The effect of heredity and hormones on human behavior

Heredity and hormones are interrelated when it comes to human behavior. When it comes to heredity, one must consider genetics, behavior genetics, and evolutionary psychology together. They come together to make a complete picture of the effects of heredity on human behavior. This picture is what leads to the development of the nervous system and endocrine systems of a particular individual, which then produce hormones. Those hormones then switch on behaviors.

Genetics is the study how traits are passed from one generation to the next through genes, which are found on chromosomes. Genes are responsible for the development of the nervous and endocrine systems; therefore, genes can influence the chance of a certain behavior occurring in a certain set of circumstances (Morris & Maisto , 2005). They are indirect to behavior, where hormones are direct. Genes are most often considered in a physiological manner, as in whether one is predisposed to being tall or short, or being blonde haired or blue eyed.

Behavior genetics are the other side of genetics, more specifically how genes can be considered to pass on psychological traits rather than physiological ones. Twin studies play a large role in establishing whether some behaviors are inherited. For example, they have given evidence to support the theory that verbal skills, aggressiveness, depression, and anxiety are all hereditarily. However, this may be skewed data as twins most often develop within the same environment (Morris & Maisto , 2005). Environment must be a consideration because it often times reinforces heredity.

However, one individual may experience the environment one way, while another will experience it differently (Morris & Maisto , 2005). It is always a

factor, and it can sometimes be difficult to determine just how much of an impact that it has on certain traits. Evolutionary psychology is like behavior genetics, but more general. Rather than try to specify within individuals, it seeks to explain how some behavior traits are shared by all. This field relies heavily on the concept of natural selection, and how it would affect which traits are passed on.

Evolutionary psychology is used to understand why children learn languages, regardless of language or cultural, in much the same way. It is also to be used in figuring out why men and women pursue different avenues when they are looking for mates (Morris & Maisto , 2005). Hormones can affect whether one is alert, sleepy, excited, or aggressive or whether or not on can concentrate. Some severe hormone changes can lead to psychological disorders such as depression (Morris & Maisto , 2005).

Hormones are secreted by glands. The thyroid gland produces thyroxin, which regulates metabolism. Too much or too little of this hormone can cause problems such as insomnia or feeling the need to constantly sleep. The thyroid also contains the parathyroids, which regulate calcium and phosphate levels in the body (Morris & Maisto , 2005). The pineal gland secretes melatonin, which regulates the sleep cycle. The pancreas secretes both insulin and glucagon, which regulate blood sugar levels.

The adrenal glands are responsible for secreting epinephrine, which triggers the sympathetic nervous systems, and norepinephrine, which triggers the release of ACTH and raises blood pressure (Morris & Maisto , 2005). The pituitary gland regulates the other endocrine glands, which has earned it the moniker “ master gland” (Morris & Maisto , 2005). It produces the most

hormones, including growth hormone, and the thyroid stimulating hormone (Farr, 2002). The gonads, testes in the male and ovaries in the female, are responsible for producing hormones called androgens and estrogens.

Androgens are male hormones, and estrogens are female hormones, but both sexes produce both. The difference is in the level of these hormones is sex dependent. Testosterone is the most common androgen, and estrogen in the most common estrogen (Morris & Maisto , 2005). These hormones each serve their own purposes in activating behavior. While both heredity and hormones affect human behavior, they do so in different manners. Hormones are the “ on” switch for behaviors, while heredity plays a more subtle role in human behavior.