**Committed to the insurance hypothesis of obesity**

doi:10.1017/S0140525X16001461, e121

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**Abstract:** Can ideas about the regulation of body mass in birds be used to explain the breakdown of regulation associated with obesity and anorexia in humans? There is no evidence to think so. Medicine can always benefit from the application of evolutionary ecology ideas, but we must be prepared to dismiss these ideas when they just do not fit the data.

It is always inspiring when evolutionary ecology is applied to enduring problems in human health. Birds adaptively and carefully regulate their body mass. When food supplies are unpredictable, birds carry more fat reserves, just in case, but when food is regularly available, they remain lean and save themselves the cost and risk of flying around carrying all that extra weight. Nettle et al. use this paradigm about optimal body mass regulation in birds to attempt to explain the complete failure of body mass regulation associated with obesity in humans.

The authors first present the evolutionary mismatch hypothesis (EMH), which is based on the premise that humans evolved in, and are adapted to, conditions different from the conditions that we face today. The EMH applies to many aspects of human biology, not just to obesity. As related to obesity, the EMH has at least two variants: namely, the thrifty genotype hypothesis (Neel 1962) and the drifty gene hypothesis (Speakman 2008). These hypotheses are not mutually exclusive, and neither one is considered to be perfect or complete. Nevertheless, Nettle et al. dismiss the EMH—probably just Neel’s formulation—because, they argue, if the hypothesis were complete, then “all humans living under conditions of affluence should be overweight or obese” (sect. 2, para. 2). Tobacco companies could use this logic to dismiss smoking as a cause for lung cancer because not everyone who smokes ends up developing cancer. Clearly, other factors are also involved.

The authors mention two other problems with the EMH: differences in obesity rates among countries and between the sexes. However, differences among countries could be easily explained by culture and diet (Dinsa et al. 2012; Shetty & Schmidhuber 2006). Similarly, the fact that in high-income countries obesity is by culture and diet (Dinsa et al. 2012; Shetty & Schmidhuber 2006). The IH specifi-
cally predicts that people who are certain about their food supply should maintain a relatively low fat load, but not that they should develop anorexia nervosa.

In summary, Nettle et al. begin and remain fully convinced of the validity of the IH. One wonders what evidence would have been sufficient for them to reject their hypothesis. The hypothesis that birds carefully regulate their body mass depending on the variability of food supplies is logical and well supported. Unfortunately, this hypothesis clearly cannot be extended to explain the complete failure of body mass regulation that leads to obesity in humans. It is promising when researchers try to make sense of human biology using the light of evolution, but disappointing when the light’s brightness prevents them from seeing their own data.

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**Social nature of eating could explain missing link between food insecurity and childhood obesity**

doi:10.1017/S0140525X16001473, e122

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**Abstract:** We suggest that social factors are key to explain the missing link between food insecurity and obesity in children. Parents and public institutions are children’s nutritional gatekeepers. They protect children from food insecurity by trimming down their consumption or by
References/Nettle et al.: Food insecurity as a driver of obesity in humans


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Bolton, C. M. (1997) Predation risk and fasting capacity. Do wintering birds main-
tain optimal body mass? Ecology 68:1051–61. [aDN]


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