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Why so Bugged?: Effects of Childhood Influences on Insect Perception

Introduction

A large portion of the adult population seems to classify insects and other terrestrial arthropods under the blanket term “repulsive,” no matter their species or role. Going forward, this group will be labeled under the blanket term “insects” for simplicity. According to a 2016 study by Chapman University, 25% of adults in the United States were found to even have a fear of insects (Fukano and Soga). This negative association that many adults carry begins in childhood when they are developing their understanding of the world. According to Foster et al., a child’s “multisensory participation” with the world around them, mainly the non-human aspects of the world, shape how they prioritize the importance of the web of life. While it is understandable to dislike pest insects that cause harm or damage, many overlook the importance that insects have on our ecosystems and day-to-day lives. About 80% of all flowering plants, and 70% of all plants harvested for human consumption, rely on animal pollinators, mainly insects, to grow (Pardo and Borges). This research paper will investigate the opinions and awareness that college students possess toward insects to see how the public can be better educated about their importance.

Literature Review

Prior studies regarding the public’s perception of insects seem to survey a wide range of adults, with no other demographic categories separating the subjects. In a study by Fukano and

Soga, they surveyed equal numbers of people, male, and female from each decade-spanning age range from those in their 20s to their 70s. While this was done to reduce biases in their results, the long range of ages could influence results as experiences and urbanization has changed drastically in that time. The results of their study showed that as people felt that they had generally more knowledge of a certain insect, their feelings of disgust would go down (Fukano and Soga). On the opposite side of the age range, some studies focus more on children, seeing if their perception of insects can be shaped as they are still developing. By allowing eighth-grade students to raise four different species of insects as part of their school curriculum, Hong et al. found that feelings of fear and disgust toward insects became greatly reduced. A key point in childhood interaction with insects seems to be the state the insects are presented in.

According to findings by Boileau and Russell, simply interacting with pinned collections of dead insects does not help solidify their importance to children. As such, children must be allowed to interact with live specimens to be given a full sense of their importance and the fact that they are living beings part of our world. If a child's parents or an adult educator were to have pre-existing negative emotions toward insects, the children under their care may not get these developmental interactions that are crucial. Building upon this prior research, the goal of this paper is to take a focused look at young adults, as they are transitioning from childhood to adulthood. By surveying what they believe influenced their perception of insects and whether they feel their perceptions can still change, this paper hopes to see how more awareness can be brought to the importance of insects.

Research Questions

1. How much does the media that college students grow up consuming influence their perception of insects in adulthood?

2. How much does a parent/guardian's perception of insects influence their children's?
3. How much influence do college students think insects have on their daily lives?

Methods

As the goal of this research is to survey the thoughts of young adults on insects, undergraduate students at UC Davis were surveyed. By randomly surveying students at UC Davis, the participants all fall under a similar age range while maintaining a random distribution for other characteristics. In the case of this study, there were eight participants (n=8), all between their first and third years at UC Davis. Of those that participated, 50% were female, 37.5% male, and 12.5% preferred not to say. This distribution allows for a good balance of responses for analysis. However, as interests and experiences may be unseen variables, additional demographic information such as major was taken. In future analyses, the demographic information could be used as a filter to discern patterns in the responses.

The data for my study was collected using Google Forms, with a link provided to UC Davis students allowing them to answer anonymously and of their own free will. The link was provided to UWP1 students for over a week. The survey included ten total questions: three demographic, four Likert scale, and three short-answer. For the Likert scale questions, a scale of 1 to 5 was used, with 1 corresponding to "Strongly Disagree," and 5 corresponding to "Strongly Agree." An example of each is shown below:

- Demographic: What is your Major?
- Likert Scale: My parent/guardian(s)' view of insects shaped my own.
- Short-Answer: What are some things about insects you believed growing up?

After the data has been collected, each question type underwent a type of data analysis. As discussed earlier, the demographic questions will likely serve as additional filters to find

patterns in the answers to the other question types. For the Likert scale questions, descriptive statistics are provided. By finding the median of the answers given, a precise middle ground can be given. This number will be used as a standard, with the assumption a compilation of answers from all young adults will yield a similar number. The responses were also put into a histogram to give a visual representation of the distribution of the data, with the addition of displayed percentages. For the short-answer questions, a thematic analysis was used. The responses were initially broken into categories of positive or negative associations and keywords will be extracted and compiled. By taking percentages and themes, the results of this study can be compared against future studies with variable participant sizes.

Results

By analyzing the percentages for each answer on both the Likert scale and short-answer questions, a generalized view of undergraduate students' opinions on insects emerges. Many of the students seem to have felt that external influences had indeed impacted their perception of insects and that insects were a less important part of our lives. In addition, a vast majority did not see their perception changing in the future.

Looking at how important college students thought insects were in our day-to-day lives (Fig. 1), the largest majority chose "disagree," with 38% of respondents choosing that option. However, the median of the responses falls under "neutral," meaning the average college student may see insects as just part of the world around them, with no clear role to play. Considering the question of "some insects being more important than others" (Fig. 2), 50% of the students chose "agree," with all other responses being "neutral," or better. Regarding how the college student's perception of insects was shaped, a majority selected "agree" for both their parent/guardian(s) and the media (Fig. 3 and Fig. 4), with 38% choosing so. However, the distribution of the

answers for each was vastly different from one another, with a skew toward “agree” from the media, and a skew toward “disagree” from their parent/guardian(s).

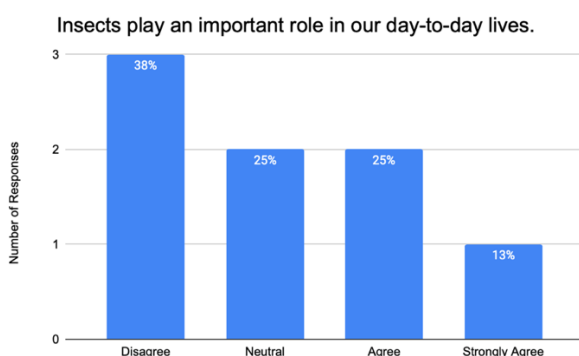


Fig. 1

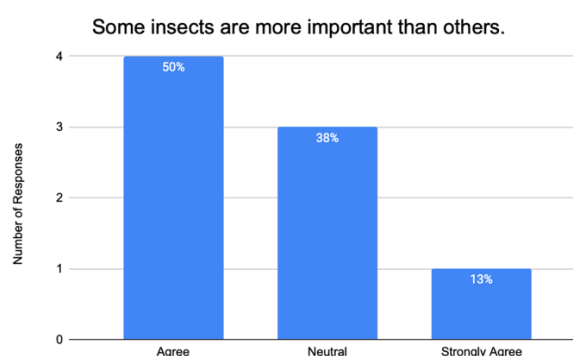


Fig.2

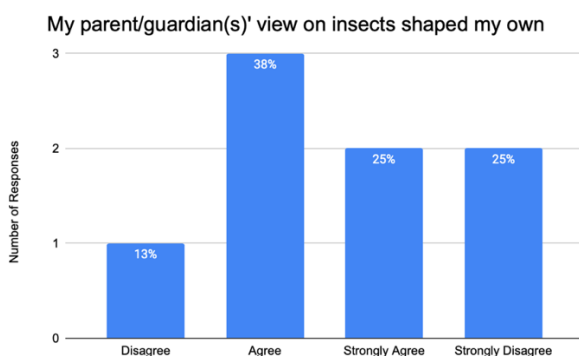


Fig. 3

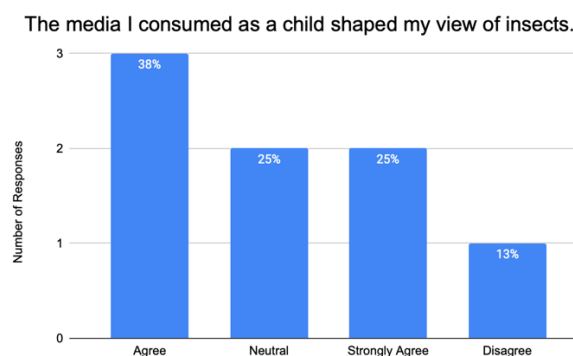


Fig. 4

To simplify the analysis of the short-answer questions, responses were sorted into “yes” or “no” responses to look at percentages. This showed that many undergraduate students felt that they still held the same opinions about insects that they had established in childhood, with 86% choosing so (Fig. 5). When asked whether they felt that their opinions would change in the foreseeable future, 86% of respondents answered “no” (Fig. 6). One thing to note from the responses is that those who answered in the majority for both were not all the same respondents. As such, the two questions’ data can be further broken down and analyzed. In total, 72% of undergraduate students felt that they held the same beliefs about insects since childhood and that their opinions would not change. 14% felt that their beliefs had changed, and their opinions

would not, while the last 14% felt that their beliefs had not changed, but they felt their opinions could.

Students on whether they hold the same beliefs about insects or not	Percent of Participants
Yes, they hold the same beliefs as their childhood selves	86%
No, their beliefs have changed since childhood	14%

Fig. 5

Students on whether their perception of insects would change or not	Percent of Participants
Yes, they saw their view changing	14%
No, they did not see their view changing	86%

Fig. 6

Discussion

The goal of the research was to expand upon prior research into the public's perception of insects by looking at the responses of young adults specifically. The rationale behind this was to see whether it would show a different distribution to results from studies like the one done by Fukano and Soga, which surveyed a wide age range of adults. However, as a majority of respondents claimed that insects were unimportant and they did not see their views changing, this does not add any new findings to their prior research. Another goal of the research was to look at the type of influence that might shape a person's perception of insects. Prior research by Hong et al. looked at allowing eighth-grade students to raise insects as part of their school curriculum. Additionally, Boileau and Russel found that allowing children to physically interact with insect specimens would lower their distaste for insects. While these studies addressed mediums outside of the household, part of the goal of this study was to find if parental influences were also important. As the Likert scale results in Fig. 3 and 4 showed, many respondents felt their parent/guardian(s) did influence their perception, however, the media they interacted with

had an overall greater impact. If future studies were to be carried out, it would be interesting to see why the influence of media seems to have a larger impact, especially when a child tends to interact with their parents daily as they grow up.

Conclusion

Overall, the findings of this research seems to support prior studies, while offering some details that may have some benefit being studied further. In answering the research questions of this study, each yielded an answer that seems to be supported well by the data. When it comes to the media and parental influences, both shape the perception that young adults carry with them into adulthood, with more support toward the media having a larger influence. As to the awareness of young adults of the importance of insects in our day-to-day lives, many understand that some are important, however, dismiss all insects under a blanket of neutral or negative perception. For future efforts of conserving insect populations vital to our ecosystem and economy, it may help to focus on the education of young children through the media that they consume.

Works Cited

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