

Discuss research into ultradian and/ or infradian rhythms (16 marks).

Define infradian rhythms with an example.

An infradian rhythm is a type of biological rhythm that lasts longer than 24 hours, such as the menstrual cycle which lasts approximately 28 days.

Outline the research.

McClintock and Stern (1998) took samples of pheromones from 9 women and then exposed to the pheromones to 20 others. They found that 68% of women experienced changes to their cycle. When they inhaled secretions from women about to ovulate their menstrual cycles became shorter. When they inhaled secretions from women who had just ovulated, their menstrual cycles became longer showing that pheromones are exogenous zeitgebers which affects the cycle.

One or two fully elaborated PEEL about the study.

P: A limitation of this study and other similar research is that extensive criticisms have been made of the methodology.

E: It is argued that there are many factors that may effect change in a woman's menstrual cycle, including stress, changes in diet and exercise. These can all act as confounding variables.

E: This means that any supposed pattern of synchronisation, as seen in the studies by McClintock and others, is no more than would have been expected to occur by chance.

L: The results therefore may lack internal validity and it questions whether pheromones do affect the menstrual cycle.

P: A strength of the menstrual cycle being governed by exogenous zeitgebers (external factors) is that there is other supporting evidence.

E: Reinberg (1967) examined a woman who spent three months in a cave with only a small lamp to provide light and found that her menstrual cycle shortened from the usual 28 days to 25.7 days.

E: This result suggests that the lack of light (an exogenous zeitgeber) in the cave affected her menstrual cycle.

L: Therefore, this demonstrates the effect of external factors on infradian rhythms.

Define ultradian rhythms with an example.

An ultradian rhythm is a type of biological rhythm that is less than 24 hours, such as the stages of sleep which occur approximately 5 times during an 8-hour sleep.

Outline the research.

Dement and Kleitman (1957) monitored nine adult participants in a sleep lab for 6-17 nights. The brain activity was recorded on an EEG. More dreams were recalled from REM than NREM sleep (152:11) showing that REM activity during sleep is highly correlated with the experience of dreaming.

One or two fully elaborated PEEL about the study.

P: A strength of this study is that the results have high internal validity due to the high level of controls.

E: Participants were all restricted from caffeine and alcohol to ensure that these substances did not influence the DV.

E: This means the researchers can be confident that it was the stage of sleep that was having an effect of dreaming to be able to establish cause and effect.

L: As a result, the researchers could confidently conclude that dreaming occurs mostly during REM sleep.

P: A limitation of the above study is that the results may lack ecological validity.

E: This is because the participants were in an extreme artificial environment as they were sleeping in an unusual environment wired up to an EEG machine.

E: In addition, the task of being woken up and being asked questions about your dream is also unrepresentative of sleep in the real world. Therefore, the task lacked mundane realism.

L: As a result, the findings from this study can only be generalised with caution to real life settings.