proof of paternity on the side of a mother, and had made it practically impossible to determine a biological and *legal* father. Most importantly, by reinforcing the father's legal duty of support, the ruling in the *Cafe Waitress Case* thereby provides a better chance for increasing the mother's (and the child's) fitness.

E. The Duty of Support and Inclusive Fitness

One question that should be asked is whether the Articles that set forth

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family and relatives' support duties induce humans to behave in a way to maximizes their inclusive fitness, also in a manner similar to the behavior observed in many other animals?

[Mutual cooperation of relatives]

Article 730. Lineal relatives by blood and the relatives living together shall mutually cooperate.

[Cohabitation and cooperation]

Article 752. Husband and wife shall cohabit, and shall cooperate and aid each other.

[Person under duty to furnish support]

Article 877. [1.] The lineal relatives by blood and brothers and sisters shall be under duty to furnish support each other.

[Order of furnishing or receiving support.]

Article 878. If, in cases where there exist two or more persons under a duty to furnish support, no agreement is reached or possible between the parties concerned with respect to the order in which they are to furnish support, such order shall be determined by the Family Court.

The provisions of the Japanese Civil Code discussed thus far will appear to many more or less similar to those of the United States State statutory and common law. However, the Articles, to be examined in the next section may be foreign to Anglo-American law, while applying to *most* of the Euro-⁽¹⁸⁾pean continental legal regimes, including German and French Civil Codes.

IV. FITNESS AND THE CIVIL CODE OF JAPAN: ARTICLES IN DISCORD WITH BIOLOGY OR FITNESS THEORY

A. DEGREE OF CONSANGUINITY: AN EXAMPLE IN DISCORD WITH BIOLOGICAL DEGREE IN THE FAMILY LAW

Degree of Consanguinity in the Japanese, as well as other Civil Codes, does not coincide with the biological coefficient of relatedness. Book IV of the Japanese Civil Code defines a certain group of relatives by blood, and relatives by affinity (in-laws) as “relatives”:

[Scope of relatives]

Article 725. The persons mentioned below are relatives:

- (1) Relatives by blood up to the sixth degree of relationship;
- (2) Spouses;
- (3) Relatives by affinity up to the third degree of relationship.

The Japanese Civil Code's method of computing the degree of consanguinity follows the old Roman Law:

[Degree of relationship]

Article 726. [1.] The degree of relationship is determined by computing the number of generations between relatives.

[2.] As between collateral relatives the degree of relationship is determined by the number of generations ascending from one of them, or his or her spouse, to the common ancestor, and then descending from such ancestor to the other.

Thus, a parent-child relationship is a first degree of consanguinity, which is computed as “closer” than a brother-sister one of a second degree. Note, this is discordant with the biological coefficients of relatedness, which

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are 0.5 for both relationships. Another major computation of degree of consanguinity called canonical method, though similar to biological coefficient in some cases, demonstrates a similar discrepancy with the biological coefficient of relatedness, producing a parent-child relationship of 1.0 and a brother-sister of 0.5.

Given the limited scope of this paper, the following questions are worthy future work goals: why and how did this discrepancy occur? Is this discrepancy due to a lack of biological knowledge of the citizens and lawmakers of the time, or based on a richly imaginative understanding of relatedness? In either case, has this discrepancy lead to lowering our individual and collective fitness?

B. 'TESTAMENT AND HEIRS' LEGAL PORTION (RESERVED FOR THE SUCCESSOR AT LAW) : EXAMPLES IN ACCORD AND DISCORD WITH THE THEORY OF (INCLUSIVE) FITNESS

The institution of testament in many Civil Codes, which enables the decedent to freely let non-relative inherit in whole or in part, his or her estate, is not in accordance with the theory of "inclusive fitness." In contrast, the statutory heirs' legal portion (reserved for the successor at law), found in Japanese and German Civil Code, *inter alia*, is in accord with inclusive fitness. It does so by siding with the children (and other family members, including the spouse) of a (rich?) decedent, whose will stated all his or her estate should be inherited by a non-relative person (a lover?), thereby ensuring that the children will secure their minimum shares. Such provisions functions as a fine adjustment to testaments, and are more in harmony with (inclusive) fitness theory, although as exceptions to such harmony, the question remains why then the siblings of the decedent are not entitled to similar secured shares:

[Universal gift and special gift by will]

Article 964. A testator may make a disposition of the whole or a provision relating to legally secured portions shall not be contravened.

[Persons entitled to legally secured portions and the sum thereof]

Article 1028. Any successors shall, with the exception of brothers and sisters of the person succeeded to, receive, as their legally secured portion, the following sum:

- (1) In cases of all of the successors are lineal ascendants, one-third of the property of the person succeeded to;
- (2) In all other cases, one half of the property of the person succeeded to.

C. STATUTORY HEIRS AND SHARES IN SUCCESSION: AN EXAMPLE OF INSTITUTIONS IN THE INHERITANCE LAW IN DISCORD WITH THE THEORY OF (INCLUSIVE) FITNESS

The conclusion of this subsection should be stated first: the statutory reforms of heirs and their shares in succession, represented by the raise in the share of a spouse as codified in the inheritance law of the Japanese Civil Code, as well as parallel reforms in many legal regimes starting in late 1960's, do not contribute to maximization of (inclusive) fitness.

1. A Tool for Measurement and Analysis: "Degree of Fit Succession (FS)"

To simplify the *Degree of Fit Succession* (FS), it suffices to state that FS reaches 100% if the whole property and estate of a decedent is inherited by his or her clone. (Needless to say, this is not meant as support human cloning!) The figure remains the same regardless of number of children of the decedent.

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Degree of Fit Succession (F'S) = fitness [coefficient of relatedness, $r \times$ rate
of survival]⁽¹⁹⁾

\times statutory share in succession (\times number of heirs)⁽²⁰⁾

Degree of presumed fit succession (PFS) = immediate heir's statutory por-
tion (\times number of heirs)⁽²¹⁾

\times degree of inheritance to the next generation

$\times r$ of the next generation's heir (number of heirs)

Degree of inclusively fit succession (IFS) = F'S + PFS

2. Major Provisions of the Civil Code Regarding Statutory Heirs

[Children]

Article 887. Children of a person to be succeeded to become successors.

[Lineal ascendants, brothers and sisters]

Article 889. [1.] In cases where there exists no person who is to become successor in accordance with the provisions of Article 887, the persons mentioned below become successors in the order as follows:

(I) Lineal ascendants; provided that as between persons standing in different degree of relationship, those nearer in degree are preferred;

(II) Brothers and sisters.

[Spouse]

Article 890. The spouse of a person succeeded to becomes, in every case, a successor....

3. Major Provisions of the Civil Code Regarding Statutory Shares in Succession

[Statutory shares in succession]

Article 900. If there exist two or more successors in the same rank, their shares in the succession shall be determined in accordance with the following provisions:

(1) Where children and the spouse are successors, the shares in the succession of the children and that of the spouse shall respectively be one-half:

(2) Where the spouse and lineal ascendants are successors, the share in the succession of the spouse shall be two-thirds, and those of the lineal ascendants shall be one-third;

(3) Where the spouse and brothers and sisters are successors, the share in the succession of the spouse shall be three-fourths and those of the brothers and sisters shall be one-fourth;

(4) Where there exist two or more children, or lineal ascendants, or brothers and sisters, their respective shares in the succession shall be equal. However, the share in the succession of a child who is not legitimate shall be one half of that of a legitimate child, and the share in the succession of any of the brothers and sisters whose father or mother alone is the same with that of person succeeded to, shall be one half of the share of any of the brothers and sisters whose father and mother both are the same with those of the person succeeded to.

Below is a list of the statutory heirs and their respective shares in succession; and their statutory changes (from the standpoint of the decedent):

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	1947~1980		1981~Present		
primary heirs	spouse 1/3	child (ren) 2/3	spouse 1/2	child (ren) 1/2	
secondary heirs	spouse 1/2	parents 1/2	spouse 2/3	parents 1/3	
third degree heirs	spouse 2/3	siblings 1/3	spouse 3/4	siblings 1/4	

4. Spouse's Statutory Share in Succession, its Changes and an Evaluation

As noted above, the share of a spouse exceeds any other's, and has been raised in the last 20 to 55 years after the World War II. How should this be evaluated with regards to fitness theory? Note that the comparison of the different phases will be made on an equal basis: the FS of the heirs of generation next to the decedent. For brevity's sake, the detailed computation and equations are omitted:

For the half century after the introduction of the Civil Code of Japan:

FS=IFS=50. This was apparently quite high.

↓

For the period after World War II (including primary heirs)

IFS=41.6-->37.5. This is a major decrease.

Accordingly, one can conclude that the reforms of inheritance law in the Civil Code, particularly the raise in the share of a spouse, do not contribute to increase in the (inclusive) fitness of the decedent.

5. Further Tasks for the Analysis of Inheritance Law

A different approach to the analysis and evaluation of inheritance law could start with restating of what the statutory heir and share signify from a legal perspective. In addition, reexamining the key function of the

fitness theory in biology should clarify the theory's validity today.

As Mariko Hasegawa asserts: "With humans, biological factors, culture, cultural magnification, interests of families and groups are complexly entangled. We must disentangle them..." in order to clarify what selection pressure worked in what way to generate what behavior or phenomena. Let us therefore limit ourselves to two endeavors, in order to disentangle diverse factors.

One concerns was expressed in recent research by Geddes & Zak.⁽²⁴⁾ They state that for most of human history after ancient Egypt, the wife's legal share in succession has been one-third. This includes the Hammurabi Code and Codes of Western Europe, or statutes of Northern America. (In Japan, however, the wife's share varied depending on period and area. One-third had been the wife's share only between 1947 and 1980). Geddes & Zak pose a question at the end of the thesis, Why one-third?⁽²⁵⁾

Lawmakers in the wide range of cultures surveyed...appear to have intuitively understood that both parents' contributions were important to children's acquisition of human capital. A simple wealth allocation rule that guarantees that both parents equally contribute to the children's human capital is the equal elasticities rule...Indeed, in the absence of information on the elasticities of mother's and father's inputs into their children's human capital, it is reasonable for lawmakers to assume that they are equal. We have shown that this simple rule leads to better outcomes for children. Further, even though the paterfamilias does not explicitly care about his daughter-in-law in our approach, as long as each household has a paterfamilias, then each man's daughter will also be protected by the Rule of One-Third.⁽²⁶⁾

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They propose that the one-third share in succession results in helping to raise fitness, when wives or mothers bring up their own children.

The other concern is reconsidering the ground for, as well as the background of, statutory share in succession in modern family law jurisprudence. Is it post-death support for the bereaved family members? Or a balancing of ownership of the common (community) property that the spouses had cooperated to acquire? Both are said to be valid. Then, if part of the property that was owned under one spouse's name belonged to the other spouse from the outset, it should be deducted first, and the analysis should be of the fitness of the *remaining* portion. Suppose half belonged to the bereaved spouse, and let us simplify the end results: for the case of primary heirs (spouse and children), child (ren)'s $FS=IFS=50$, which is higher than 37.5 computed in iv) and thus harmonize with the fitness theory; for the case of secondary heirs (spouse and the decedents' parents), siblings' child (ren)'s $FS=IFS=8.3$, which is double the figure in iv); for the case of thirdly heirs (spouse and siblings), the siblings' child (ren)'s $FS=IFS=6.3$, which is also—as a logical results—double the figure in iv). The conclusion, however, that the historical *change and raise* of spouse's share *lowers* the fitness of succession (FS) remains the same.

Technically, if one intends simply to maximize the IFS for the primary and secondary heirs' cases, where there is no child of the decedent, the whole estate and property (or what remains after the spouse's share is given away) shall be inherited *directly* by decedent's nephews and nieces. If there are no nephews or nieces, the second best strategy would be to let the decedent's siblings inherit the whole. The third best is letting his or her parents have the whole. Then again, why does the (Japanese) Civil Code not incorporate these strategies? For lack of time and space, consider the hypothesis, in the fashion of Geddes and Zak: in most cases, the spouse, who is parent

to the offspring of the decedent, has the best knowledge of most effective investment of the limited resources for the protection and raising of the children. Further analysis is a future work goal.

6. Final questions: Why Inherit at All? To Raise Inclusive Fitness or the Degree of Fit Succession? Is Inheritance a Form of Parental Investment?

Examples that do not harmonize with the fitness theory described above are printed in black and while in the Code. In strong contrast, *nowhere* in the Code is it explained why heirs have the right to inherit at all. For example, why could one leave a testament and let a third person (a lover?) inherit a portion as in Article 964? Conversely, why is there a (secured) portion for some bereaved family members as in Articles 900 or 1024? What are the *foundations* for these rights and options? One interpretive explanation of these Articles centers on the extension of the freedom to dispose of one's own property and estate even after his or her death for the testament, and to guarantee the support of the bereaved family for such secured share.⁽²⁸⁾

The reasoning for the secured share could possibly, at least in part, rest upon biology and fitness theory, based on the analysis using both FS, IFS.

To shed a new light on the question "why inherit?," one might ask if inheritance for humans is a parental investment (PI) at all. PI should be made at the expense of children that might be born in the future. The Japanese Civil Code state death as a single cause for the opening of succession:

[Opening of succession—cause]

Article 882. Succession is opened by reason of death.

Inheritance therefore does not take place "at the expense of possible future children," and thus would not constitute a PI. Under the former Civil

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Code of 1898, succession to the headship and the property of the "house (*ie*)" could be caused by institutional "retirement" of a head of the house, and thus could be interpreted as a PI. But on second thought, would the current succession and inheritance still be a PI, as it represents a situation where "the future children, at whose expense the inheritance is made, *happen* to be non-existent"? Arguably, answers to this question might better be provided by biologists.

V. CONCLUSION AND REMAINING WORK GOALS

One conclusion is that further exploration of the possible explanations of biological foundations of law, statute, and the Civil Code of Japan must be addressed in further research. Much remains to be clarified, in addition to the work goals described above. Further, the Criminal Code of Japan used to penalize the killing of a lineal ascendant more heavily than other crimes, until the Article 200 of the Criminal Code was denounced as unconstitutional by the Supreme Court on April 4, 1973, and was deleted in the Code of 1995. A question to be investigated is whether this legal reform has any biological foundations, or did it undermine biological imperatives?

What about the Japanese Constitution of 1947, including Articles 25 and 29? Article 25 guarantees right to a minimum standards of living; Article 29 states the inviolability of property right:

Constitution, Article 25. All people shall have the right to maintain the minimum standards of wholesome and cultured living.

In all spheres of life, the State shall use its endeavors for the promotion and extension of social welfare and security, and of public health.

Constitution, Article 29. The right to own or to hold property is inviolable.

Property rights shall be defined by law, in conformity with the public welfare. Private property may be taken for public use upon just compensation therefor.

Could these have biological foundations? The work goals know no end. Hopefully this paper serves as half a step forward in addressing these questions.

Much has been discussed of how much of law can be explained by biology. One may also ask the question how much of biology, biological research and new bio-technology can be regulated by law? The second question brings one back to a variation on the same theme of our first question: is there a biological foundation for justice or bioethics? Past and current research suggests that there is. Most importantly, the importance of addressing the second question is unchallenged and indispensable for the 21st Century. Humanity has gone too far with its technologies in the past. Law is a strong instrument to prevent crises, and clarification of law's foundations, be they biological or not, shall also help such crisis management function of the law.

Bibliography

ALAS, POOR DARWIN: ARGUMENTS AGAINST EVOLUTIONARY PSYCHOLOGY (Hilary Rose & Steven Rose eds., 2000)

ALEXANDER, R.D., DARWINISM AND HUMAN AFFAIRS (Univ. of Wash. Press 1988).

THE CIVIL CODE OF JAPAN, EHS LAW BULLETIN SERIES (Fukio Nakane, ed. and translator, 2000)

Working out on Your Fitness? Great...but How is our Law Doing? (Wada)

DE WAAL, F., GOOD NATURED: THE ORIGINS OF RIGHT AND WRONG IN HUMANS AND OTHER ANIMALS (HARV. UNIV. PRESS 1998)

Fukaya, M., GENDAI KAZOKU HO (MODERN FAMILY LAW) (Seirin Shoin, Tokyo, 3rd ed. 1997)

Geddes, R. & Zak, P., *The Rule of One-Third*, 31 J. LEGAL STUD. 119 (2002)

Haig, D., *Asymmetric Relations: Internal Conflicts and the Horror of Incest*, 20 EVOLUTION & HUMAN BEHAVIOR 83 (1999)

HAIG, D., GENOMIC IMPRINTING AND KINSHIP (Rutgers Univ. Press 2002)

HASEGAWA, M., OSU TO MESU = SEI NO FUSHIGI (MALE AND FEMALE: MYSTERY OF SEXES) (Kodansha, Tokyo 1993)

HASEGAWA, M. & HASEGAWA, T., SHINKA TO NINGEN KODO (EVOLUTION AND HUMAN BEHAVIOR) (2000)

Hiraishi, K., *Shinka Shiniri-gaku: Riron to Jissho Kenkyu no Shokai (Evolutionary Psychology: Introduction to Theories and Empirical Research)*, in 7 NINCHI KAGAKU (COGNITIVE SCIENCE) 341 (2000)

Hrdy, S.B., *Raising Darwin's Consciousness: Female Sexuality and the Pre-hominid Origins of Patriarchy*, 8 HUMAN NATURE 1 (1997)

INTRODUCTION TO BEHAVIOURAL ECOLOGY (J.R. Krebs & N.B. Davies eds., 4th ed., 1991)

Jones, O.D., *Sex, Culture, and the Biology of Rape*, 87 CAL. L. REV. 827 (1999)

Jones, O.D., *Reconsidering Rape*, NAT'L L. J., Feb. 21, 2000, at A21

Murdock, G., ETHNOGRAPHIC ATLAS (Univ. Pitt. Press 1967)

NAKAGAWA, Z. & IZUMI, H., SOZHOKU-HO (INHERITANCE LAW) (Yuhikaku, Tokyo, 4th ed. 2000)

NINOMIYA, S., KAZOKU-HO (FAMILY LAW) (Shinsei-sha, Tokyo, 1st ed. 2000)

RIDLEY, M., THE ORIGINS OF VIRTUE: HUMAN INSTINCTS AND THE EVOLUTION OF

COOPERATION (Penguin 1998)

RIDLEY, M., GENOME: THE AUTOBIOGRAPHY OF A SPECIES IN 23 CHAPTERS (Harper Collins 2000).

THE SENSE OF JUSTICE: BIOLOGICAL FOUNDATIONS OF LAW (Sage Pubs., Roger D. Masters & Margaret Gruter eds., 1992)

Trivers, R., *The Evolution of Reciprocal Altruism*, 46 QUART. REV. BIOL. 35 (2000)

TRIVERS, R., SOCIAL EVOLUTION (Benjamin/Cummings Pub. Co., Menlo Park, Japanese Trans., 1991)

WILSON, E.O., SOCIOBIOLOGY: THE NEW SYNTHESIS (2000)

- (1) Professor of Law, Hosei, University, Tokyo, Email: mwada@i.hosei.ac.jp. A parallel article in Japanese appeared in: 53 (1) SEIBUTSU KAGAKU (BIOLOGICAL SCIENCE) 34 (2001).
- (2) Articles in this paper, unless otherwise specified, refer to those of the Civil Code of Japan. The English translation of the Articles are quoted from, THE CIVIL CODE OF JAPAN, EHS LAW BULLETIN SERIES (Fukio Nakane, ed. and translator, 2000).
- (3) See, e.g., Owen D. Jones, *Reconsidering Rape*, Nat'l L. J., Feb. 21, 2000, at A21; Owen D. Jones, *Sex, Culture, and the Biology of Rape*, 87 CAL. L. REV. 827 (1999); see also Gruter Inst. for Law and Behavioral Research, at <http://www.gruterinstitute.org>.
- (4) See MARIKO HASEGAWA, OSU TO MESU=SEI NO FUSHIGI (MALE AND FEMALE: MYSTERY OF SEXES) 233 (Kodansha, Tokyo 1993).
- (5) For the introductory work on the latest developments and literature on evolutionary biology by a Japanese author, see K. Hiraishi, *Shink Shiniri-gaku: Riron to Jissho Kenkyu no Shokai (Evolutionary Psychology: Introduction to Theories and Empirical Research)*, in 7 NINCHI KAGAKU (COGNITIVE SCIENCE) 341 (2000).
- (6) See ALAS, POOR DARWIN: ARGUMENTS AGAINST EVOLUTIONARY PSYCHOLOGY (Hilary Rose & Steven Rose eds., London 2000).
- (7) For definitions and observations, see, for example, E.O. WILSON, SOCIOBIOLOGY: THE NEW SYNTHESIS 230, 244-5, 282, 525 (2000); see also INTRODUCTION TO BEHAVIOURAL ECOLOGY 300-10 (J.R. Krebs & N.B. Davies eds., 4th ed., 1991).
- (8) M. HASEGAWA & T. HASEGAWA, SHINKA TO NINGEN KODO (EVOLUTION AND HUMAN BEHAVIOR) 164 (2000) (citing Robert Trivers, *The Evolution of Reciprocal Altruism*, 46 QUART. REV. BIOL. 35 (2000)).
- (9) *Id.* at 116.

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- (10) Prescriptions, of course, are also known as exceptional provisions that override laws, in Articles 144-174.
- (11) For an elaborate study of incest, see David Haig, *Asymmetric Relations: Internal Conflicts and the Horror of Incest*, 20 *EVOLUTION & HUMAN BEHAVIOR* 83 (1999).
- (12) See HASEGAWA & HASEGAWA, *supra* note 8, at 210 (quoting GEORGE P. MURDOCK, *ETHNOGRAPHIC ATLAS* (Univ. Pitt. Press 1967) (providing anthropological and geographical—not historical—research on mating systems in 849 different human societies in the world).
- (13) *Id.* at 224 (introducing Sarah B. Hrdy, *Raising Darwin's Consciousness: Female Sexuality and the Prehominid Origins of Patriarchy*, 8 *HUMAN NATURE* 1 (1997).
- (14) Related Articles to limit such denial exist also. See Article 777.
- (15) See Article 772, discussed *infra*.
- (16) However, a Japanese Supreme Court case is currently pending that might reverse the reasoning and validity of DNA testing and paternity determination.
- (17) Supreme Court Decision of June 21, 1957; *Minji Hanrei-shu* [Civil Case Decisions of Supreme Court of Japan], Vol. 11, No. 6, at 1125.
- (18) Except possibly to the State of Louisiana, which follows code-based legal system.
- (19) Should be multiplied by reproductivity, which however equals number of children (heirs), and can be disregarded. See *supra* note 19.
- (20) Number of heirs shall be disregarded, as in the Civil Code of Japan: (share of each child as heir)³ (number of children) = unchanged (in accordance with Article 900). Such computation represents a certain philosophy of the Civil Code that "one child or ten children, it is all the same," which again appears discordant with the concept of evolution or fitness.
- (21) Again, the number of heirs shall be disregarded, as in the Civil Code of Japan:
- (22) This does not harmonize with the biological coefficient of relatedness (r).
- (23) This harmonizes with the biological coefficient of relatedness (r).
- (24) HASEGAWA, *supra* note 4, at 234.
- (25) Rick Geddes & Paul J. Zak, *The Rule of One-Third*, 31 *J. LEGAL STUD.* 119 (2002).
- (26) *Id.* at 132-33.
- (27) See Z. NAKAGAWA & H. IZUMI, *SOZHOKU-HO (INHERITANCE LAW)* 9-12 (Yuhikaku, Tokyo, 4th ed. 2000); see also M. FUKAYA, *GENDAI KAZOKU HO (MODERN FAMILY LAW)* 183-84, 221-22 (Seirin Shoin, Tokyo, 3rd ed. 1997); S. NINOMIYA, *KAZOKU-HO (FAMILY LAW)* 223 (Shinsei-sha, Tokyo, 1st ed. 2000).
- (28) See, e.g., FUKAYA, *supra* note 27, at 183-84; NAKAGAWA & IZUMI, *supra* note 27, at 9-12, 480-81; NINOMIYA, *supra* note 27, at 315-16.
- (29) For the concept of PI, see ROBERT TRIVERS, *SOCIAL EVOLUTION* 178 (Benjamin/Cummings Pub. Co., 1991).
- (30) See, e.g., FRANS B.M. DE WAAL, *GOOD NATURED: THE ORIGINS OF RIGHT AND WRONG IN HUMANS AND OTHER ANIMALS* (Harv. Univ. Press, 1998); *THE SENSE OF JUSTICE: BIOLOGICAL FOUNDATIONS OF LAW* (Sage Pubs., Roger D. Masters & Margaret Gruter eds., 1992).