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**Q. Describe the role of *one* hormone in the study of human behaviour, with reference to *one* relevant study.**

**Ans.** Hormones are those chemicals in the body that are produced by endocrine glands and are released into the bloodstream. Through the medium of blood, they reach different organs and tissues in the body and thereby control many human bodily functions and behaviours.

In the human body, there are various hormones that serve different functions. One of these is called 'oxytocin.' Oxytocin is produced by a part of the brain called hypothalamus and is then released by the pituitary gland. From there, it reaches various organs in the human body to control behaviours related to social intimacy and bonding. Examples of these behaviours include childbirth and lactation - oxytocin is found to aid contractions of the uterus during childbirth and the release of milk during breastfeeding of a baby; stress reduction - oxytocin is found to reduce levels of stress and anxiety which helps people relax and bond better with others; social bonding and trust - oxytocin is found to help in formation of social bonds, trust and attachment between individuals; etc.

Given that oxytocin is found to play a role in social bonding and trust, Kosfeld et al. conducted a study to investigate whether the administration of oxytocin could affect trust behaviours in humans. The researchers recruited a large sample of healthy male adults and randomly assigned them to either an experimental or a control group. The experimental group was administered an intranasal dose of oxytocin whereas the control group was administered placebo. Then, both groups played a trust game with real monetary stakes. Results showed that participants administered oxytocin showed higher levels of trust and staked more money by trusting their partner in the game than those who were administered placebo.

Thus, Kosfeld et al.'s study directly supports the role of oxytocin in playing a role in social bonding and trust. By increasing trust, oxytocin aids the formation of social bonds, which is seen in the result of the study that those participants administered oxytocin were willing to stake large amounts of money with their partners. These results give empirical evidence for the role of oxytocin in social behaviour, at least in the context of trust.

In conclusion, the study of hormones like oxytocin gives important insights into the biological basis of human behaviour. The role of oxytocin in social bonding, trust and stress reduction shows the relation between our hormonal physiology and our social interactions.

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**Q. Describe *one* study investigating the role of *one* hormone on human behaviour.**

**Ans.** Hormones are those chemicals in the body that are produced by endocrine glands. Through the medium of blood, they reach different organs and tissues in the body and thereby control many human bodily functions and behaviours. One such hormone is oxytocin which plays a role in social bonding behaviours such as childbirth, breastfeeding, stress reduction, formation of social bonds, trust, etc.

Kosfeld et al. conducted a study to specifically investigate the role of oxytocin in the social behaviour of trusting others. They conducted a true experiment in which they asked participants to play a game of trust with each other. They manipulated the independent variable (IV) of administration of either oxytocin or placebo to each participant. Operationally, half the participants in the study received oxytocin via an intranasal spray and the other half received placebo in the same way. Participants were randomly allocated to either one level of the IV, making the experimental design an independent measures design. The dependent variable was the level of trust displayed by participants which was operationalised as their investment decisions in the game of trust with real monetary stakes.

The sample of the study consisted of healthy male adult university students who had been recruited using opportunity sampling. Participants first received either oxytocin or placebo. Then they played the trust game in which they took on the role of either investor or trustee. The investor had to receive some money and decide how much to transfer to the trustee. Any amount decided would be tripled by the researcher. The trustee then decided how much of the tripled amount, if any, to return to the investor. Controls were maintained such that neither the participants knew whether they had received oxytocin or placebo, nor did the researcher who was facilitating their trust game. This double blinding ensured that neither expectancy effects on part of participants by knowing they had received oxytocin, nor researcher bias from the researcher's knowledge of the same influenced how much trust was placed on the other player. The researchers calculated both players' final payoffs based on their decisions to study any role of oxytocin.

The results of the study showed that oxytocin increased the monetary stakes that investors made towards the trustees as compared to placebo. Thus, by showing a causal link between oxytocin levels and trust behaviour, researchers empirically demonstrated the role of one hormone on behaviour.

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