

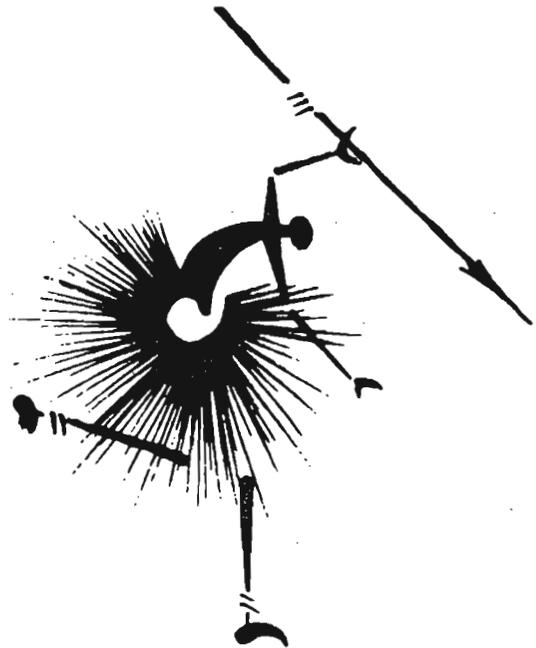
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# LAMBDA ALPHA

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A FEMALE'S VIEW<sup>1</sup>  
OF  
PREGNANCY AND BIRTH IN NACIREMA

by

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Southern Illinois University  
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Occasionally in the past, anthropologists have focused their numerous interests in humans and human diversity on a mysterious land known as Nacirema. Described earlier by Linton (1936) and Miner (1956:503-507), we now know that Naciremas are a North American group living in the territory between "the Canadian Cree, the Yaqui and Tarahumara of Mexico, and the Carib and Arawak of the Antilles." We also know Nacireman culture is characterized by a highly developed market economy, a culture hero known as Notgnihsaw, much magic and religion, and an overriding concern with improving the human body through ritual and ceremony. More recently, we have been briefly introduced to the secular Nacireman language (Walker 1970: 102-105) and some of the purposes of the Nacireman academies (Muller 1971: 267).

Although Miner's (1956: 506-507) comments contain a few references to pregnancy and birth in Nacirema, first-hand acquaintance with this aspect of Nacireman culture has suggested that in this sphere, as in others, the beliefs and practices are much more elaborate than perhaps expected. Many of these practices are related to medicine men, latipsoh, vestal maidens and attitudes toward the human body identified earlier by Miner (1956). As such, an elaboration of them aims at expanding our knowledge of these areas, as well as of the Nacireman female and other Naciremans in general.

For one to be a "true woman" among the Nacirema, it is necessary to achieve a state which is supposedly highly desirable; namely, the state of pregnancy. Until recently, legal codes made it next to impossible, legitimately, to terminate "unwanted pregnancies" under safe medical conditions, and even now, proponents

of opposing ethical, moral, and religious views are fighting to reverse new national rulings which legalize abortions.

Everything in the enculturation of a female Nacirema ingrains a desire to become pregnant; very early in life, girls learn from various media as well as from adults that a female's role is "to have babies". Babies are described as "bundles of joy" and a girl soon begins playing "little mother" with dolls which drink bottles, cry, wet, and make sounds, and other supportive toys, such as cradles, clothes, brooms, tea sets, pots and pans, carriages, and paper dolls. The details about how to achieve this miraculous state of pregnancy, however, are not as accessible to the young female Nacirema. The secrecy which surrounds this subject reflects Nacirema ambivalence, because it suggests that while pregnancy is marvelous, at the same time, it is also evil, dirty, and physically unnatural, according to Natirup ethics. About the only thing that one learns early in life is that it is only proper to become pregnant if one is married, and that if one does otherwise, it is, indeed, bad. In the past, Nacireman homes for unwed mothers abounded, and such "bad" girls were closeted away as untouchables, either in such institutions or with distant friends and relatives, mainly to reduce further shame which their condition brought upon the family. The baby itself, when born, was also slightly untouchable, being termed a bastard or an illegitimate (unwanted, unnatural) child. Although this attitude is undergoing change at present, and some high schools now allow pregnant girls to matriculate, the unwed mother of the "fatherless child" still remains an object of sympathy as well as scorn.

Although some Nacirema females now verbalize a lack of inter-

est in becoming pregnant, and are supported in this decision by spouses and peers, in general, it is expected that once married, the female will become pregnant. Nacirema urges planned pregnancies and "the timing" of offspring arrivals, and shamans prescribe many different kinds of medicines and devices to assist with this planning, thereby delaying conception. However, when the "time is right" there are an equal amount of medical advice and technology as well as some religious and astrological beliefs Nacireman females can turn to for assistance in achieving the desirable state of pregnancy.

Provided that a Nacirema female becomes pregnant when married, Nacirema demands utter joy about the condition on the part of both prospective parents. While some jokes about "Oh, no!" responses to the knowledge that number three or four is on the way are accepted as semi-appropriate with increasing frequency as some Nacirema become more concerned about limiting the number of their offsprings, the general expectations are that the couple acknowledge the fact that the future baby is "a gift of God," "life's most precious thing," "Life's most blessed event," a future "bundle of joy." The pregnant female immediately becomes somebody "special," someone who is in a sacred state, someone who, in nine months, will be able to experience "these few moments of joy." Yet the ambivalence Naciremas feel toward pregnancy remains implicit, because the pregnancy itself acknowledges an act of sex. Thus, the female is often described not as pregnant, but rather, in "that condition," or "nature's way."

Taboos are deeply ingrained and associated with pregnant females and the kin who surround them. Ritual restrictions immed-

imately enter the picture and continue with increasing elaboration and enumeration as the conclusion of the pregnancy nears. The number, intensity and type of taboos vary somewhat according to beliefs and practices of a particular shaman, (called MDs or gynecologists), friends' comments, "old wives' tales" and one's adherence to them, the pregnant female's own upbringing, and sometimes, but only rarely, special medical conditions.

Diet immediately becomes supplemented by iron pills, vitamin capsules and other prenatal contributions. Foods are tabooed or suggested according to the amount of nausea or "morning sickness." This negative state, culturally expected as a natural accompaniment of "the condition," and an important cultural indicator of the fact that one "is going to have a baby," is another expression of Nacirema psychological ambivalence toward pregnancy.

Activities become defined; it becomes excusable to nap, put one's feet up, and as pregnancy continues, to drop out of sports such as riding, swimming, walking, skating, driving the car, and out of certain types of employment. In fact, many Nacirema employers have "maternity leave" policies, written to make certain that females visually disappear before their "positive" condition can literally get in the way of their job, or upset clientele, be these second graders or people in a waiting room. Sexual activities also become taboo, but here, the restrictions go into effect about six weeks before the "due date" and are removed from four to six weeks after the "blessed event" has occurred.

Behavioral changes are also expected in the Nacirema mother-to-be. Pregnant females are culturally expected to tire easily, become increasingly emotionally unstable, and to have cravings

for certain foods, such as pickles and ice cream. These cravings, which are expectably insatiable, are expected to be expressed verbally at inconvenient hours, with 3 a.m., of course, being preferred in common folklore. Gradual withdrawal from social events is also encouraged and allowable, since females are supposedly uncomfortable in this sacred state, more apt to misjudge distances and lose their balance, cry, and become easily upset. Such behavioral changes are further indicators of one's condition.

In Nacirema, various economic institutions respond to pregnancy by cornering the market on this "blessed condition." Much materialistic paraphernalia, often complicated in nature, has been developed; this paraphernalia is constantly elaborated and updated and is advertised as "essential" and "absolutely necessary." Maternity clothes are usually the first way in which these institutions make themselves known with special expandable clothes, the Nacirema female can hide her "desirable" condition, and continue to look stylish and attractive, thereby fulfilling Nacirema male expectations of females as sex symbols, even while in this condition. In other materialist ways, too, the female is culturally expected to prepare for the "bundle of joy." For example, collections of baby clothes, known as layettes, are well described in numerous sources, including pamphlets in shamans' offices, five and dime stores, etiquette books, and books on babies by leading Nacirema authorities.

One buys some of these layette items by one's self, and obtains others from friends, family, or through wider circles of females who attend reciprocal exchanges called baby showers. There is also the possibility that individual talents may enable

the expectant mother or her friends to create layette items with needle and thread, sewing machine, crochet hook or knitting needles. Gifts of this nature are truly valued, being associated with personal energy, thought, and a donation of "precious time."

The pregnant female, and sometimes her husband too, also obtain "basic" baby equipment and prepare a nursery corner or room in their house for the future baby. It is believed that without this equipment, one is incapable of rearing a baby properly. The "basic items" in this sphere include: a cage-like bed called a crib, mattress and its linen which includes a special protector designed to limit damaging effects of baby's feces and urine, bathtub and dressing table or a combination of these two (a bathinette), cage-like playpen (preferably portable), diaper bag, diaper pail, baby carrier, high chair, car seat, stroller, walker-jumper chair, carriage, "potty" chair, play table, nursery-night lamp, mobiles (to attract baby's attention and increase its chances of being aware and alert), baby toilet items (including nail scissors and thermometers), feeding dishes and utensils, a lip plug called a reificap, and bottles, unless the female is one of the few who insists that she will, indeed, have enough milk to breast feed.

When "the condition" becomes visible, the Nacirema folklore increases noticeably. Pregnant Nacirema females should know if they want a boy or girl, and should be prepared to explain why to anyone who asks. It is expected that if the baby is the second child, mothers will want a child of the opposite sex. The female, usually in conjunction with her husband, and sometimes in response to pressure from kin, begins to consider names. Again, manufacturers

stand ready to assist, with booklets which list names, their meanings and translations, personality qualities usually associated with them, and occasionally famous people with these names. As the baby begins to kick and move internally, the sex of the fetus becomes "obvious" to other Nacirema observers. Here, folklore is variable, and one can hear that either boys or girls are most active, kick harder, sleep less, have stronger, faster heart beats, and are carried higher in the womb. From the seventh through ninth month the Nacirema female becomes an object of increased sympathy because of the enlarging size of "the burden" she carries and her increasing feelings of uncomfortableness. About the seventh month, the pregnant female begins to see the shaman with increasing frequency, and makes some choices about method and sometimes, place of delivery. Most Naciremans prefer parturition in isolation from most kin, and choose to deliver in the latipsoh formerly described by Miner (1956). They also generally prefer to have their baby without conscious awareness of the final stages of this marvelous process, although an alternative procedure, "natural childbirth" is also available, complete with training sessions in muscle control, breathing and exercise which one pursues during pregnancy.

Nacirema folklore carries numerous helpful hints about how the pregnant female "will know that it's time", but at a first birth, none of these clues may be very helpful. Whatever the actual signs individually experienced by the Nacirema female, when it is time to go to the latipsoh, another cultural myth unfolds. The father-to-be, who during the nine months has been slipping further and further into the background in terms of attention from other Nacirema, is expected to behave in prescribed manners. These

include giving his silently amused, smiling wife a hurried trip to the latipsoh, if he is indeed present when needed, and beginning this trip with distraught culturally expected behavior which is precipitated by his wife's statement, "It is time now, dear." At this moment, Nacirema males become distraught, disorganized, and flustered, to such an extent that they may depart for the latipsoh without their wives, luggage, appropriate identification cards, a full complement of clothes, car keys and/or gas in the tank.

Upon arrival at the latipsoh, the Nacirema bureaucracy takes over to add red tape, structure, frustration, and some humor to the birth process. If the female is not in "hard labor," she is deposited in a wheelchair and taken to an admitting office to give vital statistics. Then, or earlier if necessary, she is taken to a "labor room." Here she is stripped of her clothes, dressed in a latipsoh gown and "prepped", i.e., shaved and given an enema. All of these events, as Miner (1956) has already indicated, are sources of severe psychological shock for Nacirema. Then the female is told to lie down and "work" on her "labor." Even at this stage, there are behavioral codes which must be followed by Nacirema females; for example, one does not ask for water, scream or cry in pain, or upset other residents. If one is not having a baby "The Army Way," and latipsoh policies allow husbands in labor rooms, the female must also not upset him. She is further encouraged by vestal maidens not to soil the bed after it has just been changed, and at all times, to "cooperate." She must not hit the vestal maidens or their aides or bite them, or use foul language, and at all times, she must try to "hurry up." If the labor process should stop, whether or not for medical reasons, it is

immediately the Nacirema female's fault for not working or trying hard enough. She may then be encouraged to walk up and down the maternity floor halls, despite earlier statements that to do so will damage the baby. If labor does not start again because of this walking or pacing, the labor is defined as "false," and the female is usually discharged as a failure until the labor becomes "real." If, on the other hand, labor progresses quickly and the female pushes the buzzer, calls the shaman, says she is "in stage 2" and suggests that the special area of the temple, the delivery room be made ready, the female may be encouraged "to stop rushing things" or told to "hold back" until the bureaucracy is ready. And if, of course, the labor has been medically induced, the female may be attended by latipsoh employees whose verbal and non-verbal behavior clearly communicate that such procedures are not "the right way" to have "a gift of God."

The delivery room within the latipsoh temple itself is fascinating, if one is conscious and chooses to watch Nacirema shamans and vestal maiden team work. The female is taken to the delivery room on a wheeled table and sometimes assists in her transfer to the special operating table, designed specifically for births. Her husband may be allowed in this sacred area as an antiseptically gowned observer, but many latipsoh prohibit this because of a belief that husbands will not tolerate the sight of the process without fainting and thereby become additional burdens. At some latipsoh, a shaman one has rarely seen before, because of a rotating arrangement at a clinic, will appear to assist you because of being "on call". In any case, if the female is lucky, once in the delivery room, the shaman, most likely male, becomes divorced from Nacirema bureaucracy, and deals solely with

her and her baby. The most sacred stage, the third one, the BIRTH, is now at hand. Other latipsoh personnel, however, may not be so oriented. If "natural childbirth" methods are not being utilized, anesthesiologists may refuse to give gas or other numbing agents because a particular vestal maiden has forgotten to bring an all important document, the chart, from the labor room, or someone may tell the shaman to delay the birth because the sanctifying presence of another higher-ranked personage is needed in the temple for all such events. Again, Nacirema female behaviors are well defined; she must lie on the delivery table with her feet in stirrups, even though she may have already decided during "stage one" that it would be physiologically more natural to squat. Furthermore, she must not move her arms or hands, or they will be tied down, and she must concentrate on "cooperating with the shaman and pushing out the "bundle of joy." One may be allowed to watch the miracle through overhead mirrors, but more likely, only the shaman's back will be reflected.

Once the "bundle of joy" appears, there is its initial cry (which often is hastened by a swat) and the announcement of the sex of the baby. Then the baby disappears while the Nacirema female finishes delivering all of the after-birth and is medically "repaired" from the delivery. The baby is cleaned, weighed, measured, swaddled, and after vital statistics are recorded, taken into an antiseptic room called the nursery, where there are other little basket beds (bassinets) and other bundles of joy. The father, who during all of this time usually remains in a latipsoh waiting room, smoking, flipping through magazines, and pacing nervously, now re-appears and often meets baby through the glass in the nursery room. After this initial view of the swaddled, red,

squalling "bundle of joy," the shaman emerges to congratulate the father on the fine..., and to confirm this congratulations by a handshake or a pat on the shoulder or back. Providing that everything is alright medically with both the baby and the mother, the father is expected to be elated. After a brief chat with the shaman about medical matters, the father next visits with his wife if she is conscious, before disappearing to follow still other culturally expected behaviors. The most important of the ensuing rituals are the telephone calls announcing the event, x's sex, weight, height, arrival time, and name to in-laws, siblings, and close friends. Then father may return home to celebrate, inform waiting offspring of the results or perhaps, sleep. He is allowed, by unwritten rules or couvade procedures, to take a day off from work because he is tired from his ordeal. When he returns to his job, he is expected to spread the news to colleagues himself, shaking hands with males when congratulated by them, and giving symbolic gifts of cigars to other males. Even here, Nacirema industries provide a special variety of cigar with bands which through color or printed message, announce the sex of the bundle of joy.

The female remains in the latipsoh, seeing the baby only at feeding times which are determined by the nursery staff, until she can amble to the nursery window. When the baby is brought in to its mother by the vestal maidens, it remains mysterious, mainly because of its clothing. Besides a diaper and undershirt, the baby is swaddled in a receiving blanket, wrapped like a triangular bunting and composed of cotton sheeting. Mothers are told not to disturb the clothing; evidently to expose the baby would contaminate it. At other times, the baby remains in the antiseptic,

temperature-regulated nursery in its basket, which bears the vital statistics of name, arrival time, height and weight, and shaman's name on a blue card, if a boy, and a pink one, if a girl. These colors are also reflected in many of the initial year layette items, so early sex identification is non-verbally communicated to other Nacirema. The only other link the baby has with its mother during this time in most latipsoh is the latipsoh identification bracelet, made of plastic and clipped to both the mother's and baby's wrist immediately after birth, while both are still in the delivery room. This bracelet contains similar information about her. In a few, more progressive latipsoh, after birth, babies may "room in" with their mothers, or be with them twenty-four hours a day, minus daily weighings after feedings and other rituals. However, in many cases, the expense of such arrangements or the latipsoh philosophy about a baby's needs prohibit this alternative.

While in the Latipsoh, the Nacirema female often receives family visitors, flowers, cards, and sometimes gifts for herself, but more often, for X. She is evaluated medically with regularity, and encouraged to get back in shape as soon as possible. The Nacirema starts this process by getting out of bed, walking to the bathroom and the shower, and then down the hall to the nursery; for the new mother, the goal of this period is one of recovery from the birth ordeal, and recovery includes re-learning how to navigate and sit with the least amount of discomfort, or as one should not admit, pain. The goal of most concern to vestal maidens and shamans during this period is the regaining of regularity and control of excretory functions.

Nacirema commercialism continues to affect the new mother

even while she is still in the latipsoh. Baby photographers, special introductory packets of baby food, formulas, lotion, diaper cream, soap, breast cream, and disposable disapers, and coupons for repeated offers of the same all come her way. She is supposed to familiarize herself with these items during her free time, and then give and check vital statistic information for use on X's official birth certificate before departing.

Whenever the father comes to the hospital, and he is expected to do so, he is continually treated as if he were diseased. In latipsoh not practicing "rooming-in," rules decree that father may not touch his child during its stay in the latipsoh, and that if "the babies are out" (of the nursery), he must disappear into the germ-ridden waiting rooms, while the babies are carried through the same germ-ridden halls to their mothers' rooms. There, for some reason, germs disappear; perhaps they are neutralized by the presence of the bundle of joy itself. Only after father has given departure gifts to the temple, or made arrangements for delayed gift giving and brought the car to the exit, and only after his wife has arisen from her final ride in the wheelchair and has been seated in the car, is the father allowed to handle the bundle of joy. Prior to this, his involvement has been as many visits as possible to the latipsoh during structured visiting hours, walks to the nursery window, and discussions with his wife about what clothes X will wear home. Father usually brings these clothes to the latipsoh, and here, the bestal maidens usually reinforce layette lists by insisting that X cannot emerge into the real, outside world without wearing multiple diapers, pins, rubber pants, undershirt, night shirt, and various layers of outer garments whose amount often show a minimal

relation to the climate and weather.

Upon returning home, if X has siblings, a phenomenon called sibling rivalry is to be expected. This phenomenon, well described in authoritative Nacirema books, is semi-understood, but also a source of worry since its behavioral manifestations threaten the helpless bundle. The Baby must be protected, and the Nacirema mother now becomes the supreme protector. In addition to warding off subtle or not-so-subtle hostility directed at X by siblings, the Nacirema mother is responsible for making sure that baby is constantly clean and antiseptic. Lip plugs and toys must be thoroughly scrubbed should they drop on the floor or be handled by anyone else, and of course, the baby must be kept in clean, fresh, odorless, yet sweetsmelling diapers. These should be cleansed by agents such as "Diaper Pure," if not by a professional diaper service. This latter responsibility is automatically verbalized as one of the most distasteful aspects of motherhood, and one that will become increasingly so as spinach and other foods are added to the diet, causing "disgusting-looking" feces. But the Nacirema mother knows that in the future, X will be potty-trained, and this present unpleasantness, which perhaps father can be convinced to handle, will decline and then disappear. While distasteful, the mother is rewarded by direct contact with first-hand proof of the all-important regularity of the baby.

In addition to these responsibilities, the Nacirema mother is expected to keep the home clean and quiet, so the baby is not disturbed. She must also protect the baby from the outside world, by limiting visitors therefrom, especially those who may have had any contact with colds or other sickly Nacirema. Taboos on visitors vary with the kinship status of the visitor, season of the

year, and guidelines suggested by individual bundle of joy shamans, now termed pediatricians. In most cases, restricting visiting rights are observed for several weeks.

Protecting the baby from internal and external conflicts and diseases occupies much of the Nacirema mother's time; that which is left over is appropriately channeled into getting the baby "on a schedule." This consists of establishing feeding times, either in response to time tables authored by the shamans or the baby's own demands. Babies who do not readily respond to this are called "uncooperative" and "bad," and are viewed as sources of annoyance which can only be surpassed by those who spit up, show signs of fussiness, are "colicky," and later, who fuss during teething. In these duties, the new mother can expect to receive assistance, ideally from her own mother, rather than her husband. Her mother, or rarely mother-in-law or close friend, comes to stay during this period, ostensibly to assist the new Nacirema mother and teach her how to handle X with a generation's worth of know-how and expertise, which very often does not reflect technological advances in baby merchandise or medical philosophy. Such advice, of course, can always be augmented by helpful hints in parental magazines, designed especially to answer the most common questions of Nacirema mothers.

While in the latipsoh or during the early days at home, especially if the female is an unnatural being called a "nursing mother," she may expect to experience what Nacirema terms "post-partum blues." This belief refers to a general depression about the baby, physical discomfort, new responsibilities, and the now obviously forthcoming changes in life style. Such blues are understandable and allowable in Nacirema, if not verbally expressed

too often, and if never expressed through open hostility toward the "bundle of joy." The Nacirema female learns about these blues from other Nacirema females and from authoritative books and magazines. She is also aware that these blues may return after she is home, either immediately, or directly after the departure of her assistant. When experiencing these feelings, the Nacirema female knows that it is not appropriate to dwell on them or encourage their constancy. To do so would imply to other Nacirema that she had mixed feelings about the baby and motherhood.

Early during the female's time at home, if not before her departure from the latipsoh, birth announcements are prepared to tell friends and acquaintances (but very often only about half of those on a Nacirema Christmas card list) of X's arrival. These announcements, which one must again purchase, come in various styles and degrees of formality. They may be engraved or not engraved, on formal or note paper, and they may or may not carry a standard message such as "My color is blue," "From the hand of God a little child is entrusted to us," or "It's a girl." Whatever the style, the announcement indicates X's birth date, name, sex, weight and length, and the name of the proud parents. Such announcements are often used with X #1, but not as frequently for X #2. Upon receipt of an announcement, friends usually send or bring gifts to the baby. Once again, these are usually items which are deemed "necessary" for X's layette during the first year of life. If proximity allows and restrictions on visitors from the outside have been lifted, gifts are often delivered in person, so other Naciremans can "see the baby." The new mother holds an honored position during this entire period. She has now fulfilled herself and can truly claim to be a Nacirema woman. It is obvious

that all of the values Naciremas have regarding the sacred pregnancy state and bundles of joy are reconfirmed during the visits of other Nacirema, who feel that they "just must come over and see the baby." Some of them evidently come because they enjoy brand new babies, while others come out of a sense of duty or curiosity (in some cases, to make certain that everything really is alright with X). Whatever the reason, visitors always discuss in X's presence, whether X looks like Mommy or Daddy. Again, the Nacirema expect certain responses from Mommy and Daddy during these conversations, and it is definitely inappropriate to suggest that X just looks like a baby or that X looks like itself.

The period of going to visit the baby lasts for about two months, and as the newness of X wears off and the sexual abstention period comes to an end for Mommy and Daddy, so do many of the Nacirema rituals connected with pregnancy and birth. However, others emerge to guide parental steps and decisions throughout the later years of child-rearing, and throughout it all, there is no decline in baby-oriented commercialism. For example, giving birth in contemporary Nacirema makes the female and her spouse eligible for unknown, innumerable mailing lists, and for at least six months after X's arrival, Nacirema businesses contact Mommy and Daddy about new health and life insurance plans which cover the family, and birth control methods which allow planning for the next bundle of joy. Parents also receive coupons for discounts on baby food, feeding utensils, age-graded clothes, and occasionally for toys. Free mail order catalogs advertising the latter, however, are more typical. These introduce parents to age-graded toys designed to stimulate the child

intellectually and give it a physical and mental "headstart" in the long race toward maturation and adulthood. Mommy and Daddy also receive discount offers on diapers and diaper service, Mother Goose nursery decorator sets, and photographs. The latter, in special situations such as memberships in "Aunt Mary Clubs," can bring the family special discount rates for family portraits and regular age-graded portraits of X. Eventually, however, these too fade away, and until Naciremas go through the annual ritual known as income tax, and get another financial discount for the appearance of X, all that is left, outside of the changed life style, is the knowledge that one has now experienced pregnancy and birth in Nacirema.

## NOTES

<sup>1</sup>The author wishes to thank her husband, Theodore R. Frisbie, and two other colleagues at Southern Illinois University, Joyce Aschenbrenner and Ernest Schusky, for their critical reading of earlier versions of this paper. Appreciation is also expressed to several other Naciremas, namely mothers whose in-depth accounts of personal experiences with the pregnancy-birth process suggested the feasibility of this paper. These women include: Jane Denny, Darlene Martin, Alison McGee, Lucretia Ottaway, and Sheila Ruth.

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CONGENITAL HIP DISEASE:  
OCCURRENCE AND ETIOLOGY

by

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## CONGENITAL HIP DISEASE: OCCURRENCE AND ETIOLOGY

In this paper I will summarize recent studies on the occurrence of congenital disease of the hip joint, one of the commonest skeletal disorders. I will also review current theories on the etiology of congenital dislocation of the hip (CDH), emphasizing those which discuss its relationship to persistent generalized joint laxity.

Congenital dislocation of the hip was described by Hippocrates and recognized by him as a congenital disorder, but the exact nature of the abnormality is still controversial. According to Rabin (1965), radiographs of newborns show too little ossification for accurate interpretation. In older children the defect appears as either frank dislocation or as a deformity of the acetabulum with underdevelopment of the femur but without complete dislocation. The latter condition is called hip dysplasia or subluxation. Both dislocation and dysplasia are considered to be manifestations of a single disease, but their relationship and the primacy of either condition is not yet clear. In various papers published before 1960, it was stated that hip dysplasia was the primary abnormality. According to this theory an increased degree of slope to the acetabular roof provides inadequate support for the femur. Dislocation results from the subsequent stress of motion and weight-bearing. In more recent studies, it has been proposed that the basic abnormality is hip dislocation which is present at birth. Many cases identified at birth become stable and normal within a few weeks, but a small percentage retain a

complete dislocation or show radiographic evidence of dysplasia. As Rabin notes (1965:P.2) under this concept "hip dysplasia, characterized by a shallow acetabulum, increased slope of the acetabular roof, and late development of the proximal femoral epiphysis, is secondary to and represents a recovery stage of hip dislocation". The recovery may proceed to normal or the patient may remain abnormal.

Hip abnormalities have been found in archaeological specimens from many parts of the world. Brothwell (1973:P.155) cites reports of congenital luxation (dislocation) of the hip in a Neolithic specimen from France, an ancient Peruvian, pre-Columbians in America, an early Iron Age skeleton in Greece, five specimens from one location in Nubia, and a Saxon skeleton from Guildown. Anderson (1965) describes a skeleton from Tehuacan which shows bilateral hip dislocation together with spina bifida and spondylolisthesis. Wells (1963) reports that osteoarthritis was the commonest disease identified in Anglo-Saxon and early Post-Saxon remains, but that there has been a disproportionately low occurrence of the disease in hip joints. One of the cases he examined exhibited CDH in the left hip with a flattening of the femoral head plus supero-posterior extension of the articular surface of the acetabulum.

The incidence of CDH varies in different populations according to several recent studies. Comparison of these studies is probably of limited value since the criteria for diagnosis were not standardized. Major sources of error include the age of the patient at examination, qualification of the examiner, criteria selected for diagnosis, quality and quantity

of birth records and neonatal or fetal death reports, and availability of follow-up data. The usual figures given for incidence of CDH are from Europe and North America. It is known to be rare among Negroes, Bantu, and Chinese, but has been reported as more common among Navajos, Lapps, and certain regions in Japan and northern Italy. Wells wrote in 1964 (P.40) "Congenital dislocation of the hip appears occasionally in cemeteries from most parts of the world, but it attains exceptional frequencies, up to 10%, in Apache, Salteaux, and some other Amerindian groups". In a 1950 report Corrigan and Segal found prevalence of CDH in a Manitoba Indian community of 60 per 1,000. These ranged in age from 2 to 74 years and the study did not include newborns, so that the neonatal incidence is unknown. In 1962, Barlow reported that one infant in sixty in Manchester, England, was born with instability in one or both hips. Of this number over 60% become normal within the first week of life, and 88% within the first two months. The remaining 12% represent true cases of CDH and will persist unless treated. The overall incidence in this population was 1.55 per 1,000. MacKenzie (1972) presented a table of comparisons of incidence of neonatal abnormal hips as published in recent literature:

RESEARCHER/DATE	TOTAL EXAMINED	ABNORMAL HIPS	INCIDENCE PER 1,000
Palmen/1961	12,394	70	5.65
Rosen/1962	31,200	68	2.18
Barlow/1962	9,289	139	14.97
Stanislavljevic/1964	6,000	29	4.84
Weissman/1966	16,841	45	2.68
Smaill/1968	6,000	24	4.0
Mackenzie/1970	76,675	1,671	21.80

These surveys were all northern European and all were done after

1960 in response to the work of von Rosen (1962) and Barlow (1962) who demonstrated the possibility of diagnosis of CDH at birth.

Diagnosis at birth is based on the following criteria:

1. Ortolani's test - with hips and knees flexed the hips are slowly abducted. In dislocation the femoral head will slip back into the acetabulum with a visible and palpable "click".
2. Asymmetry of the hips and gluteal folds.
3. Restricted abduction with abduction contracture on opposite side.
4. Tendency to dislocation with manipulation.

In his study of a Navajo population of 2,300 at Many Farms, Arizona, Rabin (1965) divided the target population into two groups: adults aged 30 to 50 years and children aged one to six years. These groups were examined and radiographed for evidence of hip dysplasia and dislocation. The dysplasia rate was 0.7% in children and 2.6% in adults. Rabin's study offered an unusual opportunity to observe the natural history of untreated CDH as no treatment had been available for the adults and treatment was rejected by Navajo parents for their children. Observation of children through the time of the study showed that three-fourths of the cases diagnosed as dysplastic showed marked, spontaneous improvement to normal or near normal. In the adult population aged 30 to 50 there was no significant increase in the occurrence of osteoarthritis except for a few cases of dislocation or severe dysplasia. The Navajos did not consider the disease particularly incapacitating or worth treating unless there was associated pain. They sometimes recognized the disease as congenital and they explained these cases in

various ways: the pregnant woman who had been butchering had cut through the animal's joints, or the husband had twisted a horse's legs while branding or castrating it. The characteristic limp was often assumed to be caused by an injury in which cases, the parents would sometimes resort to a Navajo curing ceremony. The offer of surgery for CDH was generally refused. In general, the Navajo did not accept the idea that CDH is a disease since an affected individual could still function freely in the traditional society.

Other groups of Navajos were among the Indians examined by radiologists at the Phoenix Indian Medical Center. Goldman (1972) published a report on the evaluation of pelvic x-rays taken for various reasons between 1955-1970. Both untreated and unrecognized CDH was found among all age groups, but complaints related to the disorder were rare.

The high prevalence of untreated CDH in Corrigan and Segal's 1950 study of Indians at Island Lake, Manitoba, also presented an opportunity to observe the course of the untreated disease. The Island Lake population in 1949 totaled 1,253 and was composed of three distinct totems and many different families. Diagnosis on the basis of history, physical examination, and radiography disclosed 44 living cases of CDH. The characteristic history was of a lurching or waddling gait dating from the first attempt to walk. The physical examination showed obliquity of the hips, asymmetry of the inguinal, labio-femoral, and gluteal folds, shortening of the affected leg from one-quarter to two and one-half inches in unilateral cases, displacement of the greater trochanter of the femur in relation to the anterior superior spine of the ilium and the ischial tuberosity, and in bilateral

cases extreme lumbo-sacral lordosis. In all cases there was a limitation in the range of abduction of the affected hip and a positive Trendelenburg sign (the inability to maintain the pelvis in a level position when weight is borne on the affected hip). The positive Trendelenburg sign is apparently the consequence of the disorientation of the levering action of the gluteus medius. Radiography of the pelvis with the subject standing showed hip dislocation in 43 of the 44 cases. The femoral head or its epiphysis was displaced above the level of the acetabulum. In young children the epiphysis was located external to a line perpendicular from the outer edge of the acetabular roof and above a line through the upper limit of the ischial bones. In this group the proportion of unilateral to bilateral dislocations was 6:5 and the proportion of females to males affected was 6.5:1. Genealogical studies were made to determine the relationships of affected individuals. A genealogical chart was prepared to show the examined propositi and all relatives living or deceased who were suspected of having the disease because of an anomalous gait. A total of 94 known or suspected cases appear on the chart and all are connected by blood relationship. Corrigan and Segal concluded that there was strong presumptive evidence that the primary etiology is genetic.

Wynne-Davies (1970a) conducted a survey of 589 children examined at orthopedic clinics in Edinburgh and Glasgow or collected from a large random sample of hospital records with the purpose of comparing the factors affecting neonatal and late-diagnosis CDH. As noted before the incidence of neonatal CDH appears to fluctuate more widely than some more easily recognized

deformities. Wynne-Davies gives figures from recent surveys in England and Scotland ranging from 3.9 per 1,000 to 15 per 1,000 live births (in the latter study, Barlow/1962, half of the hips were classed as unstable, not dislocated -- see chart, P. 3). Surveys for CDH before neonatal diagnosis became common indicated an incidence in the British Isles of about 1 per 1,000 and Wynne-Davies accepts this figure as reasonable for late-diagnosis CDH. All of the identified cases in her study were analyzed for environmental and genetic factors previously proposed as affecting the incidence of CDH.

Environmental factors reported to have significance in the incidence of CDH include paternal age, birth order, pregnancy history, season of birth, and social class. In Wynne-Davies' study no significant difference could be attributed to paternal or maternal age, but the frequency in first-born children was highly significant for both neonatal and late-diagnosis groups. An increased number of breech presentations or versions was reported in this and earlier studies, but breech presentation is also more common in first-borns. CDH births were more common in the winter months in both neonatal and late-diagnosis cases. In social classes 1 and 2 (i.e., professional and managerial), there was a significant increase in the neonatal CDH group, even though it is likely that in recent years a larger proportion of lower classes are seen regularly at clinics.

Wynne-Davies discusses three aspects of the heredity of these cases: family incidence, inheritance of acetabular dysplasia, and inheritance of joint laxity. The proportion of affected first degree relatives was significantly higher than

expected. The figures for affected parents are lower than for sibs and children, partly due to the lack of neonatal diagnosis in the parents' generation and partly because it is probable that fewer CDH patients than normal individuals marry. There were too few twins in this survey to draw any conclusions, but larger studies in the past reflected a concordance of 35% in monozygotic twins compared with a 3% in dizygotic twins. MacKenzie (1972) surveyed the literature on twin studies and reported a rate of concordance in monozygotic twins of 42.7% and in dizygotic twins of 2.8%. The pattern of inheritance in first degree relatives could be dominance of reduced penetrance or polygenic. More affected second degree relatives were reported on the maternal side than on the paternal, but Wynn-Davies suggests that this probably reflects a greater knowledge on the part of the interviewed mother of events in the preceding generation of her own family. There was a rapid drop in incidence among third degree relatives which would indicate polygenic rather than dominant inheritance.

Wynne-Davies believes that the configuration of the acetabulum is inherited as a multiple gene system. The measurements of the shallowness of the acetabulum in the children in this survey were not found to be meaningful because radiographic assessment in the absence of complete ossification was unsatisfactory. However, the parents of 162 of the index patients were radiographed and compared with a control series on the assumption that if CDH has a genetic component some deviation from normal should also appear in the parents. It was found

that the apparently normal parents of the late-diagnosis CDH patients had a significantly shallower acetabulum than the control group. Figures for parents of the neonatal group showed the same trend but not at a statistically significant level.

In this survey lax joints were demonstrable not only in the index patients but in parents, sibs, and children in numbers significantly higher than in a control survey. This apparent disorder of the connective tissue occurred in a high proportion of both sexes and all generations, suggesting a possible dominant inheritance. Wynne-Davies considers it probable that two independent gene systems are operable in CDH. One is a polygenic system affecting development of the acetabulum which has in the past contributed to a high proportion of late-diagnosis CDH, and the other concerns the laxity of the hip joint capsule (as well as other joint capsules) which influences the great majority of cases of neonatal CDH and is probably of dominant inheritance. Any group of neonatal CDH patients will contain cases with both etiologies with a preponderance of perhaps 80% of the joint laxity type, and any group of late-diagnosis CDH patients will also contain both etiologies but with a preponderance of the primary acetabular type. Since these traits are common in the general population, some patients will have both defects, and in the few families in which it could be shown that both defects were present, there appeared to be an increased risk of CDH. Tentative calculations for the heritability of each defect were made on the basis of incidence in first degree relatives. For the acetabular dysplasia type, assuming a population incidence of 1 per 1,000 and

noting the proportion of affected relatives to be 3.6%, the heritability was found to be nearly 80%. For the joint laxity type the population incidence was assumed to be 4 per 1,000 and the proportion of affected sibs was 13.4%, giving a heritability in excess of 100%.

In a separate paper based on the same survey Wynne-Davies (197 Ob) asked the following questions:

- 1) What is the role of generalized joint laxity in CDH?
- 2) What is the role of delayed ossification of the femoral head and is it primary or secondary?
- 3) What is the place of primary acetabular dysplasia in CDG?

Summarizing the results from the parallel report (197 Oa), she found a higher proportion of children with CDH were lax-jointed than in the control group, and a higher proportion of neonates with CDH and their first-degree relatives had joint laxity than did the late-diagnosis group. A comparison of the ages at appearance of the ossification center of the femoral head in a control survey and in neonatal CDH patients indicated no significant delay in affected hips. Since this paper (197 Ob) is more concerned with the pathology of CDH Wynne-Davies discusses acetabular dysplasia in detail. The degree of acetabular dysplasia is determined through radiographic measurement of the CE angle, defined as follows (P. 705):

"The head of the femur is a sphere and thus its centre can be found. This point is joined on the left and right sides, a perpendicular erected and a second line drawn from the center to the edge of the acetabulum. The angle between

is the CE angle and is a measure of the coverage of the femoral head and of the depth of the acetabulum."

(Figure 1) An attempt was made to measure the "normal" hips of unilateral CDH patients, but satisfactory measurement of

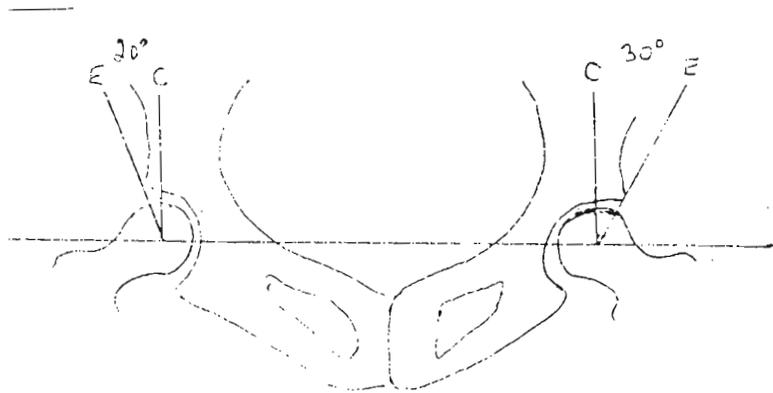


Figure 1. The CE Angle

incompletely ossified acetabula was impossible. Instead, the parents of the index patients were radiographed and compared with a control group of radiographs, as described in the previously discussed paper. Histograms of the raw data show a slight but insignificant shift in distribution to a shallower acetabulum for the parents of index patients. It is known that the CE angle increases gradually throughout adult life, so, in order to eliminate the age effect a mean angle was calculated for each age in the control group and degrees of deviation from the mean were determined. In this way a significant shift to a shallower acetabulum was shown in the parents of the late - diagnosis CDH patients, along with a smaller shift for parents of the neonatal group, not at a significant level.

In discussing the significance of the findings of acetabular dysplasia, Wynne-Davies suggests two possibilities: 1) Acetabular configuration is an inherited character (probably multiple

gene) which allows easy dislocation and discourages maintenance of reduction. 2) The CDH parent, though apparently normal, was lax-jointed in infancy with dislocation or subluxation producing a secondary shallow acetabulum. There is no direct evidence to determine which factor is significant. However, the groups of CDH parents with and without acetabular dysplasia were compared as to several clinical factors and Wynne-Davies states that the dysplastic group has a more "genetic" look (1900b, P. 714). In addition it was determined that as the degree of dysplasia becomes more severe the proportion of relatives with dislocation increases, a result to be expected in a disorder of multiple gene inheritance.

A more recent paper by Wynne-Davies (1972) summarizes several reports of familial concentrations of CDH and the possible role of familial joint laxity and primary acetabular dysplasia as genetic factors. Environmental factors are still considered important in the development of disease in susceptible persons. There have been several studies investigating the relationship to breech births or late versions, as well as to birth order, it being presumed that a first-born child is more constricted in a primiparous uterus and that breech position, especially with knees extended, is conducive to dislocation of the hip. All these surveys have shown an increased incidence associated with breech presentation and primiparity. Hummer and MacEwen (1972) report an increased incidence of torticollis and CDH in the same patient significantly higher than expected. In a group of 70 children, aged 3 weeks to 1 year, with torticollis, there was an incidence of 5% CDH plus an additional 15% with congenital subluxation, whereas the expected co-occurrence is calculated

to be 0.006%. The report suggested a parallel etiology, uterine compression, might account for the unexpected conjunction of these defects.

According to Wynne-Davies (1972) several centers have reported a significant seasonal increase in the number of CDH children born during the winter months. In some cases this increase may have been related to the fact that infants are more tightly wrapped during the winter months, a situation which forces the hips into extension and tends to maintain any early dislocation which would have reduced itself if the child were able to kick and maintain a greater degree of flexion. This factor may account for some of the increased frequency among races which swaddle their newborn such as the Lapps and the Navajo. However, there is also an increased incidence in winter months apparent in newborns who have not been swaddled. The wrapping or swaddling theory cannot account for these.

A study done in Israel in 1962-67 (Chen, 1970), reported on the incidence of CDH in newborns. The rate was found to be significantly higher among infants born during the cold months. However, comparison of weather data in this study with that in England during similar studies showed that the temperature range of the "cold" season in Israel is comparable to the "warm" season in England, ruling out a suggestion that temperature variation is somehow a factor. Chen and associates formulated a hypothesis concerning the gestational age of susceptibility (the 4th or 5th month) to an unknown seasonal factor.

It has been proposed in several papers that the effect of maternal hormone secretion on the fetus may be a factor affecting

joint laxity and consequently the predisposition to dislocation. Woolf (1968) cites a study of urinary excretion of hormones in 26 normal and 11 CDH infants which showed an increased level of estrone and estradiol in affected infants. The relationship between hormone levels and joint laxity is described by Woolf as follows: "A developing fetus receives estrone and progesterone across the placenta. The fetal adrenal glands also produce progesterone, and the fetal ovaries produce estrone. These hormones produce minor degrees of joint laxity by their direct action on fetal ligaments. These hormones also stimulate the fetal uterus to produce relaxin<sup>\*</sup>, which further accounts for the greater degree of joint laxity in females. An enzyme system present in the normal fetal liver converts estrone and progesterone to inactive products which enter the maternal circulation and are excreted. It is proposed that a failure of this enzyme system results in fetal hormonal imbalance, especially in the female. The consequence is generalized ligamentous laxity, which may initiate the chain of events leading to symptomatic hip disease" (P.435-6). McKenzie (1972) reports that similar studies have failed to confirm this hypothesis. Wilkinson (1963) performed a series of experiments on young female rabbits attempting to reproduce human intro-uterine factors: joint laxity by injecting estrone and progesterone; and breech malposition by splinting of the knee in extension, since extension of the knees is thought to be the most harmful factor in the breech position. He was able to demonstrate laxity in the hip capsule, development of a limbus (a fold in the

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\*This statement is probably inaccurate. See Williams, 1974, P.383.

capsule between the femoral head and acetabulum which often presents reduction), and posterior dislocation of the hip joint.

To clarify some of the controversial aspects of the pathogenesis of CDH, McKibbin (1970) performed a detailed anatomical study of an infant with bilateral CDH who died a few hours after birth. Particular attention was given to the role of femoral anteversion (anterior rotation during fetal development) and the orientation of the acetabulum. McKibbin discusses the theory presented by Le Damany in 1908 that "when the leg is in the anatomical position the stability of the hip is influenced by the relationship to the sagittal plane of both the femoral neck and the acetabulum, so that if the former faces significantly forwards (anteversion) and the acetabulum is also inclined to the front a stable articulation may be impossible" (McKibbin, P.148). Measurements of femoral neck orientation have since then received frequent attention with ingenious techniques devised to measure the living subject. However, several studies of acetabular orientation have produced a diverse range of normal values. McKibbin suggests that lack of standard orientation of the pelvis in measurement has contributed a possible source of difference, for some were measured with the brim of the pelvis horizontal instead of in the anatomical position. "Since the acetabulum not only faces forward but downwards, it is obvious that alterations in the relationship of the plane of the pelvic brim to the horizontal will also alter the sagittal orientation of the obliquely placed acetabulum" (P.149). Standardization of measurement with the pelvis in normal anatomical position is de-

sirable, since it is in that position that dislocation is of concern. Normal anatomical position places the top of the pubic symphysis in the same vertical plane as the anterior superior spine of the ilium, and is conveniently reproduced in a dissected specimen by laying the pelvis prone so that these landmarks are simultaneously in contact with a level table top. The angle of the acetabulum to the sagittal plane is then read from an adjustable protractor held in the vertical plane against the greatest diameter of the acetabulum parallel to a line drawn between the two anterior iliac spines.

McKibbin presents the findings from dissection of this specimen of CDH in the context of the theories of etiology found in the literature. The concept of a primary acetabular dysplasia is one of the oldest proposed causes, but he found no evidence of dysplasia in this dissection and concludes that such dysplasia is secondary to dislocation. Another group of theories relates to Le Damany's concept of incompatible anteversion of the femoral neck and the acetabulum during early fetal development. These theories propose that failures in reciprocal alignment of the femoral neck and the acetabulum during early growth of the fetus may predispose the hip to dislocation. McKibbin says that these theories all imply that actual dislocation occurs after birth when the hip is first extended. He disputes this because dislocation in the fetus is well documented and reports that the dissected specimen showed displacement of both femoral heads within a few hours after birth. He found only one condition in the specimen which was unquestionably abnormal and that was the excessive laxity of the capsule. He concludes that the sequence

of events producing dislocation begins with a primary laxity in utero which permits dislocation of the flexed hip under the influence of fetal posture. Once the head of the femur dislocates the development of the acetabulum is interfered with and some degree of dysplasia will be present at birth. Capsular laxity diminishes after birth, producing a tendency for the hip to become stable. Other factors may oppose the stabilizing tendency, e.g., a short iliopsoas muscle causing a levering action on the femoral head during extension, acetabular or femoral anteversion, and any dysplasia which may have developed. In discussing optimum management of dislocation McKibbin notes that fixation in a cast is usually in one of two positions: full abduction and flexion, or abduction extension and medial rotation. Both have been successful, he believes, because either position eliminates the laxity of the capsule and offsets any defect in orientation of the femoral neck and acetabulum.

Several reports have been published which discuss the significance for CDH of familial generalized joint laxity as distinguished from either temporary hormonal joint laxity or the type of laxity found in certain syndromes. Such heritable disorders of connective tissue as Ehlers-Danlos syndrome, osteogenesis imperfecta, and Marfan's syndrome include a tendency to hip dislocation (Carter and Wilkinson, 1964a). Generalized joint laxity occurs more commonly uncomplicated by other abnormalities and usually with a familial incidence indicating a dominant inheritance of variable expression. In mild form it is present in about 7% of normal school children of either sex. In extreme form it can lead to incapacitating CDH or recurrent dislocation in several

joints. In their study of the prevalence of persistent joint laxity, Carter and Wilkinson (1964b) listed five tests of abnormality:

- 1) Passive apposition of the thumb to the flexor aspect of the forearm;
- 2) Passive hyperextension of the fingers to a position parallel with the extensor aspect of the forearm;
- 3) Ability to hyperextend the elbow more than 10 degrees;
- 4) Ability to hyperextend the knee more than 10 degrees;
- 5) An excess range of passive dorsiflexion of the ankle and eversion of the foot.

If more than three tests were positive the diagnosis of persistent generalized joint laxity was made (p.42). A comparison of incidence was made between a random series of 62 CDH patients aged 5 to 14 years and a control group of 285 normal children aged 6 to 11 years. Of the CDH patients with no first degree relative affected nearly one-third of the girls and over three-fourths of the boys showed joint laxity. Of the CDH patients with a first degree relative affected four of seven girls and five of seven boys showed joint laxity. Parents of patients with both CDH and joint laxity were also examined. In five of nine male cases one parent had obvious laxity; in all nine female cases one or both parents had laxity. Carter and Wilkinson conclude that persistent generalized joint laxity is an important predisposing factor for CDH in boys. It is less important for girls except perhaps in familial cases, because there is an alternate cause in the temporary hormonal laxity discussed above.

Kirk et al. (1967) reported the results of a study of 24

patients with a "hypermobility syndrome" which they defined as various musculo-skeletal complaints which appeared to be related to generalized joint laxity. They conclude that this condition represents one extreme of a wide normal variation in joint mobility. Another view they suggest is that the isolated laxity is a mild disorder of mesenchymal development which lies at one end of a spectrum of heritable connective tissue disease with Marfan's syndrome and the Ehlers-Danlos syndrome at the other. Although the hypermobility syndrome is fairly common, associated disability is rare except for an apparent predisposition to premature degenerative joint disease (P. 423-5).

Beighton and Horan (1970) discuss the family histories of two patients with loose joints, one with no apparent disability and the other with bilateral hip dislocation and recurrent dislocation in several other joints. In both kindreds other family members were affected in the same way, without disability in the first case, and with many orthopedic problems in the second case. The researchers postulate two disorders representing two distinct and separate genetic entities because of the marked contrast in disability incidence in the two families. Both traits are apparently transmitted as autosomal dominants.

Two early reports of hypermobile joints were those of Whitney (1932) and Sturkie (1941). Whitney studied the incidence of double-jointed thumbs, apparently through a classroom survey. He reported a prevalence of 5 - 10% for the ability to bend the thumb at the second (basal) joint. He concluded that it behaves as a typical Mendelian recessive trait, but his research was fairly superficial. Sturkie examined the pedigrees for two cases of joint hypermobility and concluded that transmission of the trait is irregular. All

descendants of a single female in one pedigree exhibited the trait to varying degrees in different joints, although the propositus was affected only in fingers and thumbs. Her first generation descendants all showed the trait in joints of the fingers, thumbs, knees, and elbows, and 4 of 5 showed marked flexibility in hip and toe joints. Sturkie concluded that there is a great deal of variation of expression of the trait.

McKusick (1972) describes a simple test of joint mobility in which the 5th finger is bent backward and the angle with the proximal phalanx is measured. He reports a survey of 500 subjects which showed that most children have a high degree of joint mobility and that females have a higher degree of mobility between the ages of 15 and 50 years than do males (P. 352).

In a report on recurrent dislocations of the patella and shoulder, Carter and Sweetnam (1960) review the literature on familial joint laxity. Isolated familial joint laxity was first reported in the medical literature (in English) by Finkelstein in 1916, and since that time there have been numerous reports of joint laxity associated with various dislocations. In each report the pattern of inheritance was that of a dominant gene. Carter and Sweetnam surveyed 111 patients with recurrent dislocations to determine the relationship to joint laxity and its occurrence in affected relatives. Twelve of their patients had near relatives with similar dislocations. Of the ten having recurrent patellar dislocations in more than one family member two had familial joint laxity, and of the two with recurrent shoulder dislocations in more than one family member, both had familial joint laxity. In one family a mother and daughter both had bilateral CDH.

Carter and Sweetnam conclude that familial joint laxity is a sufficient cause for recurrent dislocation of the shoulder in more than one member of a family, but that other factors contribute to familial recurrent patellar dislocation.

According to James (1972) there are still a great many cases of CDH in which diagnosis is missed at birth. Several clinical studies have emphasized the high rate of success with conservative treatment of CDH identified in the neonate. In these cases, treatment has consisted of maintaining the hips in flexed abduction with a type of pillow splint. James raises the question as to whether the cases being splinted are not those which would have corrected themselves. The incidence of missed diagnosis of dislocation has approximated the previous expected incidence in several surveys. Late-diagnosis cases still require more aggressive treatment such as fixation of the hip in abduction through various cast techniques and/or osteotomy to reconstruct the acetabular roof.

Two recent papers summarize the changes secondary to CDH and the late results of inadequate treatment (Specht, 1974, and Primer on the Rheumatic Diseases, 1973). The principal secondary changes are a relative shortening of the adductor muscles which limits passive abduction, an increased slope to the acetabular roof, stretching of the supporting capsule and ligaments, anteversion of the proximal end of the femur, false socket development, and premature degenerative joint disease. In addition, late results of inadequate treatment include abnormal function of the gluteus medius causing a lurch to the lesion side (Trendelenburg gait), a shortened extremity, instability, and limited motion.

In a study of 124 hips requiring surgery for osteoarthritis 24 (20.9%) were considered secondary to congenital dysplasia (Lloyd-Roberts, 1955). In this study the average age at onset of symptoms was 46.6 years. Others have reported from 31 - 40% of osteoarthritis of the hip apparently related to CDH.

Woolf (1971) summarized the implications for genetic counseling in the genetic components of CDH. Existing data support the possibility of both polygenic and dominant types. Exogenous factors are apparently more important in females than in males in determining whether CDH will occur, and genetic factors are more significant in males. The risk to the sibs of a propositus is influenced by the sex of the propositus, whether the propositus was in breech malposition, the family history of the disorder, and the season of birth of the propositus. Nongenetic factors must be considered in counseling.

Improvement in the quality of screening for CDH is urged by Moore (1974) who states that too many cases are still being missed because of the lack of well-qualified examiners. He estimates the cost to the State (Ireland) to be in excess of 2,000 pounds for the treatment of one established CDH case, to say nothing of the cost to the patient of a life-time disability.

I have summarized the findings of several papers on the incidence and etiology of CDH. In spite of the success in recent years in identifying CDH in newborns and returning most of them to normal, hip disabilities are still being identified in about the same proportion as before in the populations surveyed.

Genetic counseling which takes account of both the polygenic and dominant factors discussed may reduce the incidence somewhat, but the relatively high frequency of these factors makes it unlikely that CDH will disappear, at least in the populations studied.

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THE ROLE OF TOURISM  
IN  
TONGAN CULTURE CHANGE

by

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Although tourism is responsible for some of the most profound culture change in recent years, there has been little research on its influence in altering cultural patterns. This paper examines alterations in handicrafts and social values in the Polynesian Kingdom of Tonga, and is based on fieldwork conducted in Tonga from February to July of 1976.

### Tongan Tourism

Tonga, the sole remaining Polynesian Kingdom, is located about 550 miles southwest of Samoa. Urbanowicz (1977) has traced the history of tourism in this area and thus only a brief review is needed here.

Prior to the late 1960's, few tourists came to Tonga. In 1967, the International Dateline Hotel was built primarily to accommodate officials or government travelers. However, in the last few years, a number of smaller hotels and guest houses have opened, and they are sufficient to meet the needs of air passengers (approximately 6,700 in 1976) who stay for a few days. The largest group of tourists continue to be the cruise ship passengers, who have increased from 25,000 in 1972 to 62,000 in 1975 (Tonga Visitors Bureau 1975), an increase of approximately 150% in only three years.

The attitude of the Tongan government to the rapid rise of tourism is ambivalent; it is open yet wary. Tongans realize that if things turn out poorly, the process will be irreversible; an attempt is being made especially to learn from the mistakes of two former Pacific monarchies, Hawaii

and Tahiti, who were overwhelmed in the past by other foreign influences. Though direct colonization is no longer a threat, Tongans are afraid of the neo-colonial kind of external control that can arise from foreign investments in the Kingdom. A report from the Tonga Visitors Bureau (T.V.B.) focuses on another issue, remarking that "the general impression as understood by the travel people is that Tonga is afraid of the moral and social effects of a visitor industry" (Wallis 1971:18). However, Crown Prince, H. R. H. Tupouto'a notes that "...if tourism means a better life, more jobs and opportunities, I can't see any harm in it. There are strict social conventions in Tongan society which regulate behavior" (Tonga Chronicle 3-25-76).

According to the Minister Responsible for Tourism, Hon. Baron Vaea (T. V. B. 1972), four factors make Tonga unique in its potential ability to absorb the impact of mass tourism: first, although a member of the British Commonwealth, Tonga has never been colonized or subjected to a foreign government, and has been able to maintain its freedom in determining local policies and future goals. Second, the Constitutional Monarchy has existed for over one hundred years, giving stability to all development. Third, missionaries have assumed an active part in Tonga's development. Religion is a major factor in everyday life, which adds stability to all growth and change. Finally, there is no freehold land in Tonga. No foreigners may own land and the government must approve all leases of land to overseas companies or persons as well as to Tongan nationals.

With due respect to Hon. Baron Vaea, I believe that the

key factors in the latent development of tourism in Tonga have been geographic isolation and lack of outside interest in the island rather than internal stability. Tonga's land tenure system, however, is an important issue. The Constitution of 1875 declares that it is illegal for anyone, including the King, "to sell one part of a foot of the ground of the Kingdom of Tonga, but only to lease it in accordance with this Constitution". Since no non-Tongan can own land, real estate speculation will never occur, with the accompanying temptation for an islander to sell his agricultural property for an immediate financial gain and a landless future. This has deterred growth. Foreign capital to date has been hesitant to invest on a lease basis, and the government is even more reserved towards their overtures. With the exception of the Port of Refuge Hotel on the remote Vava'u island group, only one foreign request for a lease to build a resort has been granted; significantly, the entrepreneur is a direct descendant of Tahitian royalty, an indication of Tonga's desire to "keep the business in the family".

Thus, while Tonga is unique in its land tenure system, in most other respects it is not. Tourism is growing, its impact is becoming more pronounced, and Tongans realize the necessity to develop policies that will encourage tourism's benefits and minimize its problems. Whether Tonga meets these issues in a unique fashion remains to be seen.

#### The Impact of Tourism on Handicrafts

Tongan handicrafts have always been an important part of Tongan culture, though in the past they were primarily utilized

for practical and ceremonial purposes and were not considered "art" as such. With the rapid development of the visitor industry cultural items have now taken on a new value - both in the eyes of the Tongans and of the tourists. It is the latter that tacitly decides what is aesthetically pleasing and/or unique (therefore, valuable) and this information is subtly transmitted through sales figures to those who make and sell the handicrafts. They, in turn, create more of the same (i.e., "what sells") and offer their products to a new wave of customers, who pick and choose and influence the direction of production once again. A cyclical pattern of supply and demand has emerged which, while not surprising from an economic standpoint, has had profound implications in terms of changes in traditional handicrafts. Alterations and innovations, if and when they occur, are most often manifestations of the buyers' preference, not the seller's. With this in mind, we will concentrate here on the alterations that have occurred in Tongan handicrafts, with particular emphasis on tapa, as an example of the major changes in Tongan plastic art forms induced by tourism.

Tapa is certainly the most popular and best known handicraft item in Tonga. It is handmade from the inner bark of the paper mulberry tree, according to a process that has not been altered significantly in hundreds of years. This production process is now becoming a tourist attraction in and of itself due to its appeal as a "native art" that has not yet been automated.

Tapa has always figured prominently in all ceremonial occasions in Tonga - given at births, weddings, funerals, and

other significant events, it symbolizes wealth. This exchange still reaffirms and strengthens social bonds and status relationships. It functions as a focal point of civility (Urbanowicz 1976), with all the attendant implications for social behavior that such a relationship implies. Tapa also serves in a purely functional capacity and is particularly useful as bedding and as a room divider. Once worn as clothing, its beauty is still very much appreciated by Tongans.

To satisfy the demands of an expanding tourist trade the commercial production of tapa is increasing as more women participate in this cottage industry. Simultaneously, fewer women are producing tapa for ceremonial purposes or home-use. Although virtually all women know how to make tapa, and will make it if the need seriously arises, a growing number of them (especially younger women) view the process as a time-consuming task which does not warrant the effort except for the tourist dollar. The proportion of those producing for domestic (as opposed to commercial) purposes is thus dropping, though as the population increases the actual number is probably growing. Many of the women who live near Nuku'alofa now buy the paper mulberry bark in the market already stripped and cleaned, and some are even purchasing pounded out pieces which only have to be glued and decorated. Although tapa has always been "borrowed" from kin to meet ceremonial responsibilities, it may not be too long before Tongans are selling it to each other - an unpleasant thought for many in the culture, since the exchange is ideally performed out of love and respect. Some of the older women believed even until recently that it was wrong to sell tapa to

papalangis (foreigners), preferring to give it as a gift. Under the pressure of increased tourism, this notion was quickly dropped.

Several changes have come about in the tapa currently sold in Tonga, and all can be directly traced to the rise of tourism in the Kingdom. Economic factors have caused a bending of traditional styles to conform to foreign taste and convenience. The most evident change here is in the size of the pieces of tapa that are sold. They are now much smaller, averaging around one meter in width and two to three meters in length, due to the bulkiness of larger pieces, with the problems of air transport and "finding a place to hang it". Traditional designs are large and fairly spread out - the new smaller pieces have forced the women to condense and consolidate patterns, sometime rearranging them. Although indigenous designs are still used, their spacial relationships have become distorted. This has resulted in pieces being produced in a much neater fashion; partly in response to Western notions of artistic "order", and partly due to the demands of a smaller space that is viewed more closely. (An informant described a piece she made for sale to the tourists for which she felt she would get a good price because of its straight lines, neat edges, and lack of stains. Her mother disdained the carefully-made piece as "not Tongan!". In addition, more women are beginning to produce tapa pieces with contemporary decorations; such as the Royal coat of arms, maps of the Kingdom, and scenes of supposed tourist interest.

Similar changes have occurred in other handicraft items. Woven handbags are now offered that incorporate color into the weave, have shells on the outside and/or plastic lining on the inside, or have "TONGA" woven onto the side. Many wooden carvings

bear a striking resemblance to tiki gods, and circular (and even occasionally oval) mats are sold. In addition, a whole range of handicrafts are now produced that have appeared in the last decade, including sandals, serving trays, ukuleles, and woven stuffed donkeys (currently the best selling item). Most schools in the Kingdom began to teach handicraft production as part of their regular curriculum several years ago when there was a fear that these skills would be lost if the younger generation did not use them. There is a strong emphasis on quality in the student work, though not on innovation.

In a weekly broadcast on Radio Tonga, the Tonga Visitors Bureau encourages those who make handicrafts to do their best and to make what the tourists like. There is an appeal to national pride as well, with a reminder that Tonga will be judged by what is produced, and will attract more visitors if the handicrafts are of a superior quality. There are no laws to regulate standards of production other than the informal laws of peer-group opinion, which are perhaps more effective in maintaining high quality than any set guidelines. The T. V. B. also sponsors a contest every year to determine the best new handicraft idea.

By contrast, tourists tend to be indiscriminate about the authenticity of what they are buying, since few seem to have a specific notion as to what to expect. Many leave clutching their "real" Tongan placemats, laundry baskets, and "hula" skirts with a happy smile. These are objects which certainly are not indigenous to the culture, yet they are made in Tonga by Tongans with local materials. The issue of "when is a handicraft made in Tonga not a Tongan handicraft" is not considered here but is important to the interaction between Tongan hosts and foreign guests

and the consequences for alterations in traditional handicrafts. It should be noted, however, that at this time neither side bemoans these alterations as a "sellout", and that the line between true-traditional and pseudo-traditional handicrafts (in any culture) is blurred and has yet to be drawn clearly. Whether the increase in handicraft production for tourists has heightened Tongan appreciation of indigenous art forms is also unclear.

#### The Impact of Tourism on Social Values

Tonga is traditionally a stratified ranked society in which lineages are extremely important. Families are patriarchal and in the majority of the households today the husband provides the sole source of income from farming. His role as provider is important in his own eyes, and no man would think of marrying without having some land that he at least had access to.

As tourism increases more wives are becoming involved in cottage industries, making a wide variety of handicrafts. The work itself can be accomplished at home sandwiched between daily activities or in the evenings - very few women let this work interfere with their domestic duties. Since the raw materials utilized are indigenous and the production takes place at home, the payment a woman receives from a handicraft sale is entirely profit. Though cruise ships average only three a month, an industrious woman can make considerably more money than her husband, contributing up to 70% of the family's income (Havea, personal communication). This economic shift is responsible for a growing number of domestic problems, as male pride in his role as breadwinner and the ideal of male authority is eroded, and the wife brings home her earnings and demands control over how it is spent. Some men respond by

working more on their cash crops, but most merely resent their wives' invasion in what the men conceive to be their sphere of influence. Although separation and divorce are still rare in the Kingdom, conflict on this issue is not.

Another significant feature of Tongan family life is a strong brother-sister taboo (which extends to first cousins, either parallel or cross). Neither should be in the same room, except for meals, or even occupy the same house once they reach puberty. A girl should not cook her brother's food, wash his clothes, or care for him during illness. It is especially taboo to mention anything of a personal nature to a sibling, so communication is limited. Even worse is to be in a sibling's presence when another individual says or does something indiscreet; therefore, most will avoid a group if their sister or brother is there.

Partly because of this taboo, and partly because of a deep sense of modesty, Tongans are profoundly embarrassed by a wide spectrum of tourist activity. There is a concern that brothers and sisters may be near each other and both see, for example, female tourists in bikinis or scant clothing. A bill was recently introduced in the Legislative Assembly to regulate dress of this type, but was defeated. A law does exist, however, which requires all males over the age of sixteen to wear a shirt in public, a law which all Tongans observe and which tourists frequently violate. No formal charges have been brought against any visitors, partly because of a reluctance to create an unpleasant experience for them during their stay. Still, ill feelings exist among Tongans because most all of the tourists who go without shirts are aware of the law and choose to disregard it, an act which indicates a

lack of real concern for their hosts. The concept of respect is all-important in Tongan society; its violation in this manner is particularly resented.

Similar areas of conflict center around tourists' public behavior, especially behavior involving men and women together. Open expression of affection, even between married couples, is frowned upon, but this attitude is seldom explained to visitors. A local tour agent will inform a tourist that he should not remove his shirt, but may be constrained to tell him that he should not kiss his wife. This more subtle problem is a source of much misunderstanding, especially as more young people emulate Western models and consider adopting their behavior patterns based on different social values. As one female informant put it, speaking of public displays of affection among Tongans:

This is the influence of the tourists, because Tongans, like myself, would think, 'why should I be ashamed? They are human, I'm human, why couldn't I kiss my girlfriend or boyfriend on the road?' So they go ahead and do this, and when they do it, they find out then, what is there to be ashamed of? Nothing --

While the number of young people who would agree with this statement is certainly rising, it is one thing to agree, and quite another to act upon the belief. The weight of public opinion weighs heavily on most, both young and old. At this point, the appearance of amorous couples on the street is most likely to occur when there is a cruise ship in the harbor.

In any case, the objection to this kind of behavior by Tongans is threefold: It offends the moral values of the community, it causes embarrassment among family members, and it indicates a lack of respect for others. Many Tongan and Western social values are inconsistent with each other and tourism has

therefore exposed these points of stress. Compromises are essential if this interaction is to continue - the questions then become where, and how much?

In every society there exists a continuum of social values, ranging from those that are highly adaptable to those that cannot be altered without threatening social institutions and hence, social structure. Values of this latter type tend to become formalized, and an example in Tonga is the Sabbath Law, which states:

The Sabbath Day shall be sacred in Tonga forever and it shall not be lawful to work, or artifice, or play games, or trade on the Sabbath. And any agreement made or document witnessed on this day shall be counted void, and will not be protected by the Government.

This law is strictly enforced throughout the Kingdom, for Tongans and foreigners alike. The implications for tourism are enormous, for no planes are scheduled, no taxis are rented, no tours are given, no handicrafts are sold. Though cruise ships' passengers are not affected (vessels never call on Sunday which is a scheduling problem for the carriers) a "lost" day can be traumatic for air passengers on a tight schedule. The general tourist reaction is negative, for while they might have been aware of the law before they arrived, most were not aware that it is so severe. The Tongan police want an even more explicit wording, claiming that they are not sure whether to arrest Sunday picknickers or not!

All efforts on the part of tourism personnel to change the Sabbath Law have failed, and several tours have been cancelled, as well as cruise ships that could not alter their schedules. The loss in tourism revenues is impossible to calculate - all

agree it is considerable - yet the government, with apparent support of the Tongan people, refuses to even consider any alternatives. Some individuals feel that if the Sabbath Law is compromised, other more detrimental changes will follow; others oppose a change on purely religious grounds. But for whatever reasons that individuals are taking a stand here, it is clear the social value that the law reflects is deemed by all to be more important than the advantages gained by giving it up. Tonga wants tourism but, at least for the present, there are some prices too high to pay.

In summary, wherever it develops, tourism is only one of several factors that may alter individual and collective attitudes and behavior patterns. By isolating it as a separate variable for study we come to a more complete understanding of the dynamics involved in culture change.

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THE EFFECTS OF INDUSTRIALIZATION ON  
AMERICAN WOMEN'S ROLES IN SOCIETY

by

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As I set out to do my research for this paper, I was amazed at the amount of literature pertinent to the issue that had been written before the onset of the so-called "Female Revolution". Like the greater majority of my sex, I had heard of Susan B. Anthony and the women suffragettes who advocated "Women's Rights" in the late nineteenth - early twentieth century, but was unaware of the many other women who had made important contributions in the areas of labor organization, education rights for women, medicine, literature, etc.

In pre-industrial or traditional societies, the division of labor followed the culturally defined rules handed down through the generations. As a pattern it is associated with extended patriarchal families with a rural or peasant economy (Martin & Voorhies 1975:367). Under the traditional dichotomy of labor the males took over the provider role, while the female became the domestic helper.

The advent of settled community life and increased production of agricultural products led to the establishment of the urban dweller, and urbanism became the accepted alternative to agricultural life. City dwellers in pre-industrial times, were artisans, craftsmen, merchants, etc., and exchanged their products and services for their subsistence needs. This new way of life led to an adjustment in the family. The extended family was no longer a viable unit. The new economic base led to a new family unit --- the conjugal pair and their offspring. With the advent of a new family unit the role of the female as a co-producer assumed a new importance.

Among the lower class families the productive efforts of the males were sometimes inadequate for the subsistence of the family; and the female, more often than not, found herself working outside the home at a full or part time job, plus carrying her usual responsibilities for her own family. Without the services of an extended family to fall back upon, this was an additional harder burden borne by the women. As they had no training or formal education, their job opportunities were mostly confined to the domestic services at an extremely low rate of pay, with long hard hours.

With the invention of machinery (i.e., the spinning jenny and the power loom) which were designed to boost the production of needed commodities and to create a demand for an easier access to manufactured goods, the age of industrialization had begun (Cooke & Bunch-Weeks 1970:99).

The Civil War accelerated the development of industry, which was already on a substantial footing in the New England States. The need to equip and maintain large armies and outfit the western expansion brought about a large scale growth. American business had begun to mature.

The Civil War by its drain on the manpower reserves of the country, especially in the North, forced thousands of women into the labor market. While for many this was a temporary step until their men returned home from the War, thousands were left as the sole breadwinner in the family because of the death or disability of their husbands, fathers, or brothers. Single women with no relatives to fall back upon, and widows who now had sole responsibility for the upkeep of fatherless children were forced into the labor market and their numbers rose steadily. This is borne

out by the official census figures covering a twenty year span (Flaxner 1959:131).

1850	-	225,922
1860	-	270,987
1870	-	323,370

In the first half of the nineteenth century, women worked in more than a hundred industrial occupations. At first, some of these occupations, the making of cloth, garments, and hats, and the sewing of shoes, were carried on in the home where they had first engaged in them as housewives. This arrangement enabled the women to keep an eye on their children and undertake more pressing duties of their housework in between completing their sewing. But, with the invention of machinery the home work shrank; there was a steady demand for women workers in the textile mills, but opportunities for factory work could not keep pace with the number whom mechanization had thrown out of work.

With no skills which were in economic demand except some sort of sewing, many women found themselves in desperate competition with one another in the garment industry, which was still largely carried on at home.

These were not the only factors making for low earnings in this field. The concept of the inferiority of women barred them from training for more skilled work, and therefore for entering other occupations; it also prevented their receiving the same pay as a man for similar work.

A newspaper in 1833 estimated that "women earned only one fourth of men's wages", while still another asserted that three fourths of Philadelphia's working women "did not receive as much wages for an entire week's work of 13 to 14 hours per day, as journeymen receive in the same branches for a single day of 10

hours" (Flaxner 1959:53).

The result was that women homemakers in 1833 were averaging as little as \$1.25 a week, or less; a childless woman might earn an average of \$58.50 a year, but one encumbered by young infants needing her care would only make an average of \$36.40 annually. An estimate puts women's daily average earnings at less than 37½ cents, with thousands earning a mere 25 cents a day.

It was among these women, working in slum dwellings under conditions similar to those of the modern sweatshop, that the desire first emerged for contact with one another and joint action to better their conditions. Out of their plight came such short-lived organizations in the 1830's as the United Tailoresses Society of New York, the Lady Shoe Binders of Lynn, Massachusetts, and others across the industrialized states. Their rudimentary attempts to band together and withhold their labor met with little success. The women were not only inexperienced and working in isolation from one another, but they received little support from the men in their trades, whose attitude generally was one of fear that women's low earnings would compete unfavorably with their own.

If pay was higher and conditions in general somewhat better in the cotton and woolen mills, the difference was only relative. The typical factory working day lasted from sunup to sundown, and sometimes until after lighting up time. The hours ran from 12½ to 15 or 16 per day. Women and children had to be at work at 4:30 A.M. and work as long as they could see, with time off for breakfast and dinner. Women's wages, always lower than those of men on similar jobs, ranged from \$1.00 to \$3.00 a week, out of which they paid either \$1.50 or \$1.75 per week for board in company owned or leased houses (Flaxner 1959:55).

Their basic problem was their own weakness, even when their militancy was greater and more sustained they could achieve nothing lasting. The first early flowering of the women's rights struggle, having put forth a tender, fragile bloom, quietly withered on the stalk.

The next surge of organization among women workers did not come until the emergence of the Knights of Labor in the 1880's. Women of means, with contacts and influence, such as those who kept the nascent suffrage movement alive for decades, had not yet become interested in the problems of working women, or seen the relationship between their goals; they did not do so, on any appreciable scale, until the turn of the century.

But the grievances remained --- low, unequal wages, the long hours, the indignities inflicted by foremen and employers, illness resulting from the working conditions, child labor after the age of five and no supervision available for the younger infants --- and the unremitting sporadic, unsuccessful attempts to organize against them also continued. However fugitive they might appear, they showed the way to those who came after, and who succeeded in building more enduringly.

The late nineteenth century was a period of huge and rapid industrial growth. Standard Oil Company was founded, followed by lead, steel, tobacco and distilling industries. Railroads also made great advances becoming trans-continental in scope.

Cheap labor, always a need for these giant corporations, was easily obtainable from the influx of immigrating Europeans. Women were in great demand of course, for the lowest paying jobs, and their employment rose from the 2,647,000 of 1880 to 4,005,500 by 1890. A rise from 15.2% to 17.2% of the total

working force (Flaxner 1959:193).

Although the size of the labor force was escalating sharply, the wages were kept low by the use of immigrant labor. As a result the 1880's saw the first serious attempt to organize a national labor organization. The Knights of Labor began organizing working men and women on an equal basis. Unfortunately, the organization increasingly demonstrated its inability to unite in behalf of any course at all, and rapidly disintegrated within a decade.

Throughout the 1890's and early 1900's women continued their sporadic and usually unsuccessful attempts to form unions. Some were completely independent unions and these, lacking resources and experience usually fared the worst; others were so-called "federal locals", chartered by the American Federation of Labor and limited to women in one trade. Attempts by the Federation to organize women on any large scale foundered on the disinclination of the majority of its unions to spend money organizing low-paid, unskilled trades far removed from their own immediate interests.

In 1892 the American Federation of Labor finally appointed a woman organizer (Flaxner 1959:201), for a term of five months. Mary E. Kenney was a bindery worker, who in her home town of Boston had organized a Ladies Federal Union. During her brief tenure as an organizer she worked with women in a number of industries in the New England States. The Federation officials were not enthusiastic supporters of her work, and it was discontinued long before she had received a chance to prove its value. Fortunately, Miss Kenny's interest in organizing women was less ephemereral, and she became one of the moving forces, some ten

years later, in the founding of the Women's Trade Union League (Firestone 1970:22).

As is the case with all rapid changes in a society, the rapid development of a predominantly industrial society brought about increased productivity and wealth, but also heightened the poverty and social tension. Pyramiding incomes at one end of the scale were in acute contrast with the sweatshops and congested slums on the other end.

Violent industrial struggles took place between the employers, anxious to retain the open shop and cheap labor so vital to their huge profits, and the growing labor movement.

A number of church leaders became troubled with the gap between their Christian ethics and the glaring inequities of life visible all around them, and began to speak out, demanding reform.

In the middle of the ferment new organizations dedicated to the cause of social justice sprang forth, founded by women of the affluent classes. These women, including Grace Dodge, Josephine Shaw Lowell, and Jane Addams were thereby enabled to bridge the gap between their own sheltered lives and the women working in stores and factories who needed their help. Out of their joint efforts came, not only the settlement houses, but such organizations as the Working Girls Clubs, the National Consumers League, and the Women's Trade Union League, which brought women workers new allies possessed of money, influence, and dedication (Firestone 1970:22).

The heightened tempo of protest and fresh intellectual activity sent increasing numbers of girls to college and into the professions, and it eventually heightened the agitation for

women's suffrage as well. At every turn such women were faced with the handicap of their utter political impotence, and with the exception of Grace Dodge, every woman who was to any degree active in the social reform movement was also an active and articulate suffragist.

It cannot be repeated too often that for women working a 10 or 12 hour day whose earnings were almost half those of men, whose lives were often bounded by the sweatshop, and whose relation to their employer lacked any safeguards to personal dignity or job tenure, "equal rights" was a question of more than education or getting the vote. For them equality also meant better pay for their labor, security from unsafe working conditions or the unwanted attentions of a foreman, political and economic freedom from their husbands, and a chance to get home to their domestic tasks before complete exhaustion had overtaken them.

By the beginning of the twentieth century, some changes had taken place in the position of women in America. While changes in the educational and legal positions of women had been uneven from one state to the next, and had not always taken place without setbacks, nevertheless, many of the worst disabilities had been eliminated, while others had been greatly reduced (Francis 1963:21). By this time the leaders of the various women's unions and organizations had come to realize that without political power their movement would never get off the ground. Therefore, they began to put their considerable capabilities and energies to the task of passing an amendment to the Federal Constitution. Over the ensuing years the battle

waged back and forth until in August 1920 final ratification was achieved and the Nineteenth Amendment became the Law of The Land.

Now, almost fifty-five years after the adoption of the Nineteenth Amendment --- what are the changes? A number of promised or threatened events have failed to materialize. The millenium has not arrived, but neither has the country's social fabric been destroyed. Nor have women organized a political party to elect only women candidates to public office. Instead, women have shown the same tendency to divide along orthodox party lines as male voters. They have, it is true, voted in steadily increasing numbers, but the increase does not match their growth in the total population, nor does it adequately reflect their potential political power.

Women have exercised some of the healthy influence dreaded by the machines in favor of "good government", even though in most cases they are limited to "women's jobs" and "women's subjects" (health and education), which politicians consider theirs - based on sex. Their political influence, such as it is, has so far been most effectively exerted through their own organizations --the League of Women Voters, Parent Teachers Associations, clubs, etc.

After the long battle for the passage of the Nineteenth Amendment, Mrs. Catt -- leader of the Women's Suffragist Movement -- warned that it was only the beginning, and that women would have to force their way behind the "locked door" where the real decisions were made: "You will have a long, hard fight before you get behind that door, for there is the engine that moves the wheels of your party machinery...If you really

want women's vote to count, make your way there" (Flaxner 1959:327).

The task of cracking the political machines has proved an arduous and, on the whole, still an unsuccessful one in which women have faced such varied obstacles as their own distaste for the rough and tumble of machine politics and the prejudices of the male politicians, and sadly to say -- the prejudices of their own sex. In addition, there are the problems encountered by every woman who attempts, in addition to making a home and rearing children, to carry on a business or professional career of any kind.

The truth is that while most of the legal barriers are down, others remain, some of them rooted in physiology, others arising more from prejudice than fact. The problem of the child-bearing mother who wishes to bring up her children, but must interrupt her career to do so, seems likely to remain a continuing one in the foreseeable future despite labor saving devices, new educational concepts, and the growing willingness of fathers and husbands to take on a share of household and family responsibility after they come home from work.

The single woman, widow or divorcee (with or without children) continues to pay a heavy forfeit for her sex. Because so many women do marry and bear children, business firms or educational institutions are reluctant to train or promote a talented young woman who is likely, they feel, to cancel their investment in her by marrying, bearing children, following her husband, or both. There seems to be a valid basis for women's complaints that they need to be better than the best to get ahead.

At the same time, however, more women are going to work, and working for longer periods in their lives. Although the relationship between the employment of women and family income is complex and variable, the increase in the number of women workers in such groups as young married mothers with small children and of older women shows that at least a large proportion work because they must, either as their principal means of support or as a necessary supplement to the family income. Yet the differential between men's and women's earnings continues to widen, in the face of mounting taxes and still rising price levels.

On the surface it looks as if women's progress has a tendency to run in ever increasing circles as we are once again pinning a vast amount of hopes to another amendment to the Federal Constitution. The Equal Rights Amendment is being heralded as our "Great White Hope", the one that will end all our problems in one fell swoop by the simple act of prohibiting any discrimination on account of sex. The question is whether any amount, or type, of legislation can overcome any type of discrimination purely because it is prohibited by law.

It is my personal belief that while industrialization has been the forerunner of many social, economic and legal changes in the lives of women, the end is not yet in sight. In the years to come there will be, and must be, many more changes in our cultural and social values to enable women to take their rightful place, alongside men, in the future.

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THE PERSONAL EQUATION OF GARDENING  
IN THE  
POTSDAM AREA

by

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## INTRODUCTION

This paper is the product of fieldwork conducted over the summer months of 1976. The primary concern of this fieldwork was to uncover and analyse a feature of American culture that is usually taken for granted by sociologists and economists, the home garden.

This paper will examine the following four topics: land use and technology, the production and use of surplus, dependence on and affinity with the land, and the world view of the gardeners. I shall show that many considerations enter into a gardener's decision of how much land and technology to use, how much surplus to produce, and what to do with it. It appears also that gardening is an immensely sociable enterprise and has important personal meanings and rewards for the gardener.

There was no attempt made in this study to sample the community but merely to investigate the complexities of the subject preliminary to planning a larger research project in the future. Nevertheless, several types of Potsdam residents have contributed to this study as informants. The informants interviewed were all immigrants within the last forty years to the Potsdam, New York area. The majority of the informants were associated in some way with the colleges of the area and were highly educated, many with advance degrees. Some informants, however, had nothing to do with the schools and had not even completed grammar school.

### Land Use and Technology

Gardening, or horticulture, has for thousands of years served man as a means of obtaining food. Working within the framework of his technology man has sought to influence nature toward this end. Obtaining food for immediate consumption was only one side of the coin; the other was the acquisition of surplus and the development of a larger, more complex society.

From digging sticks to rototillers, man's garden-related technology has progressed, helping him to obtain surplus. This surplus may be seen as both a cause and an effect of this technological progress. It is a cause in that surplus freed an artisan class to produce ever more sophisticated tools for growing crops. It is an effect in that these better tools further insured and increased the surplus.

The desire to produce surplus is manifest in our informants' stated goal of maximizing their harvest from a given amount of land. They are aware, of course, that surplus production is dependent upon the sophistication of the technology, the quality of land and seed, and the amount of labor invested. What is interesting is that surplus is also obviously affected by the amount of land used, yet gardeners who might maximize all their other resources vary greatly in deciding how much land to till. For example, two gardeners, A and B, might have equal food needs. Gardener A with 20 acres of arable land may only cultivate 2 acres, (1/10 of total arable land), and this only thinly and meet his food needs. Gardener B with only 3/4 acres of arable land may cultivate 1/4 acres, (1/3 of total

arable land) intensively and still meet his food needs. So here is introduced the variable of individuality, a very complex variable composed of perceived need, ambition, whim, and just about anything else that could distinguish one gardening personality from another.

To further illustrate this personal factor in the gardening equation, let us elaborate on our above example. Even though the gardeners' nutritional requirements are the same, gardener B cultivating 1/3 of his total land, or 1/4 acres, harvests enough to last through the winter; whereas, gardener A cultivating 1/10 of total land, or 2 acres, does not have enough to last through winter. Clearly the personal factor in the home gardener's calculations for gardening behavior has a mammoth influence. Perhaps even more than commercial farmers, home gardeners manipulate each of the terms in the following equation according to whims or ill-defined objectives:

Lands + materials + labor + technology → garden produce.

#### Production and Use of Surplus

Though consumption is the primary reason for gardening, all gardeners interviewed produce a certain amount of surplus. This surplus is due to the very high level of technology available to them. Surplus allows a gardener to store, can, freeze, or dry enough for the winter. Immediate requirements are consumed, but surplus can be squirreled away for the vegetable-poor winter.

Here an equation, modified from an article by Orans (Orans 1968:207), may serve to define surplus:

Surplus = Net Yield - Minimal Immediate Consumption Requirement where Net Yield is total harvestable produce after garden-related pests such as racoons, birds, insects, and diseases have taken their toll. Minimal Immediate Consumption is the amount harvested and consumed while fresh by the immediate family.

Now that surplus has been defined and one use of surplus, winter preserves, has been introduced, let us consider some of the other ways surplus is used.

The most common use of surplus is bestowal on a friend or neighbor. This recipient is usually not a gardener and the gift is received as more than just food, but as a bit of personalized, nurtured nature, which is how it was given. There is no nutritional loss or felt sacrifice by the giver.

This nongardening recipient may reciprocate goods such as pies or personal favors, but nothing is expected. To expect compensation for such a personal thing would be to cheapen its nature. To make use of an analogy: the ritually sacred would be polluted by the commercial, contractual, and profane.

This aspect of giving to non-gardeners is important, especially in the light of the fact that in western civilization we have developed the notion toward specialization that it takes someone of a like nature or talent to fully appreciate one's skills or avocations. For example, it takes a construction engineer to fully appreciate the structural stress of a suspension bridge, and it takes an auto mechanic to fully appreciate the working mechanisms of an internal combustion engine. However, this notion is not applied to gardening, for to give a

vegetable product to a gardener who already possesses it would be as one informant so aptly put it, "like carrying coal to Newcastle".

Giving crops to gardeners does occur, but only in certain situations. If one individual's cucumbers are "in" that is, ripe for picking, before another's then that individual may give some to the other, who at a later date would reciprocate. Also, two or more gardeners may exchange crops that each perhaps intentionally, had not cultivated, thus setting up a loose network of reciprocal exchange. This network is loose in the sense that any individual may end the relationship simply by failing to reciprocate.

Another form of giving which also occurs between gardeners is the bestowing or exchanging of seedlings. These seedlings are grown before the planting season and are propagated usually in window boxes, though other techniques are employed, (e. g., special fluorescent light setups or sealed bags filled with fertilizer). This bestowing or exchanging is also of surplus, though because it is given to other gardeners and is not really a product of their labors, it is given in much the same way two doctors would give patient referrals - clinically. The rationale behind this giving or exchange of seedlings among gardeners is expressed as, "it would be a shame to have to throw them away", and "I couldn't just kill them after they started to grow".

What is apparent throughout this process of producing surplus, whether it be vegetables or seedlings, is that gardeners do not calculate so as not to produce extra.

Some surplus, like seedlings, is not edible, but unlike seedlings is a product of a gardener's labor and the sense of

affinity between gardener and garden. Runners from strawberry plants are such a surplus, given away for the above reason of the value of life. Friends and neighbors are targets for this surplus though often other outlets are also relied on because the surplus is vast. These other outlets include acquaintances, strangers who learn of the surplus by word of mouth, or by reading posters on bulletin boards or notices in the classified section of the newspaper placed by the surplus burdened gardener.

Bestowing surplus in this sociable way is the most common means of its disposal. This is made especially clear in light of the fact that although all informants gave surplus away, not all informants preserved surplus; that is, canned, froze, or dried it.

Surplus is given not only to friends, neighbors, acquaintances, and strangers, but also to kinsmen, such as married children, who are not gardening. In many instances this means of allocating surplus is something like (as one informant termed it) a "care package". The gift is intended as very practical assistance and is prompted by a sense of love and parental duty.

Surplus is also donated to the Potsdam Food Co-op, to church fairs, and to charities. Besides helping to raise money for these organizations, this bestowal of surplus helps to fulfill one's civic and benevolent role as a contributing community member.

Surplus is also used as payment for services such as plowing or tilling. This payment is not contractual and is seen as a favor the gardener is bestowing upon the individual who performs the service as a neighborly gesture.

Thus we see surplus used to fulfill one's communal and familial obligations, to socialize with friends and kinsmen, to pay one's moral debts, and of course, to feed people. This is illustrated in the following paradigm:

S U R P L U S	V E G E T A B L E S	Preserving, (canning, freezing, drying)
		Bestowing, (friends and neighbors)
		Reciprocal Exchange
		Familial Responsibility
		Communal Responsibility
		Payment of Services Rendered
		Seedlings/ Cuttings
		Bestowing (friends and neighbors)
		Impersonal Bestowal

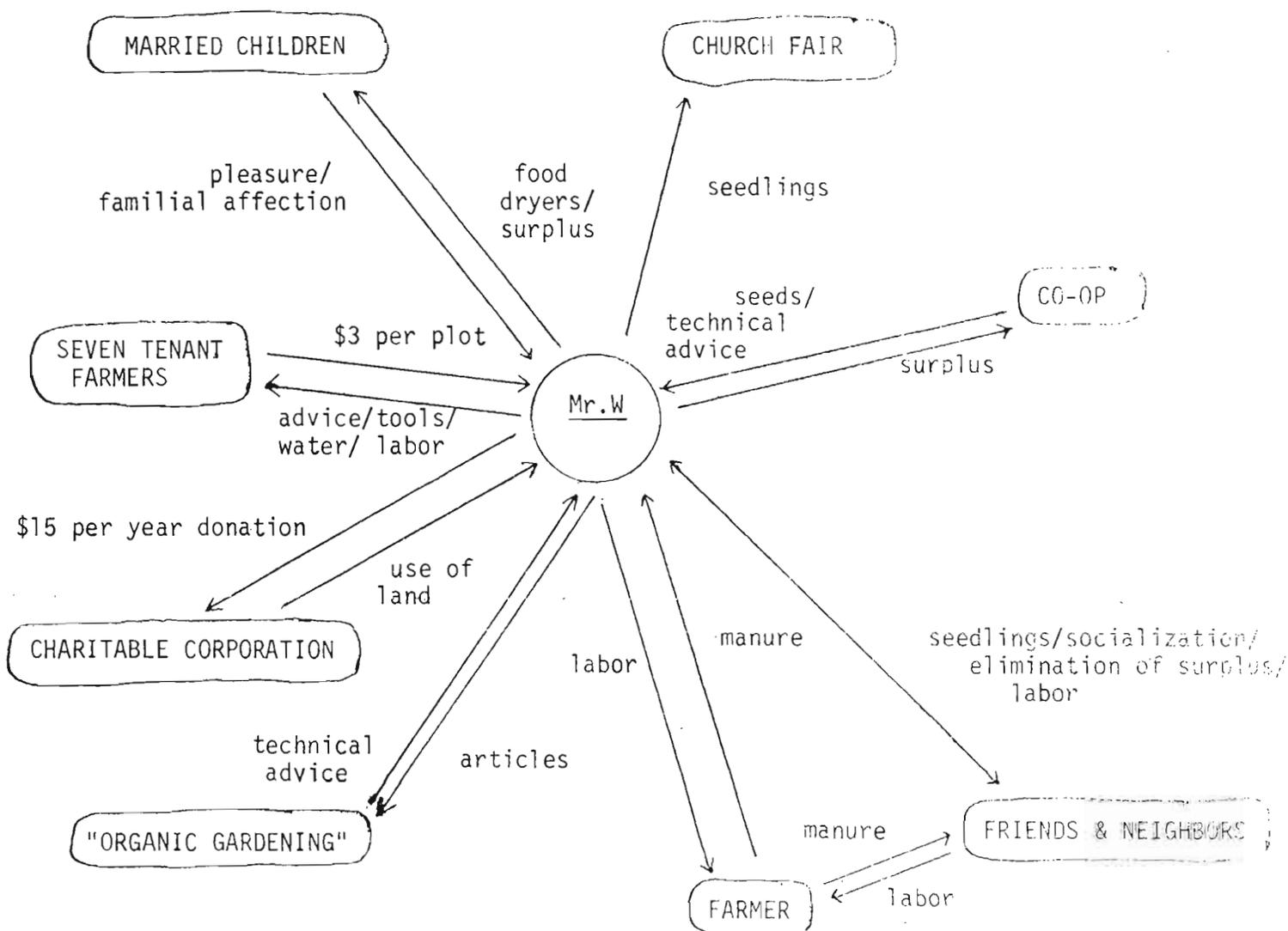
The following schematic network of an actual informant illustrates the complexities of garden input and output, encompassing not only the tangible, such as money, produce, and labor, but also the intangible, such as pleasure, information, and sociability. The center hub represents the informant hereon to be referred to as Mr. W, and the arrows represent the flow of the tangible and intangible commodities.

Mr. W was much more involved in gardening than most informants and in fact maintained two exceptionally large plots. One of these was in his backyard near his house and covered 1890 square feet. The second was located on adjoining property and covered 22,500 square feet. This second garden was located on property belonging to a local charitable corporation and Mr. W felt a \$15 per year "donation" was in order as a gesture of thanks for the use of their land. Of this second garden the informant himself worked an area of 12,000 square feet and parcelled the

rest out between seven "tenant farmers", each of which contributed \$3.00 per year to help cover the donation to the corporation and to help pay for the informant's increased water bill, gasoline for the rototiller, and depletion of the informant's tools, all of which the tenant farmers were welcome to use.

Mr. W subscribed to, and on occasion wrote articles for, "Organic Gardening", the methods of which he practiced. Further, he built 3 food dryers, two of which he gave to his married children. He also had reciprocal arrangements with local farmers and friends, exchanging labor for animal manure to be used as fertilizer.

INPUT-OUTPUT NETWORK OF A HOME GARDENER IN POTSDAM, NEW YORK



### Dependance on and Affinity with Land

Sustenance from one's garden, whether that of immediate consumption requirements or that of year-long needs of preserved food, varies in its definition by informants. As previously mentioned, technology and total arable land plus the influence of the complex variable of individuality affect net yield and consequently, surplus. Minimal immediate consumption requirements are influenced not by the above variables but by a person's income and budget. As may be expected, the less the financial income the greater the dependance on net yield and surplus. The sense of "what we don't need, (i. e., minimal immediate consumption requirements and preservable surplus), we'll give away", is practically absent under these latter conditions and is replaced by a notion of recycling: "what we don't eat, the hogs will". Complete personal use of crops in such subsistence cases is the norm, expressed as the ideal of not letting anything go to waste.

It is interesting to note that when dependance on land increases, a gardener's affinity with land decreases. It is my contention that this peculiarity is based on the idiosyncrasy of man to remain detached from what he depends on.

To defend this theory I shall speak in extremes. Certain "Primitive" peoples like the Umor of Nigeria with a high dependancy upon land practice elaborate fertility rites. Since ritual is involved it may be inferred that the Umor view their gardens as not being totally within their control, though definitely within the control of some deity or force which they must propitiate. Thus there is an unequal relation between deity/force and man with man the petitioner of favors through ritual. This

high dependancy on deity/force is associated with an almost fatalistic outlook on the part of man.

At the other extreme, "modern" man, of which my informants will serve as an example, has replaced fertility rites with science and technology. It should be mentioned that none of my informants were even slightly near as dependant upon the soil for sustenance as the Umor. This being the case, it is difficult, if not impossible, to determine if science and technology was the cause which resulted in the abandonment of soil-related ritual and the achievement of low dependency or if low dependency was the cause which resulted in the abandonment of soil-related ritual and the development of science and technology. Whichever the case may be, once science and technology and a lowering of dependency came about, soil-related ritual was on its way out. What has evolved in its place is a psychological identity with nature.

This same variability of dependence on land allows different degrees of affinity to the land. The more dependant a gardener is upon the soil for sustenance the less psychological identity, or affinity, he feels toward it. Conversely, the less dependant he is upon the soil for sustenance, the more psychological identity, or affinity, he feels toward it.

Although certain informants were markedly more dependant upon their gardens than others, none, as previously mentioned, were totally dependant. That is, there is always the supermarket to fall back on. All of the informants stated that they would not want to depend on gardening for a living. They feel that the demands and worry would prevent them from enjoying their labors as they would have to rely on the outcome too heavily to take it

lightly. This, of course, supports my contention that pleasure in gardening varies inversely with dependence upon it.

### The World View of Gardeners

Labor in the garden is not considered "work", nor is it considered an expenditure to be counted in garden bookkeeping. By this reasoning home garden produce is very inexpensive. But gardeners do work hard in their garden, investing 12 hours or more per week during the spring and during harvest times. To the economist and commercial farmer, such activity is unquestionably labor, but to the home gardener, it is recreation. In fact, to some home gardeners this work is admittedly therapeutic. Tension is relieved, problems are solved, ideas arise, and enjoyment results. Though gardening clearly contributes economically to the gardener's household consumption unit, it is an activity without work because work is what one gets paid to do, and getting paid for gardening, we have seen, pollutes it. Relatedly, bookkeeping among home gardeners is rare and casually done; the idea of such objective calculations is antithetical to the spirit of gardens.

Whether they viewed their labor as therapeutic or fun, all informants viewed their gardens as a thing of order. Of course, individuals' conceptions of orderliness varied; again the variable of individuality appears to exert a decisive influence.

Most gardeners strive for neat, parallel rows of single species arranged in rectangular plots. The occasional weed or two and certain innovations though would break the pattern. Innovations included black plastic sheets spread along paths and rows to prevent weed and growth, the French technique of planting in wide dispersed rows for even more crop yield on less land, and "tier planting", in which one crop is planted under another to

provide shade and greater yield.

Gardening is imbued with a powerful aesthetic sense of orderliness bordering on a quirk. This aesthetic applies also to the preservation process. One informant reported that after canning, when she saw her counters and kitchen table lined with neat rows of jars of assorted produce, she felt a sense of pride and accomplishment. She further felt it a shame to put the jars away in a cupboard where no one could witness their vast bulk and uniformity.

Neatness in the garden is the desired result of a definite motivation common among gardeners, of "making order out of chaos." Informants who possess this feeling of pride and identity with their gardens have what may be called a religious awareness about their gardens. The cosmos is reflected in miniature in these plots of turned, nurtured soil, where order prevails and man dictates the cosmos' actions. There are no discrepancies here, no one to seriously threaten their authority. Gardeners are for all intents and purposes the supreme being who is responsible for the well-being and safe-keeping of the gardens' inhabitants, striking down foe with biodegradable lightning and raining down manna from heaven in the form of chemical fertilizer and compost. Here is the ontology of the individual, here is a personalized, self-made and maintained Garden of Eden, complete with snake as foe, which must be defeated. The garden is therefore the reflection of self, an art work in loam and chlorophyll, a self-portrait on the miniature cosmos.

This psychology of gardeners is learned from childhood and developed throughout life. All gardeners or their spouses were exposed as children by their parents to gardening. This exposure

in childhood had different effects on gardeners of different sexes. After this childhood exposure to gardening, women maintained window boxes and potted plants when garden plots were not available. Crop yield under these circumstances was minimal, and so it may be inferred that economics played an infinitesimal role in the women's primary desire to garden. This minor role of economics for women gardeners continues even after establishing their full size gardens. The religious awareness and the enjoyment aspects seem to be important motivations for women gardeners. Nutrition, wholesomeness and economics are secondary concerns.

On the other hand, male gardeners who were exposed to gardening as children usually dropped the tradition entirely, only to return upon acquiring a family. Informants stated that their return to gardening was prompted by economic concerns, such as saving money and helping to feed a family. Again, as with the women, wholesomeness and nutrition were secondary. At some time throughout men's gardening experience economics as a primary motive was replaced by the religio-therapeutic, though nutrition and wholesomeness retained their positions of secondary importance. Economics shifts to third place as a stated objective.

### Conclusion

In conclusion, it should be noted that all informants hold that gardening:

1. feels good,
2. tastes good,
3. is good for you,
4. saves money.

Though there are certain things that set gardeners apart as individuals, there are also factors that bring them together. The main unifying factors are: the use of surplus in familial and communal interaction, psychological identity and affinity

with land, enjoyment derived from laboring in their gardens, and a sense of pride in their accomplishments.

Throughout this paper the personal factor of the individual gardener has been a key factor in the gardening process. I have stressed that this personal factor, this variable of individuality, influences land use in general, the distribution and use of surplus, communal and familial obligations, psychological identity with land, the sense of the aesthetic, and to a certain extent, dependance on land.

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