Review of "The Influence of an Invasive Species, the Common Myna (*Acridotheres tristis*), on the Behavior of a Local Species, the House Sparrow (*Passer domesticus*)" – Itai Berger's PhD thesis.

This dissertation examines, through a series of clever experiments, the behavioral responses of a native species – the house sparrow, to a common invasive species – the common myna. The results paint a complex picture in which the sparrows benefit from the presence of the mynas while foraging and prefer to forage next to them, but at the same time, they also suffer lower reproduction success as a result of their anti-predator behavior driven by the presence of the mynas. I think that the experiments are well planned, clever and deal with a timely topic. Despite the low sample size, the results definitely expand our knowledge on this important subject.

The major weakness of the thesis is the framing. Simply put, I felt that the thesis lacked focus. As mentioned above, I found the experiments to be excellent, but it was not easy to glean out their importance from the thesis. To a minor degree the lack of focus is apparent in the (too) long introductions of chapters 2 and 3, but the writing is flowing enough to not make it a major issue. The lack of focus is most apparent in the general introduction and in chapter 1 (which together make almost half of the thesis). The general introduction reads like a textbook entry on invasive species. This is not bad by itself, but at no point did I get a clue what the thesis is really about (i.e., what gaps is it trying to fill and why) until I reached chapter 1 which basically served as a very long second introduction (more on that below). If the thesis is focus on the impact of invasive species on animal behavior, I would expect to find much more on this topic in the introduction – how does animal behavior impact ecosystem processes? What are the mechanisms of behavioral change in animals? How can we use behavior in conservation (and how it has been used in the past)? These are all topics that the thesis deals with, and there is a lot of literature on the topic, but still they are hardly mentioned in the introduction (and not so much elsewhere as well).

Which leads us to chapter 1. Chapter 1 is presented as a review paper, but it isn't. It is an overview of the subject. While this overview is interesting and it is clear that Itai has read many papers on the subject, it lacks structure and a research question which makes it a very long introduction but not a chapter by itself. The chapter has no methods for example. How were the papers that are mentioned in it selected? Based on what

criteria? It is mentioned that the aim of the chapter is to point out the gaps in the field, but the conclusions of the chapter doesn't really add anything new that was not already mentioned before (i.e., that there are lacks of studies looking at the impact of invasive species on native species' behavior). It is not surprising then, that chapter 1 is not even mentioned in the abstract – it isn't really a chapter. This point was already raised by the previous reviewers of the thesis and unfortunately the problem still remains. In order to improve the chapter it should either be a proper review with a proper quantifiable research question (for example – a review asking what behavioral changes have been studied in invasive species and in the native species affected by them, the methods will explain how the literature was extensively searched in order to answer this particular question, and the review will provide quantifiable answers that will include the different behaviors studied, the main findings, and the gaps in the literature). Alternatively, the chapter can be turned into a conceptual piece suggesting a framework that will organize this field, but this should be given a lot of thought and some visual outputs (e.g., figures).

Another symptom of the lack of focus is the outline – it isn't really an outline but more of a second abstract. Instead of detailing in short what was done in the intro, methods, results, and discussion, what is needed is to introduce the three chapters briefly, state their purpose and how they relate to the overall thesis objective. Lastly, another minor point raised by the previous reviewers that was not fixed – it is mentioned that the sparrows and mynas are model species for native and invasive species, respectively, but never explained why.

Minor and editorial comments:

Page 2, line 1: effect should be effects

Page 2, line 3: remove 'respectively'

Page 2, line 8: delete the last sentence (starting with 'The findings')

Page 8, line 16: invasion process should be invaded environment

Page 10 and many times throughout the thesis: You keep talking about passengers of ecological change (or anthropogenic changes). I get that it is taken from MacDougall & Turkington 2005 paper where they compared drivers of change to passengers "in the car of change", but out of this context it is simply confusing and wrong. I would change it to something like 'symptoms of ecological change'.

Page 12, line 5: UNCN should be IUCN

Page 12, line 14: You mean out of 7751 species? It isn't clear

Pages 13-14: You keep talking about the chances of becoming introduced, but I think you don't mean to refer to the traits that increase the chances that the animals will be taken by humans and transported to a novel environment, but rather to the traits that make an introduced species invasive (i.e., becoming invasive). Otherwise this is confusing.

Page 16 and forward: Notice that the space between paragraph keeps changing between and something within sections.

Page 23, lines 12-13: This is not a logical conclusion, because assuming that behavioral changes cause an ecological impact does not mean that there are no other factors having to do with invasive species that have an ecological impact. Nest predation, or competition for resources by Mynas can impact the sparrows without them changing their behavior.

Page 23, lines 13-15: Why is this an important question/hypothesis. You are partly answering this question in the beginning of the outline, but it should be expanded upon here.

Page 23, lines 18-19: What experiments and observations? It isn't clear.

Page 24, line 12: …to define existing knowledge gaps.

Page 28, line 14: Finally should be Lastly

Page 29, line 9: Sociality tendency should be tendency towards sociality

Page 29, lines 11-12: You mean that only in these stages they were characterizing invasive species? It's unclear.

Page 31: The adaptive flexibility hypothesis is important in this respect. See Wright et al. 2010 (in Ethology, Ecology & Evolution).

Page 31, line 19-20: Selection is always at the population level. An individual either dies/produces less offspring, or not.

Page 35, line 7: can should be does.

Page 35, line 16: …such as those caused by

Page 36, line 7: …spent vigilant

Page 36, line 16: delete the first in and the 'in reduced in nutrition'

Page 37, line 24: assumed should be notable

Page 38, line 4: remove 'this'

Page 42, line 5: delete 'in'

Page 43, line 4: …the ecological impacts

Page 45, the red-legged frog example is an example of an evolutionary trap, not an ecological one.

Page 45, last line: among should be within

Page 52: Delete last sentence (starting with Scanning increases…)

Page 53, line 15: …behavioral titration

Page 53, line 24: Allocation of time to what?

Page 56, line 15: delete 'be to'

Page 60, line 22: Delete the sentence beginning with 'While foraging…'

Page 67, Table 1: How did you decide how many individuals to check in each group?

Page 67, line 7: an ANCOVA + figures references should be in order (Fig. 2 before Fig. 3).

Page 75, figures 7-8: From your results it seems that the graphs wrongly mixes the GUD (the amount of food left in the patch) with the amount of food consumed.

Page 75, first paragraph of the discussion: I don't think this is a good way to start the discussion. Start with summarizing what your results showed, then move on to other supplementary experiments (the next paragraph is a good example of that).

Page 76, lines 7-22: All of this just repeats what was already established in the introduction. I suggest deleting.

Page 76, last line: Why do you think this is?

Page 77, line 11-15: Delete the entire sentence starting with "if we do not". In the next sentence change however to since.

Page 88, lines 4-8: Is the EPC sentence relevant? I would delete.

Page 88, line 13: Delete 'Therefore'

Page 88, lines 18-19: Replace 'on the other hand' with However

Page 92, line 22: …necessarily negative in regards to.

Page 94, last two lines + first paragraph in page 95: This paragraph repeats the previous ones. I suggest deleting.

Page 98, parental care experiment: When was the experiment conducted?

Page 99, line 16: it is not clear at this point what is pre-entry behavior and how can you measure it.

Page 112, line 19: Less overall time for reduction? What do you mean?

Page 115, line 1: …a new selection pressure

General conclusions: The first part of this section mostly repeats the introduction. This is also a good place to mention behavioral indicators and the ways they are used in conservation.