



Basal metabolic rate and style of exploratory behaviour in great tit (*Parus major* L.)

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Mode of exploration of novel environment by birds which may be detected in open field (OF) tests was shown to be heritable trait. In nature so called fast and slow explorers markedly differ in patterns of social competition, searching behaviour, dispersal distances and the way of achieving reproductive success (Dingemanse *et al.*, 2002; Drent *et al.*, 2003; van Oers, 2003). Such difference in life strategies can be associated with difference in reallocation of daily energy expenses during same phases of annual cycle. According to the energetic model (Gavrilov, 1997) basal metabolic rate (BMR) may serve as indicator of working capacity of an animal and its ability to perform long time energy consuming behaviour. Recent studies of BMR variation in free living and captive birds showed rather high heritability estimate of this physiological trait (Bushuev, 2009; Nilsson *et al.*, 2009; Tieleman *et al.*, 2009). On example of young great tits, we investigated the relation between BMR and personality behavioural traits, using standard OF tests in late autumn. On average, great tits differing in exploration scores did not differ in BMR. However, fast and slow explorers showed opposite trends in BMR change during their subsequent winter stay in contact with heterosexual partner in outdoor aviaries. This feature was peculiar for males but not females. The results suggest that different personalities differ in factors influencing BMR plasticity. The functional consequences of such asymmetry were discussed in terms of energetic model.