

**The Incest Taboo:
From Freud to Now**

Alabama Psychiatric Physicians Association
Fall Conference - October 27, 2018

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June 10, 1929

Disclosure:

I have no actual or potential conflict of interest in relation to this program/presentation.

Why Freud believed what he believed...
 Human nature circa 1870 – 1960

- 1871: incest is common in nature (LH Morgan 1871)
- 1910: “a natural instinct in favor of it” (J Frazer 1910)
- 1889: incest taboo = “a passage from nature to culture” (EB Tylor 1889; L White 1948; C Levi-Strauss 1950)
- 1913 – Freud - repression of incest creates neurosis unique to our species – the Oedipus Complex (Freud 1913).
- Paradigm of human nature highly influential within social sciences for a century

Human nature reconsidered:
 1960-now...

- 1961 – Evidence incest is rare in nature (K Tokuda 1961)
- 1964 – Human incest avoidance adaptation (Y Talmon 1964)
- 1964 – Kin selection theory (WD Hamilton 1964)
- 1969 – John Bowlby – “Attachment and Loss”
- 1975 – E. O. Wilson – “Sociobiology”
- 1977 - Paul Sherman – first evidence supporting kin selection
- 1995 – Arthur Wolf – largest study of human incest avoidance
- 2008 – Bernard Chapais – detailed phylogeny of human kinship

Now...evidence indicates that human nature built substantially on adaptations we share with other primates and mammals.

Human nature reconsidered:
 1960-now

We possess a repertoire of evolutionarily ancient kin-directed behaviors found in all primate species.

- Kin recognition
- Attachment in early life
- Care giving
- Incest avoidance

Incest - current understanding

From anthropology and primatology 1961-now:

- Incest is rare in nature
- Rare because of costs of inbreeding
- Humans possess incest avoidance adaptation
- Incest avoidance adaptation has design limitations**

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From epidemiology 1980 - now:

- Incest and other forms of sexual abuse are common
(D Finkelhor 1980, D Russell 1984; V Felitti et al 1997, etc.)

Q. Why is incest and sexual abuse common if we possess incest avoidance adaptation?

Analogy: obesity, diabetes, cardiovascular disease are epidemic because design of human metabolism has not evolved to cope with evolutionary anomalies of modern life, e.g., McDonalds.

Major claim:
*Incest and sexual abuse are epidemic because design of incest avoidance adaptation has not evolved to cope with evolutionary anomalies of modern social life. Two design limitations – and the impact they have on risk for incest and sexual abuse - are examined.

For an incest avoidance adaptation to function adaptively...

- Individual must be able to recognize kin.
- Once kin are recognized how do we know the difference between familial and sexual affiliation?

MT Erickson 1993 Rethinking Oedipus: An evolutionary perspective. Am J Psychiatry 150, 411-16
MT Erickson 2005 Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.

Rethinking psychoanalysis: The perspective from contemporary evolutionary biology

Oedipal phenomena are not caused by repression of an innate propensity for incest. They are, instead, caused by disruption of an innate propensity to avoid incest.

- Disruption of capacity to recognize kin (Oedipus 1).
- Disruption of capacity to perceive difference between familial and sexual affiliation (Oedipus 2).

MT Erickson 1993 Rethinking Oedipus: An evolutionary perspective. Am J Psychiatry. 150:411-16.
MT Erickson 2005 in Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.

Part I. How do we recognize kin?

...and what does the design of kin recognition tell us about incest in modern society?

How do we recognize kin?

Edward Westermarck (1891):

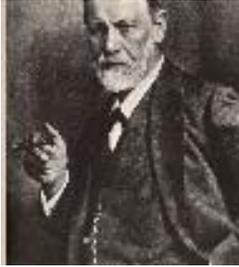
- ❖ Incest avoidance evolved because of costs of inbreeding.
- ❖ Ethological hypothesis: early close association = incest aversion = kin recognition
- ❖ Because those in close early association - in traditional human cultures - were invariably close kin - hypothesis was plausible.



E Westermarck (1891). History of Human Marriage. Macmillan, New York.

Edward Westermarck

Freud responds...



“ instead of assuming... from the prohibition of incest... there is a natural aversion... we ought rather assume there is a natural instinct in favor of it.”

Freud quoting Sir James Frazer in Totem and Taboo (1913)

How do we recognize kin?
Levi-Strauss - 1956



“The incest prohibition is...a kind of remodeling of the biological conditions of mating and procreation... (which know no rule as can be seen from observing animal life)”

C.Lévi-Strauss (1956). The family, in Man, Culture and Society, ed. H.L.Shapiro, Oxford Univ Press.

Biology of incest avoidance:
Early evidence - rhesus monkeys



“The rarity of mother son mating is even more remarkable when...behavior such as grooming, body contact, and mutual defense occur frequently between mother and some mature sons during mating seasons...”

D Sade (1968) Science and Psychoanalysis 12:18-38.

Incest avoidance in nonhuman primates



Incest avoidance found in all non-human primate species studied – including chimps and bonobos.

A Pusey 2005 - In Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.

How do animals recognize kin?



Prairie voles:

Rarely mate incestuously in nature.

Litters split experimentally to include biological and foster sibs

At maturity voles avoid mating with litter mates - whether bio or foster sib

But mate with unfamiliar voles – including with unfamiliar biological sibs

** What establishes incest avoidance is not kinship per se but early close association

L. Gavish et al (1984) Animal Behavior 23:362-66.

How do animals recognize kin?



Barbary macaques:

* Mating is promiscuous

* Mothers in close association with offspring from birth

* Fathers are not...

* At maturity mother-son incest avoidance is robust

* In natural settings father-daughter incest thought to be uncommon – due to dispersal

* But in research colonies – normal dispersal not possible – father-daughter incest is common.

J Kuester et al. 1994 Animal Beh.

How do animals recognize kin?



Common marmoset:

- Mating is by pair bonding
 - Mother, father, and older sibs all in early association with newborn
 - Incest avoidance exists in all immediate kin dyads
 - **Human kinship structure similar to that of marmosets (Chapais 2008).
 - **Suggesting norm for our species in hunter-gather societies was a very low prevalence of incest
- G Anzenberger & B Falk (2012) Int. Zoo. Yb.

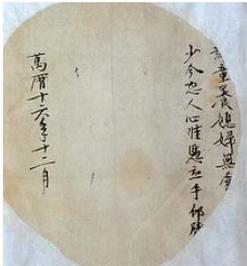
How do humans recognize kin?



Israeli kibbutzim:

- Communal farms
 - Children of different families raised together in peer groups
 - No cultural influences opposed peer group sexual affiliation
 - Yet peers virtually never dated or married provided they were in early association - 0-6 years (n= 2,769)
 - Findings support Westermarck
- J Shepher (1971) Arch Sex Beh 1:293-307.

How do we recognize kin?



Simpua marriage (Taiwan) (n~20,000):

- Couples betrothed in infancy.
 - Girl raised in boy's home
 - Married in mid teens.
- Findings:
- Strong aversion to consummating bond.
 - Divorce rate elevated (2.5x)
 - Fecundity decreased (38%)
 - Early association critical
 - Findings support Westermarck's hypothesis
- AP Wolf (1995). Sexual Attraction and Childhood Association: Stanford Press.

How do humans recognize kin?

Early study of incest - Weinberg 1955

- ❖ Six incestuous sib-sib pairs stood out
 - Both brother and sister desired the relationship
 - No evidence of coercion by brother
 - Sibs fully aware of incest taboo
 - Both lacked apparent guilt
 - Their sexual relationship often began quickly
 - And were passionate
 - Three of the couples married
 - And - all had been separated in early life and later reunited.

SK Weinberg (1955) Incest Behavior, Citadel, New York.

How do humans recognize kin?

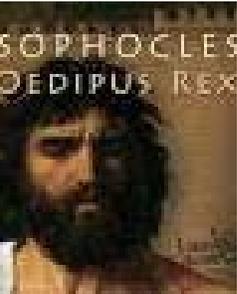
Access to Birth Records Act (UK - enacted 1975)

- Allows adopted persons over age 18 access to birth record.
- Finding: ~ 50% of reunited experience sexual attraction.

A 35 year old woman meets her biological father: "It developed very quickly, we hugged and kissed a lot that first weekend. His skin felt like mine and he smelled like me. I had a sexual dream about him, wanting it. I thought it was crazy but discovered he was open to it." (Greenberg and Littlewood 1995)

M Greenberg and R Littlewood (1995) British J Medical Psychol. 68:29-44.
For review see M Erickson (2005) In Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.

How do we recognize kin ?
(Oedipal complex type 1)



In literature where incest is a theme early separation is recurrent:

- Oedipus separated from mother at birth and raised by surrogate.
- Reunites incestuously with Jocasta.
- Myth describes design flaw in incest avoidance adaptation

M Erickson (2005) in AP Wolf, and WH Durham, (eds) Inbreeding, Incest and the Incest Taboo: The State of Knowledge at the Turn of the Century, Stanford Univ. Press, Stanford CA.

Why Freud believed what he believed...
(Oedipal complex 1 – disruption of kin recognition)

- Freud raised in early childhood by a nanny
- Forty years later in self analysis Freud recalls his nanny:
 "If ...I succeed in resolving my own hysteria, then I shall be grateful to the...old woman who provided me, at such an early age with the means for living and going on living.
 (letter to Fleiss, 3 October 1897)

Did Freud "recognize" his nanny unconsciously as kin – as his mother – and hence experienced incest avoidance with her?

Was Freud's mother a more distant figure – less early association – and not experienced fully as kin = diminished Westermarck effect?

S Freud (1985). The Complete Letters of Sigmund Freud to Wilhelm Fleiss 1887-1904. Ed. JM Masson. Belknap Press, Cambridge MA.

Summary: Kin recognition and incest avoidance

- Humans possess an incest avoidance adaptation.
- Design is homologous to other primates.
- Kin recognition for incest avoidance is profoundly unconscious – higher cognitive functioning not required.
- Avoidance depends on early association – not actual genetic kinship.
- Obvious design limitation...any influence that reduces early association may be a risk factor for incest.
- We know next to nothing about the specifics of early association, e.g., how much association, what defines early association, etc.
- But some degree of early association is critical
- Claim - the cause of a significant portion of incest and sexual abuse in recent history can be traced to cultural practices that reduce early association – relative to the natural history of our species.

Summary: How the biology of incest avoidance can inform understanding of the causes of sexual abuse

Unrelated males in household are very large risk for sexual abuse (10x), e.g., step fathers, step sons (A Sedlak et al 2010).

- Institute of Medicine report (2014) observes, "it is not clear how alternative family structures...act as causal factors in abuse."
- Biology of incest avoidance predicts, a priori, that unrelated males will be risk factor for sexual abuse because – on the whole – a lack of early association with young is likely.
- Many additional potential risks that reduce early association can be identified, e.g., military deployments, design of housing, etc.

Institute of Medicine (2014) New Directions in Child Abuse and Neglect Research, National Academies Press.

Biology of Incest Avoidance
Key published studies of Westermarck effect in humans

- Y Talmon (1964). *Am Sociological Review* 29:491-508.
- AP Wolf (1966). *Am Anthropologist* 70:873-85.
- AP Wolf (1970). *Am Anthropologist* 72:503-15.
- J Shepher (1971). *Archives of Sexual Behavior* 1:293-307.
- J McCabe (1983). *Am Anthropologist* 85:50-69.
- AP Wolf (1995). *Sexual Attraction and Childhood Association: A Chinese Brief for Edward Westermarck*. Stanford Univ Press, Stanford, CA.
- D Lieberman et al. (2003). *Proc. R Soc. Lond. B* DOI 10.1098/rspb.2002.2290
- AP Wolf (2004). Explaining the Westermarck Effect: Or what did natural selection select for? In Wolf, AP and Durham, WH (eds) *Inbreeding, Incest and the Incest Taboo: The State of Knowledge at the Turn of the Century*. Stanford Univ. Press, Stanford CA.
- D Lieberman et al. (2007). *Nature* 445:727-731.
- Cf. E Shor & D Simchai (2009). *Am J Sociology* 114:1803-42. Compare with A Marynanski & S Sanderson (2012). *Am J Sociology* 117:1503-08.
- J Antfolk et al. (2012). *PLoS* 7(11) e50613. doi 10.137/journal.pone.0050613.
- J Antfolk et al. (2012). *Evolution & Human Behavior* 33:217-223.

Incest avoidance in nonhuman species:
Abbreviated list of key publications

References:

- Amos, B et al (1993). *Science* 260:670-672 (Pilot whale).
- Archie, EA et al. (2007). *Molecular Ecology* 16:4138-48 (elephant)
- De Waal, F & F Lanting (1997). *Bonobo: The Forgotten Ape*, Univ of California Press, Berkeley.
- Hoogland, JL (1982). *Science* 215: 1639-41 (Prairie Dog)
- Nelson-Flower, MJ (2012). *J Animal Ecology* 81:875-82 (Southern pied babbler)
- Pusey, A (2004). Inbreeding avoidance in primates. In Wolf AP and Durham WH (eds) *Inbreeding Avoidance, Incest and the Incest Taboo: The State of Knowledge at the Turn of the Century*. Stanford Univ. Press, Stanford. (review of several primate species including chimpanzees, marmoset, baboon, gorilla)
- Reeve, HK et al (1990) *Proc Natl Acad Sci* 87:2496-00 (Naked Mole Rat)
- Tabakani, SM et al. (2012). *Naturwissenschaften* DOI 10:1007/s00114-012-0961 (review - insect species)
- Waldman, B et al (1992). *Amer Zoologist* 32:18-30 (Toad).

Part II. Once kin are recognized how do we know the difference between familial (non-sexual) and sexual affiliation ?

A great deal of incest and sexual abuse in humans occurs despite early association (JJ Freyd et al 2005)

Westermarck's hypothesis cannot account for this clinical reality.

Claim: a piece is not accounted for by Westermarck's hypothesis...the capacity to know the difference between familial (non-sexual) and sexual affiliation (MT Erickson 1983, 1989, 1993, 2005, 2006).

JJ Freyd et al 2005 Science 308:501.
 MT Erickson 1983 Thesis - Univ California, Berkeley.
 MT Erickson 1989 J Anth Research 45:267-91.
 MT Erickson 1993 Rethinking Oedipus. Am J Psychiatry, 150, 411-416.
 MT Erickson 2005 Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.
 MT Erickson 2006. J Clinical Neuropsych. 3, 110-120.

Does incest and sexual abuse occur in nonhuman primates despite early association?

Define incest as sexual engagement between mature kin
Define child sexual abuse as sexual engagement of mature with immature individual:

Given these definitions:

- ❖ Incest - despite early association – exists in nonhuman primates but is very rare and when observed is typically adaptive (e.g., G Anzenberger & B Falk 2012).
- ❖ Child sexual abuse equivalent is virtually non-existent in nonhuman primates (pers comm A Pusey, F de Waal, T Ziegler, S Alberts)
 - *Prevalence in humans ~ 22% (Felm et al 1998).
 - *Why?

G Anzenberger & B Falk (2012) Int. Zoo. Yb
 V Felitti et al (1998) Am J Prev Med 14:245-58.
 * Pers comm: Anne Pusey - U Minnesota, Frans De Waal - Emory, Tomi Ziegler - U Wisconsin, Susan Alberts - Duke University.

How do we know the difference between familial and sexual affiliation
 Hypotheses circa 1913-1977

I Evolutionary assumption: All social bonds are fundamentally sexual.

II Developmental assumption:

- * Freud (1913) - Oedipal fears = repression of sexuality
- * Fox (1962) – frustrated childhood sexual play = repression
- * Demerest (1977) – punishment in childhood home = repression

R Fox (1962). British J Sociology 13:128-50.
 W Demerest (1977). In Primate Social Development, Garland Press.

How do we perceive the familial-sexual boundary?

Familial bond hypothesis:

- ❖ **Key clinical prediction:** severe disruption of care giving in early life impairs subsequent capacity to perceive familial-sexual boundary
- ❖ Such individuals may know – cognitively – that familial-sexual boundary violations are wrong – but they do not possess felt sense of boundary that is typical across primate species.
- ❖ Such individuals are therefore far more likely to perpetrate familial-sexual boundary violations – *despite early association.*
- ❖ Hypothesis based in evolutionarily ancient biology and therefore makes same prediction for nonhuman primate species.

How do we perceive the familial-sexual boundary?

Evidence:

- Incestuous fathers experienced childhood neglect and abuse.
- Mothers in paternal incest families experienced neglect and abuse in childhood.
- Mothers who sexually abuse children were, themselves, victims of neglect and abuse.
- Boys who perpetrate sibling incest were neglected and abused.
- Priests who have perpetrated sexual abuse typically experienced neglect and abuse in their childhood.

JS Levenson et al (2014) Sexual Abuse: J Research & Treatment DOI: 10.1177/107906321453819
D Salter et al. (2003). Lancet 361: 471-76.
H Cavallin (1966). Am J Psychiatry 122:1132-38.
J Kaufman et al. (1954). Am J Orthopsychiatry 24:266-77.
LM McCarty (1986). Child Welfare 65:447-58.
NA Adler & J Schultz (1995). Child Abuse and Neglect 19:811-19.
R Sipe (1995). Sex, Priests and Power.

Perception of familial-sexual boundary impaired by childhood adversities (Oedipal conflict 2)

Sroufe and Ward 1980:

- 173 mother toddler dyads videotaped
- 9% of mothers sexually inappropriate with toddler
 - E.g., sexualized kiss to child
- Same mothers more likely to physically punish child
- *While being videotaped*
- Mothers who behaved in this way more likely to report abuse in their childhood.
- *Sexual abuse may be a disease of social perception whose etiology can be traced proximally to disrupted attachment and ultimately to the design of incest avoidance adaptation.

AL Sroufe & MJ Ward (1980) Child Devel. 64:1222-29.
* MT Erickson 2005 In Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.

Familial bond hypothesis and CSA

Child sexual abuse:

- Virtually non-existent in nonhuman primates
- Alarmingly common in our species
- Developmental hypothesis - severe disruption of early attachment.
- Perceptual sequelae – inability to perceive difference between the two most common forms of social affiliation in mammals – familial and sexual affiliation
- CSA = a symptom of a disorder of the biology of social perception – linked to incest avoidance adaptation.
- Medical hypothesis of CSA – a definable disorder of what broadly can be called the biology of human kinship.

MT Erickson 2005 In Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.
MT Erickson 2006 Clinical Neuropsychiatry, 3, 110-120.

The biology of incest avoidance is conserved across primate species... predicting nonhuman primates are as susceptible as human - dependent on developmental conditions.



Brian, bonobo chimp, at Milwaukee Zoo:

- Only non-human primate to experience equivalent of child sexual abuse – sodomized by father.
- Brian – self mutilated, OCD like rituals, curled in fetal position, screamed, etc.
- *** Father, perpetrator, was a research animal and reportedly suffered traumas in his life.

<http://www.theatlantic.com/health/archive/2014/06/brian-the-mentally-ill-bonobo-and-how-he-healed/372596/>

**Boundary violations despite early association:
A disease of recent human history ?**

Influences now common but rare or non-existent in evolutionary history:

- Drug & alcohol addiction – usurps neuro-biology of parental care.
- Modern disconnect between resources and pregnancy.
 - Natural history – limited food translated into temporary infertility.
 - Current – access to food but not necessarily to other needs.
- Modern lack of caregivers
 - Natural hx extended family part of hunter-gatherer band – multiple caregivers
 - Now nuclear family or single parent is commonly only option
- Modern lack of sources to teach parenting skills.
 - EEA – mothers, aunts, grandmothers.
 - Now – possibly no one to teach a new mother
- Etc.

Summary

- Incest avoidance adaptations evolved, presumably, because of increased morbidity and mortality to offspring (~30% in humans).
- Humans, as other primates, possess incest avoidance adaptation (e.g., kibbutz peer, simpua marriage data).
- The capacity for incest avoidance is dependent:
 - (1) On early association = kin recognition
 - (2) Adequately responsive care in early life = capacity for stable familial-sexual boundaries

Summary

- Design flaw I: Kin recognition – necessity of early association for incest avoidance
 - Prediction - any influence that reduces early association is risk factor for later incest or sexual abuse
 - Claim – many such risk factors appear to exist in the modern world
 - Evidence – 10x increased risk of sexual abuse of atypical family structure, e.g., having unrelated males in household (Oedipal complex 1)

Summary

- Design flaw II: Capacity to distinguish familial and sexual affiliation dependent on early attachment experience.
 - Prediction - severely disrupted attachment = later disorder of social perception – cannot subjectively experience boundary as is typical across primate species.
 - Evidence – severe neglect and abuse extremely common in individuals who perpetrate boundary violations despite early association (Oedipal complex 2).

The Incest Taboo: From Freud to Now

For a century it was widely accepted that incest was common in nature and uniquely rare in our species because of cultural influences (taboos)

It is now more plausible to argue the opposite is true. Incest is rare in nature and uniquely common in our species because of cultural influences (influences that disrupt the biology of incest avoidance).

Major claim: design of the biology of incest avoidance will prove fundamental to understanding the etiologies of sexual abuse - in its various manifestations – and for designing more effective programs to prevent abuse of this kind.

MT Erickson 2005 In Inbreeding, Incest and Incest Taboo: State of Knowledge at the Turn of the Century, eds AP Wolf and WH Durham, Stanford Univ Press.
MT Erickson 2006 Clinical Neuropsychiatry, 3, 110-120.

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How do animals perceive the familial-sexual boundary?



Figure 4. Wire and cloth mother surrogates.

Rhesus monkey females reared in isolation:

As mothers:

- High risk for physical abuse of offspring
- High risk for extreme neglect
- Sexually inept with some evidence of inappropriately sexualized behavior.

HF Harlow et al (1965) PNAS 54:90-97.
HF Harlow et al (1986). In From Learning to Love: Selected Papers of Harry Harlow, Praeger New York.
