**Put the following phrases in order from 1-9 according to how you think the discussion should be organized (1 = first part of discussion, 9 = final part of discussion).**

\_\_\_\_Further research should consider how, despite habituation to human presence, urban taxa modulate their reactions according to subtle differences in human behaviour. Assessment of, and potentially habituation to, human activity is an important criterion for successful urban adapters and urban exploiters.

\_\_\_\_Rodriguez-Prieto *et al.* (2009) found that blackbirds *Turdus merula* in urban parks in Madrid with high exposure to humans had short flight initiation distances, but these increased when approached by a novel ‘predator’ in the form of a radio-controlled vehicle. These data suggest that urban animals will modify their assessment of risk according to familiarity of behavior and objects.

\_\_\_\_In the urban environment, the mark of a successful animal species is likely to be its ability to distinguish between innocuous stimuli and genuine risk. Eastern grey squirrels have established populations in the many cities across the globe. In this study, we show that eastern grey squirrels living in a Manhattan park show behavioral flexibility towards pedestrian activities.

\_\_\_\_One possible explanation for these findings may be that bolder individuals are more likely to be present closer to the roads/paths, as has been noted for burrowing owls *Athene cunicularia* (Carrete & Tella, 2010). Bolder individuals may be able to exploit resources closer to paths/roads despite exposure to greater amounts of human traffic.

\_\_\_\_First, squirrels were more reactive when the pedestrian was looking directly at them as he approached, as has been observed in urban birds (Bateman & Fleming, 2011; Clucas *et al.*, 2013; Lee *et al.*, 2013). Second, squirrels were more reactive towards a person that diverged from ‘normal’ behavior by not keeping to the footpaths. Similar responses have been recorded in Alpine marmots *Marmota marmota* (Mainini, Neuhaus & Ingold, 1993) and for American robins *Turdus migratorius* (Eason *et al.*, 2006), which demonstrate longer flight initiation distance in response to hikers that have moved off established trails than hikers that were on trails.

\_\_\_\_We have identified cues that are likely to be important for risk perception by an urban animal species monitoring its environment. Together with direction of attention of people, urban squirrels were more reactive to pedestrians that showed a divergence from ‘usual’ behavior, even when not associated with closer approach or changes in speed.

\_\_\_\_In addition to being arboreal (which can include use of anthropogenic structures), which minimizes vulnerability to diurnal terrestrial ‘predators’ (see Herr, Schley & Roper, 2009), general trophic and social flexibility (Baumgartner, 1943; Don, 1983; Koprowski, 2005) may help explain why eastern grey squirrels are successful urban adapters.

\_\_\_\_In the face of increasing urbanization across the globe, the life history and behavioural attributes of those taxa that are good urban adapters warrants further study (Bateman & Fleming, 2012).

\_\_\_\_Our study emphasizes the importance of monitoring for urban adapters. Most people represent a low risk to the squirrels in this Manhattan park, and the squirrels consequently continue to forage when approached. However, being sensitive to subtle cues in the behavior of their human co-inhabitants is likely to contribute to the success of eastern grey squirrels in highly urbanized habitats. There is nothing that should be inherently less ‘risky’ about a pedestrian that is 2 m away and moving on a footpath than one that is the same distance away, but moving on the grass, except that people rarely walk on the grass in this Manhattan park.

*Modified from Bateman & Fleming (2014)*

*Bateman, P.W. and P.A. Fleming. 2014. Does human pedestrian behaviour influence risk assessment in a successful mammal urban adapter? Journal of Zoology: 1-6.*