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WISCONSIN REGIONAL PRIMATE RESEARCH CENTER
AND
UNIVERSITY OF WISCONSIN DEPARTMENT OF PSYCHOLOGY PRIMATE LAB:
PARTNERS IN WASTE AND SUFFERING

Wisconsin Regional Primate Research Center (WRPRC)

"When the WRPRC received its initial grant from the National Institutes of Health in 1961, a close tie was established between the new center and the primate laboratory of the university's department of psychology, which for many years had been working with primates. Back in the thirties, studies of the development of infant rhesus monkeys had been started by a prominent member of the psychology department. These continued over the next three decades. Three major research programs were under way which laid the groundwork for research programs at the primate center: l) development of ways to measure subhuman primate learning, ranging from simple conditioning to concept formation; 2) the effects of cortical lesions on learned behaviors, with emphasis on the effects of unilateral and bilateral destruction of frontal, temporal, and occipital lobes and hemispherectomy; and 3) the analysis of primate motives, ranging from food deprivation to curiosity and manipulation."

The primate center's central emphasis has been on psychological development, with particular attention being paid to factors affecting the development of social behavior. "This includes the effects of brain lesions, enriched environments, separation, and Isolation." "Basic rearing studies in developmental psychology center on the behavior of monkeys reared in various conditions of social contact or isolation, including maternal deprivation...."

In addition, within the last ten years, the center has given increased emphasis to psycho-endocrinology, reproductive physiology, and experimental pathology.

The primate colony consists of approximately 1,200 animals. "Considerable interchange of animals takes place between the primate lab and the primate center, with the same animals, in some cases, being used by investigators in both groups." The center also maintains a colony of over 1,200 rodents.

The organizational and administrative structure in all seven primate centers is basically similar. NIH is obligated to provide basic maintenance for each center, and is committed to providing as much additional funding as possible. (In 1981 the NIH base grant to WRPRC was $2,220,619.) Considerable additional funding is received from NIH, a variety of governmental agencies, and some private sources.

(Preceding quotes taken from NIH publication, *Primate Research Centers: A Major Scientific Resource*.

The following examples of current, or recently completed, research give an indication of the primate center's focus. This information is from project proposals and reports on file with the university. Statements quoted come directly from the proposal or report.

"Hypothalamic Control of Puberty" (NIH, $200,322, 1977-82)

Purpose is to determine differences and similarities between primate and rodent mechanisms regulating puberty. These studies involve 98 monkeys and 240 guinea pigs, and include surgical destruction and electrical stimulation of various brain areas. Primates are confined in restraint chairs for long periods of time for monitoring. The wider purpose is to establish the guinea pig as a model for primate reproductive phenomena. The investigators cite previous studies that indicate that rats differ from guinea pigs and monkeys, but that guinea pigs are similar to monkeys. But they also cite evidence that monkeys differ from humans in significant ways pertaining to this area of study, which makes the whole question of the appropriateness of non-human primates as models for the human mechanism highly debatable. In fact, the researchers state, "Such species differences cast some doubt on the generality of any model that attempts to predict the mechanism regulating the development of reproductive ability in all female mammals".

"Hypothalamic-Pituitary-Testicular Development" (NIH, $184,797)

Purpose is to further understand the brain-gonadal function of guinea pigs from birth to puberty.

"Hypothalamic Control of Gonadtropin Secretion" (Funded through NIH base grant)

This study involves seven separate experiments on ovarectomized female rhesus monkeys. Different groups of these monkeys undergo either surgical removal of the pituitary gland, hypothalamic lesions in these areas, or electrical stimulation of the areas in order to observe the effects on hormonal levels. Primates are held in restraint chairs for long periods of time to obtain multiple blood and cerebrospinal fluid samples. Some of the subjects are decapitated in order to observe hormonal levels in the brain.

"Developmental Study of In Vitro Fertilized Monkey Ova" (NIH/DHEW, $444,757, 12/80-1184)

Purpose is to perfect techniques and media for in vitro fertilization, and study development of in vitro fertilized ova. This process has already been successful in humans, as evidenced by the well-publicized 'test-tube babies'. The researchers, however, cite moral, religious and social objections to 'test-tube babies' by some segments of the public as partial rationale for this experimentation with monkeys.

"a-Receptors and Prostaglindins in Reproduction" (NIH, $142,857. 12/80-11/85)

A study of sexual receptivity of guinea pigs. Further studies are planned to include rats and monkeys.

Department of Psychology Primate Lab

The primate lab has been conducting psychological and developmental studies of primates for 50 years or more. The most infamous of the researchers was Dr. H. Harlow. Although Harlow is no longer at UW, his protégé, Dr. S. Suomi, is continuing in his footsteps. Dr. Suomi is the principal investigator for the following experiments.

The WRPRC and the primate lab, while closely affiliated in many ways, sharing the same monkeys and other resources, are competitive professionally.

"Studies of Social Separation in *Macaca mulatta* (rhesus monkeys)" (NSF, $100,00 1978-81)

In this series of experiments one groups of monkeys is subjected to repeated mother-infant separations. Then some of these babies are repeatedly exposed to a "standard" fear-producing device. (This is a mechanical "monster" with moving arms, flashing lights and noxious noises which has been effectively used to produce fear in this type of research since 1973.)

Other groups of adolescent monkeys are repeatedly separated from their peer group. Some have control over their reunion, others do not. Some learn that after each reunion will come even longer separations, while others are trained to expect shorter separations after each reunion. The purpose was to induce "pessimistic" or "optimistic" attitudes respectively. It was postulated that the "pessimistic" attitude would lead to chronic depression.

Still other groups of monkeys are separated from their mothers at birth and raised with a cloth surrogate which has the capacity to forcefully reject the infant periodically. It was hoped that the infants with no control over this rejection would develop "learned helplessness".

"Production and Alleviation of Depression" (NIMH, $100,000+)

Two groups of monkeys (high-risk and low-risk) are identified by their reactions to repeated social separations. These two groups are then subjected to various methods of inducing depression

including additional separation and "other stressors". These "other stressors" include: putting the monkey in a small cage and then into a larger cage of strange monkeys for 24 hours, administration of depressant drugs via stomach tube, and confinement in a shuttle box (a device in which the monkey must learn to jump from one side of the box to the other in order to avoid repeated electrical shocks).

Some of the primates used underwent maternal separation at or shortly after birth, some were raised with surrogate cloth mothers, and some have been subjected to previous repetitive social separation manipulation.

The objectives are to l) identify the factors that separate high-risk from low-risk individuals, and 2) study the reactions to various stressors.

"As for generalizations, it should be pointed out that virtually all the proposed data to be collected can be obtained under roughly parallel conditions in humans essentially without ethical compromise. Thus determination of whether these rhesus monkey data generalize to humans will become an empirical issue, not a philosophical one as has previously been the case."

"The Influences of Ovarian Hormones and the Menstrual Cycle on Caloric Intake, Taste Preferences and Body Weight in Rhesus Monkeys" (Funded through several sources including $10,000 from Weight Watchers, Inc.)

While the investigators admit that numerous studies of this area in humans already exist (50 years worth), they still maintain that this study may have "significant implications for improving nutrition of children". (This at the same time that Reagan's proposed budget would eliminate summer food programs for more than a million poor children, and eliminate programs which now give 750,000 pregnant women access to prenatal nutrition programs.)

Other work presented in the primate center's 1981 Summary of Recent Progress:

"Effects of Sacrocordotomy on Reproductive Function in Male Guinea Pigs"

The spinal cords of guinea pigs were severed. Seven weeks later the animals were "sacrificed" and the effects on the reproductive system were observed.

"Naloxone Fails to Stimulate Sexual Behavior of Rhesus Monkeys"

According to prior reports, the drug, Naloxone, "induces impotent male rats to copulate to ejaculation... and induces spontaneous penile erections and erotic thoughts in normal men". During this study the monkeys were injected with Naloxone. During the test several of the monkeys were sick, while some were "still spontaneously vomiting two months later".

A study of the effects of surgically produced brain lesions on the regulation of male sociosexual traits found that lesioned male monkeys ejaculated and yawned less than intact males.

"I have produced 15 female monkeys whose mothers were treated for relatively short periods of gestation with testosterone propionate." (Daily for 15 consecutive days.) The purpose of this

experiment was to study psychosexual activity in the masculinized female monkey. Dr. Goy, Director, WRPRC

Some comments from the 1981 Director's Overview and Budget Summary Report:

"The disposal of radioactive wastes generated by research has become a problem. It is now required that such waste material be canned and trucked to a disposal site in Illinois.

"There exists a lack of innovation and willingness to attempt unusual approaches to the problems of science. Investigators are not willing to jeopardize their financial support by proposing projects which may possibly not result in worthwhile findings." Dr. Goy

Another way to get an idea of the thrust of a particular institution is to look historically at the work of its senior researchers. The following titles are taken from the curriculum vitae of Dr. Robert Goy. Dr. Goy has been the director of the WRPRC since 1971.

"Psychosexual Masculinization of Sub-human Primates by Pre-natal Treatment with Testosterone Propionate." (1966)

"Development of Bisexuality in the Male Rat Treated Neonatally with Androstenedione." (1969)

"Abbreviation of Behavioral Estrus in Guinea Pigs by Coital and Vagino-cervical Stimulation." (1970)

"Effects of Testosterone Treatment in Adulthood on Sexual Behavior of Female Pseudohermaphrodite Rhesus Monkeys." (1973)

"Hormonally Induced Pseudohermaphrodism and Behavior." (1974)

"Lack of Effect Vaginal Lavages and Oliphatic Acids on Ejaculatory Responses in Rhesus Monkeyst Behavioral and Chemical Analyses." (1976)

"Experimental Female Hermaphrodism in Rhesus Monkeys." (1977)

"Effect of Lateral Hypothalamic Lesions on Ingestive Behaviors in Rhesus Monkeys." (1977)

"Heterosexual, Autosexual, and Social Behavior of Adult Male Rhesus Monkeys with Medial Preoptic-anterior Hypothalamic Lesions." (1978)

"Peer and Maternal Influences on the Expression of Foot Clasp Mounting by Juvenile Male Rhesus Monkeys." (1980)

"Influence of Infant Interactions on Maternal-like Behavior in Nulliparous Rhesus Monkeys." (1980)

Dr. Stephen Suomi has worked at the primate lab since 1968. He is currently an Associate Professor of Psychology. A list of his publications include the following:

"Effect of Repetitive Infant-Infant Separation of Young Monkeys." (1970)

"Production of Depressive Behavior in Young Monkeys." (1971)

"Depressive Behavior in Young Monkeys Subjected to Vertical Chamber Confinement." (1972)

"Can Psychopathology be Reinduced in Rhesus Monkeys?" (1973)

"Experimental Psychopathology in Nonhuman Primates." (1975)

"Effects of Maternal and Peer Separations on Young Monkeys." (1976)

"Production and Alleviation of Depressive Behaviors in Monkeys." (1977)

"Effects of Imipramine Treatment on Separation-induced Social Disorders in Rhesus Monkeys." (1978)