

BIOLOGY AND HOMOSEXUALITY

1. Problem Formulation

Sexual orientation, specifically the direction of sexual feelings or behaviour toward members of one's own or the opposite sex has traditionally been studied at the level of psychology, anthropology, or ethics.

In the recent years efforts have been made to establish the biological basis of sexual orientation. In one such study the role of the anterior hypothalamus of the brain in the regulation of male-typical sexual behaviour was examined. More precisely, in the analysis of the region of the brain (from men and women of unknown sexual orientation), the volumes of one cell cluster INAH3 were reported to be significantly larger in men than women. The research shows that the region of the brain is involved in the generation of male-typical sexual behaviour.

This research was followed up by Simon LeVay and described in the paper " A Difference in Hypothalamic Structure Between Heterosexual and Homosexual Men" published in *Science*, Vol. 253, pages 1034-1037, 1991.

S. LeVay tested the idea that the size of INAH3 is related to sexual orientation, rather than sex. Specifically, he hypothesized that INAH3 is large in individuals sexually oriented toward women (heterosexual men and homosexual women) and small in individuals sexually oriented toward men (heterosexual women and homosexual men).

In order to test the hypothesis, brain tissue was obtained from 41 subjects at routine autopsies of persons who died at seven metropolitan hospitals in New York and California. Nineteen subjects were homosexual men who died of complications of AIDS and ten of other causes. Six subjects were presumed heterosexual women. One of these women died of AIDS and five of other causes. Tissue blocks containing the anterior hypothalamus were dissected from other slices and stored in formalin. These blocks were then given code numbers; all subsequent processing and analysis was done without knowledge of the subject group to which each block belonged.

The volume of INAH3 was measured for each of the 41 subjects. Subjects were classified into five groups according to three factors: gender, sexual orientation, and cause of death. These data are available in the SPSS file homo.sav located in the STAT 252 directory on the FTP server.

The following is a description of the variables in the data file:

<u>Column</u>	<u>Name of Variable</u>	<u>Description of Variable</u>
1	VOLUME	1,000 times the volume of INAH3 in mm ³
2	CODE	Group Number (an integer from 1 to 5) 1= Male, Heterosexual, AIDS Death 2= Male, Heterosexual, Non-AIDS Death 3= Male, Homosexual, AIDS Death 4= Female, Heterosexual, AIDS Death 5= Female, Heterosexual, Non-AIDS Death

We will use SPSS to answer the following questions using the data:

1. Do heterosexual males tend to differ from homosexual males in the volume of INAH3?
2. Do heterosexual males tend to differ from heterosexual females in the volume of INAH3?
3. Do heterosexual females tend to differ from homosexual males in the volume of INAH3?