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Conditioned flavour preference in pigs: comparison between caloric and/or gustative reinforcements

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Behavior 2011 ABSTRACTS

Joint meeting of the
**Animal Behavior Society &
International Ethological Conference**

Plenary and Symposium Lectures, Contributed Talks and Posters

In alphabetical order by presenting author

P10 Contributed Poster: APPLIED ANIMAL BEHAVIOR 1 (Poster Session A: Weds. eve)

HIGH AGGRESSION IS ASSOCIATED WITH BOLD PROFILE IN NILE TILAPIA

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We evaluated whether personality profiles (shy/bold) are associated with aggressiveness in the fish Nile tilapia (*Oreochromis niloticus*). We tested 115 fish (8.8 ± 0.6 cm) for shy/bold profiles by measuring their reaction to a sudden introduction of a novel object into the aquarium. We used two tests (distinct object) performed with a 24-h interval. Fish considered shy (27 fish did not leave their initial place) or bold (22 fish approached the object in less than 40 s) in both tests were tested for aggression 60 days later. We then tested individual aggressiveness in a mirror test (20 fish per profile) and subsequently by pairing size-matched fish of a same personality trait (10 pairs per profile). Both aggression and personality profiles were not associated with sex. In the mirror and pairing tests the bold fish fought more ($p = 0.03$) and spent more time engaged in fights ($p = 0.02$ and $p = 0.014$, respectively). Bold fish started fighting the mirror sooner than shy fish ($p = 0.03$). Thus, we showed a clear association between personality profile and aggression, where the bold fish are the most aggressive.

P267 Contributed Poster: COGNITION AND LEARNING 2 (Poster Session B: Thurs. eve)

CONDITIONED FLAVOUR PREFERENCE IN PIGS: COMPARISON BETWEEN CALORIC AND/OR GUSTATIVE REINFORCEMENTS

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We induced a conditioned preference toward a flavoured beverage via caloric and/or gustative reinforcement. During 6 two-day conditioning sessions, 9 juvenile pigs received flavoured beverages added with sucrose (F+) or with no additive (F-). During conditioning, the pigs consumed F+ more than F-. F+ was also significantly preferred during a further two-choice drinking test without sucrose, suggesting that the pigs developed a short-term preference for a flavour previously paired with sucrose. To study the efficiency of visceral (calories) vs. gustative (sweet taste) reinforcements in preference conditioning, 9 pigs were subjected to 4 three-day conditioning sessions and received flavoured beverages added with maltodextrin (F+m, calories), saccharin (F+s, sweet taste), or no additive (F-). During conditioning, the pigs consumed F+s less than F+m and F-. During further two-choice tests, no clear-cut preference emerged, but the consumption of F+m was 107% higher than that of F-. These findings suggest that a visceral reinforcement might be sufficient to condition a flavour preference. Further studies are needed to investigate the failure of saccharin-conditioned preference.

P342 Contributed Poster: MATING SYSTEMS 2 (Poster Session B: Thurs. eve)

HIGHER TEMPERATURES MEAN FEWER EGGS? THE IMPACT OF THE WARMING WORLD ON A TROPICAL SEABIRD SPECIES

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Clutch size in least terns in the southern Gulf of Mexico ranges from 1 to 3 eggs. Environmental temperatures during breeding season fluctuate from 26 to 52°C. Ideal incubation temperature is between 36 to 40.5°C for optimal development. A predicted increase of ~4°C in earth global temperature could make difficult to incubate and raise large clutches in hot environments. We measured and compared nest temperatures and incubation behaviour between 2-egg clutches (2-ec) and artificially enlarged 3-egg clutches (3-ec). In 3-ec, nest attendance was higher and changeovers were lower than in 2-ec and adults from 3-ec spent more time incubating tight than adults from 2-ec. Less frequent changeovers indicate that individuals had to spend more time foraging to satisfy their energetic needs. Despite the behavioural differences, nest temperatures in 2-ec were more stable and closer to the ideal incubation temperatures. In conclusion birds breeding in hot environments might lay fewer eggs as environmental temperatures increase due to climate change because behavioural modifications are not enough to maintain ideal incubation temperatures of large clutches and more energy is needed as well.