

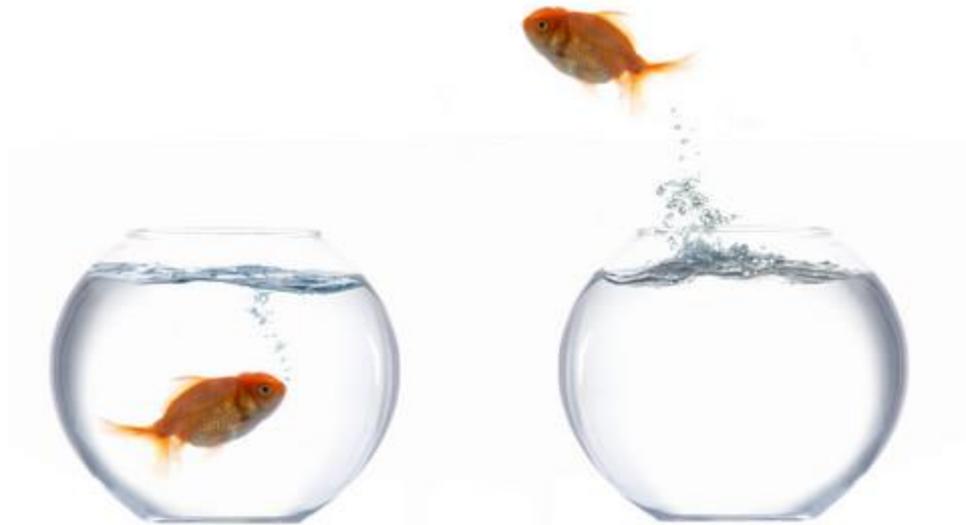
READING FOR  
STRUCTURE

**GSW 2019, Presented by Dr. Paul Papin**  
**Academic Development Specialist, Student Success Centre**  
**University of Calgary**

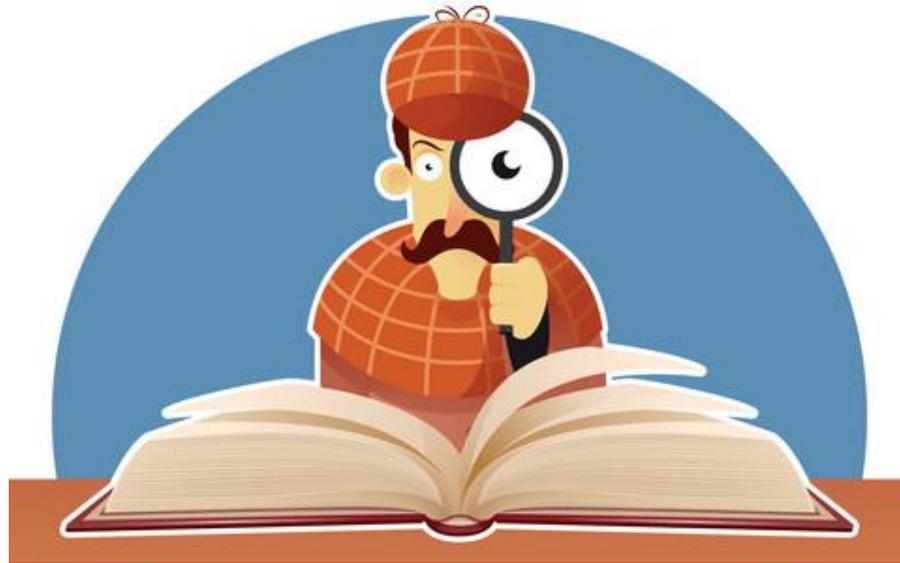
At a certain level of generality, the structural components of research papers are similar across disciplines.



Insofar as these components differ in their details across disciplines, you can become more aware of your own discipline's structural norms by looking beyond them.



These norms seldom rise to the level of course content (or even explicit supervisory feedback). Students are instead expected to *infer* them.



# Reasons to Read for Structure

- To improve your **comprehension**. An understanding of structure gives you “advance organizers” for the material you’re reading, and keeps you from being overwhelmed by detail.
- To increase your **reading speed**. At least initially, you can ignore the overwhelming detail that can slow you down.
- To improve your **recall**. A simple structure is easier to remember, and when you are ready to attend to detail, your sense of the overall structure helps you to attach relevant details to it in a memorable way.



THE MAIN QUESTION\*

\*A.K.A. THE RESEARCH QUESTION/PROBLEM

## The main question in our sample science article

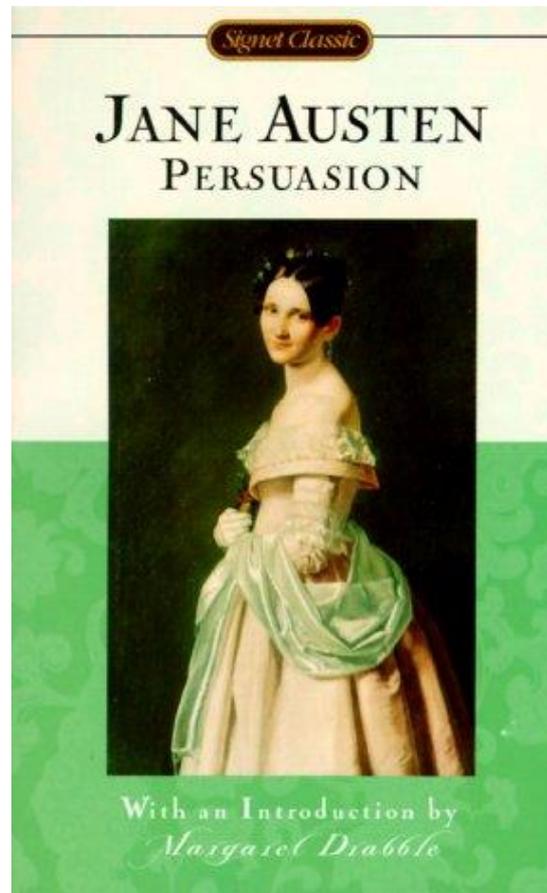


## The main question in our sample psychology/music article



How can listeners intentionally listen to the same song repeatedly without losing interest?

## The main question in our sample literary essay



Can Jane Austen be reclaimed as a feminist novelist?  
I.e., What are Jane Austen's gender politics?

What is a typical question in your discipline?

If you've already begun thinking about your own research, is the question you intend to propose discipline-appropriate?

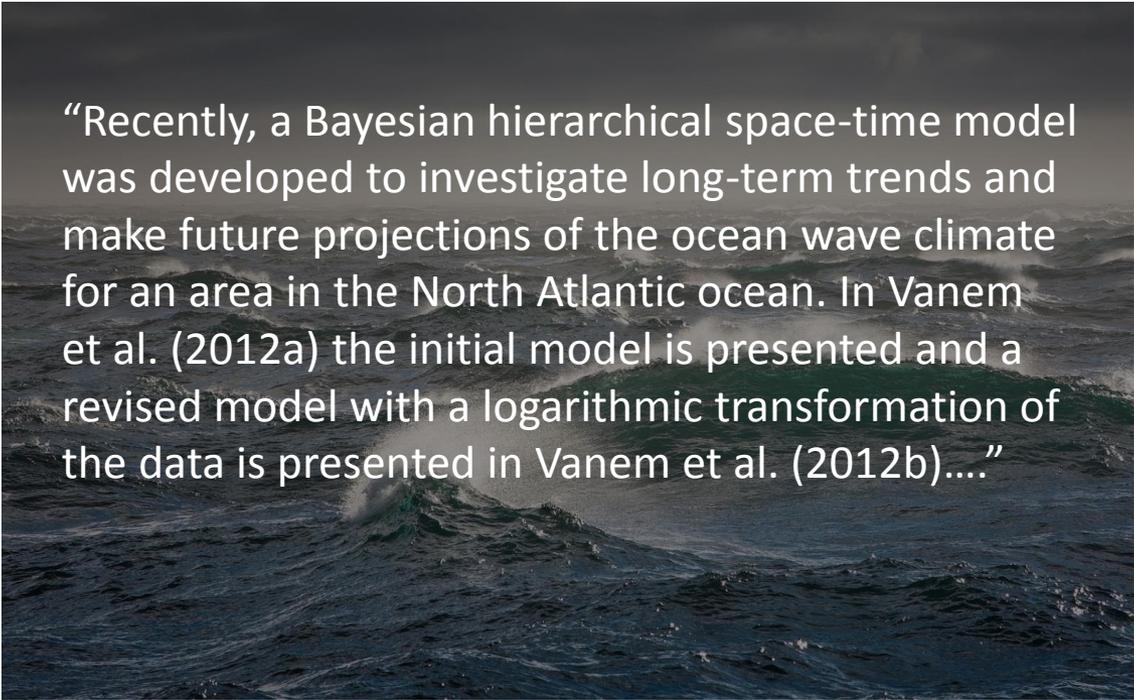


WHAT PREVIOUS RESEARCHERS HAVE  
ALREADY DONE IN THIS RESEARCH AREA\*

\*A.K.A. BACKGROUND,  
LITERATURE REVIEW

What have previous researchers done vis-à-vis predicting the effect of climate change on ocean-wave climate?





“Recently, a Bayesian hierarchical space-time model was developed to investigate long-term trends and make future projections of the ocean wave climate for an area in the North Atlantic ocean. In Vanem et al. (2012a) the initial model is presented and a revised model with a logarithmic transformation of the data is presented in Vanem et al. (2012b)...”

What have previous researchers concluded about repeated listening to music?

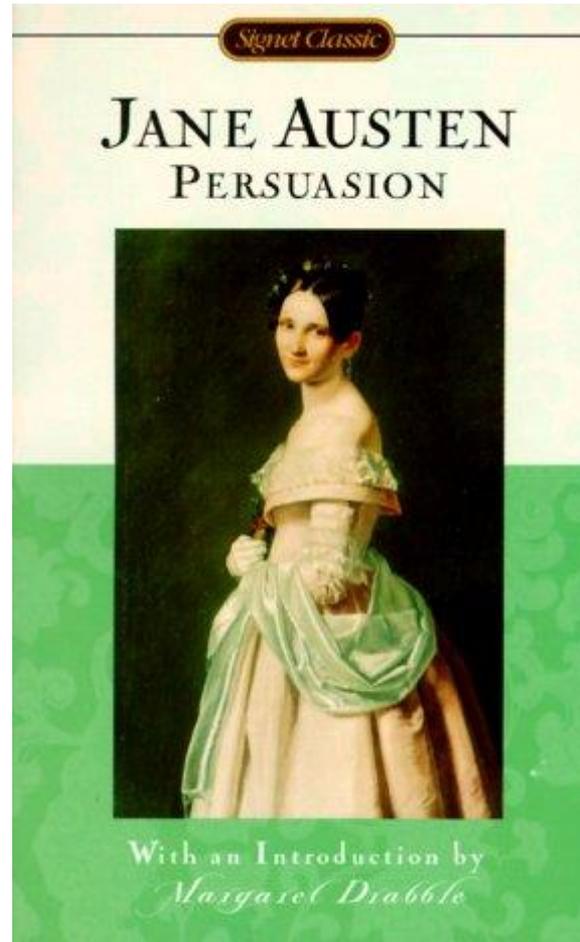




“Margulis (2014) has identified re-listening to songs as a special case of experiencing repetition in music and suggests that repeated exposure to a pleasurable stimulus produces a pattern of enjoyment that follows the Wundt curve ... in which pleasure ... increases with familiarity ... until reaching a ceiling after which [pleasure] diminishes.... For example, Jakobovits (1966) demonstrated that songs played frequently on the radio ....”

Take special note of the theoretical relationship between pleasure and familiarity.

What have previous researchers concluded about Jane Austen's gender politics?





“[Julia Prewitt] Brown has recently taken to task...influential feminist critics...for having misprized Austen’s politics by taking too literally (and too ahistorically) Austen’s insistence upon marrying off her heroines....

Positioning herself as taking a broader view than Austen’s ‘feminist detractors,’ Brown concludes that ‘we can only be grateful that Jane Austen’s place in history is not dependent on the narrow approach of feminists writing today...’”

In summary, influential feminist critics have seen Austen’s marrying off of her heroines as a sign of a non-feminist politics. Brown has argued, however, that this approach is narrow.

What do you make of the fact that previous research has *already* predicted the effect of climate change on ocean-wave climate using a Bayesian model? Is the current research redundant?

What do you make of the fact that a previous researcher (Brown) has *already* reclaimed Austen as a feminist novelist? Is the current research redundant?

What must be the case in these two instances if more research on the question is justified?

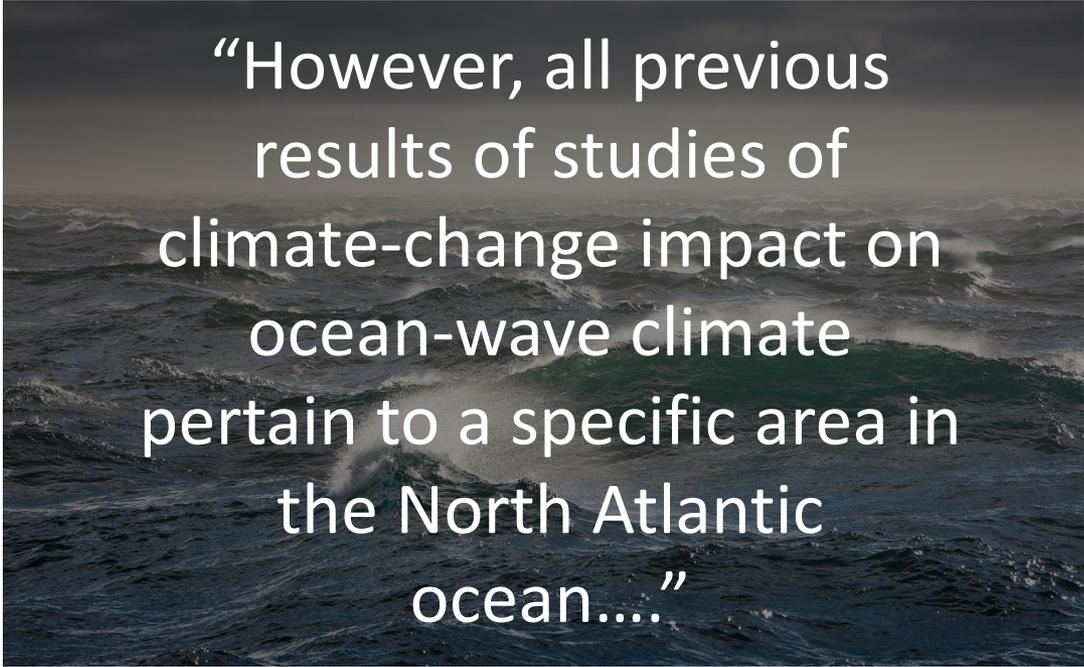


LIMITATIONS OF PREVIOUS RESEARCH

A.K.A. THE  
RESEARCH  
GAP

**What are the limitations of the previous research mentioned in our sample science article?**



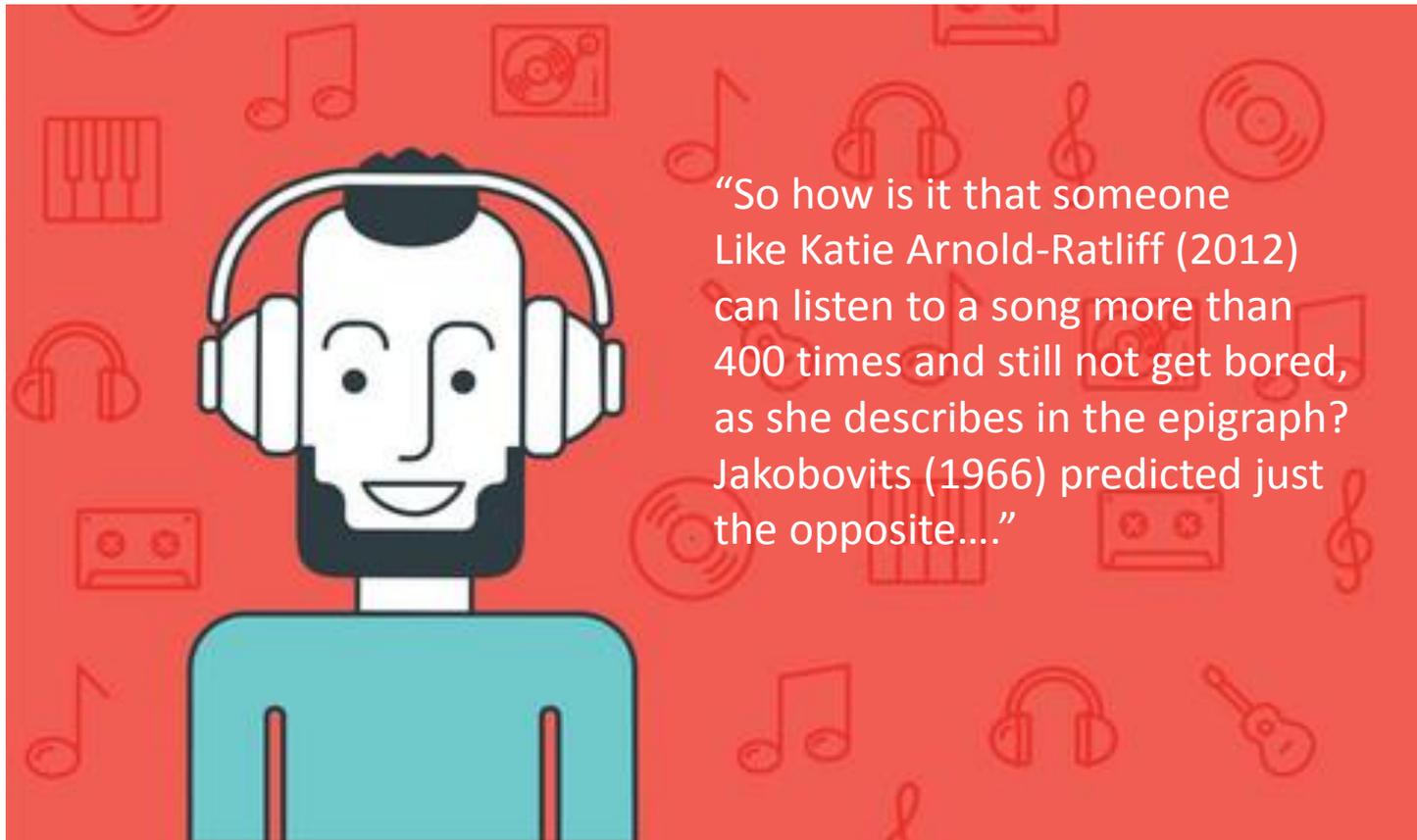


“However, all previous results of studies of climate-change impact on ocean-wave climate pertain to a specific area in the North Atlantic ocean....”

In other words, previous research on this question has been limited *in (geographical) scope.*

**What are the limitations of previous research mentioned in our sample Psychology/music article?**

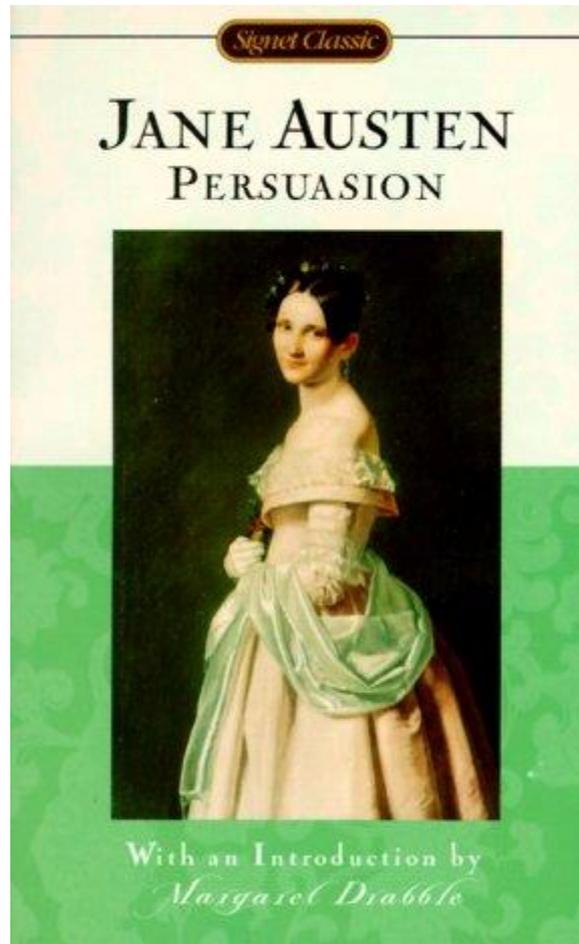




“So how is it that someone like Katie Arnold-Ratliff (2012) can listen to a song more than 400 times and still not get bored, as she describes in the epigraph? Jakobovits (1966) predicted just the opposite....”

In other words, the theoretical relationship between pleasure and familiarity that Jakobovitz demonstrated *fails to explain* Arnold-Ratliff’s case.

**What are the limitations of the previous research mentioned in our sample literary essay?**



Signet Classic



“What could be more narrow, though, than [Brown’s] call for revising reading strategies that limits the available possibilities to variations among ways of looking at heroines as if they were historical figures subject to the socio-political constraints of their author’s era?”

In other words, the author of our sample literary essay considers Brown’s historicized reading of Austen’s heroines to be narrow.

To sum up, the limitations of previous research may include (but are by no means limited to):

- Limited (geographical) scope
- Theoretical failure (to explain a case)
- A restrictive interpretive approach

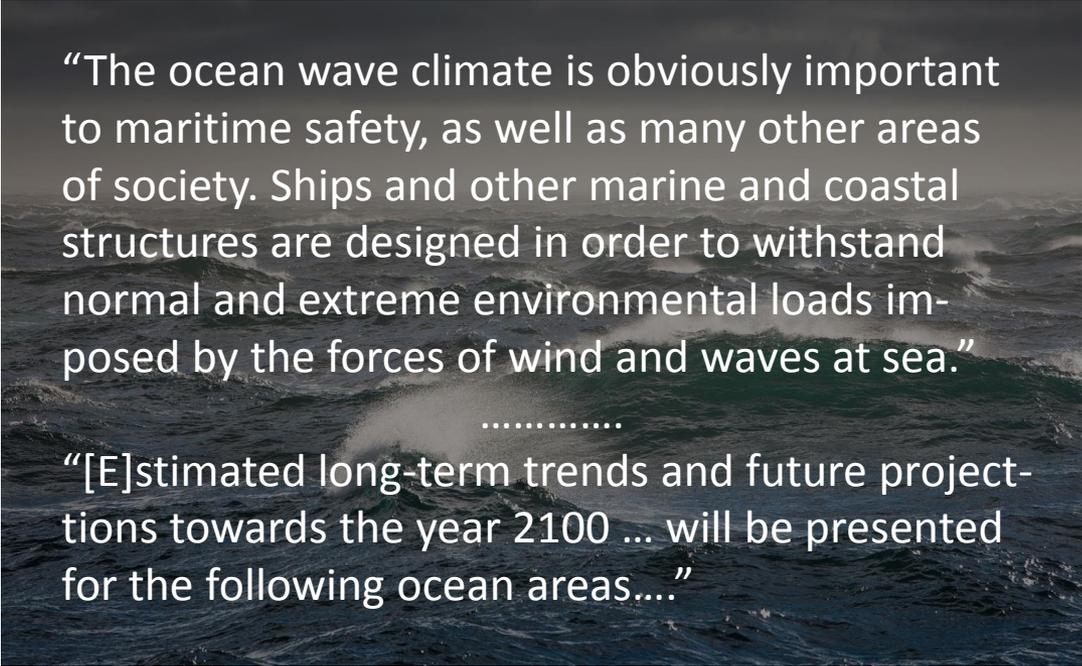


WHAT THE CURRENT RESEARCH WILL CONTRIBUTE\*

\*A.K.A. RESEARCH  
SIGNIFICANCE, RESEARCH  
CONTRIBUTION

**According to the authors of our sample science article, what contribution does their research make?**





“The ocean wave climate is obviously important to maritime safety, as well as many other areas of society. Ships and other marine and coastal structures are designed in order to withstand normal and extreme environmental loads imposed by the forces of wind and waves at sea.”

.....

“[E]stimated long-term trends and future projections towards the year 2100 ... will be presented for the following ocean areas...”

In general terms, the research contributes to safer designs of ships and other marine and coastal structures by predicting the future ocean-wave climate they will have to withstand. More specifically, the research contributes by predicting future ocean-wave climate in areas of the ocean that haven't yet been examined.

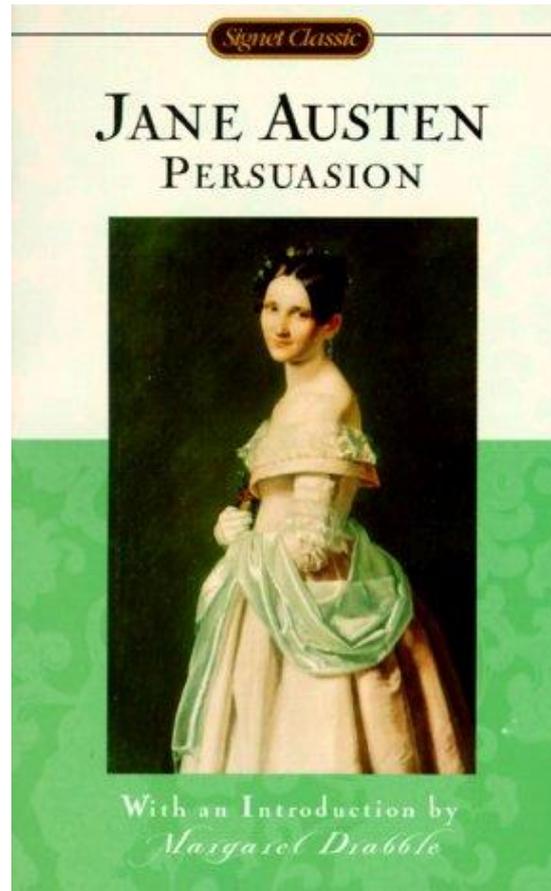
**According to the authors of our sample Psychology/Music article, what contribution does their research make?**





In other words, the researchers claim that their research contributes to the field by explaining a previously unexamined re-listening phenomenon—one that exhibits a relationship between pleasure and familiarity different from the one demonstrated by Jakobovitz.

**According to the author of our sample literary essay, what contribution does her research make to the field?**



“A close look at the narrative discourse of *Persuasion* yields an alternate view of Austen’s literary feminism.”



The research is said to contribute an *alternate view* (i.e. not Brown’s view) of Austen’s literary feminism.

# Summing up these three types of contribution:

- *Science article*: **Maritime safety**. The research will enable the future design of ocean-wave-proof ships & structures.
- *Psychology/Music article*: Explanation of a **new phenomenon**.
- *Literary article*: An **alternate view or reading** of Austen's literary feminism.

What kinds of contributions are claimed for research  
in your discipline?

If you've already begun thinking about your own  
research, what contribution will it make to the field  
or to society\* more broadly?

\*Not all disciplines engage in research with practical applications.

A photograph of a modern, white, curved architectural structure, possibly a bridge or a large-scale sculpture, set against a clear blue sky. The structure features multiple levels, arches, and a complex, flowing design. The text is overlaid on a white banner at the top left.

HOW THE MAIN QUESTION WILL BE ANSWERED

\*A.K.A. METHODS, MATERIALS,  
THEORETICAL/CONCEPTUAL  
FRAMEWORK, EXPERIMENTAL  
SETUP, RESEARCH DESIGN

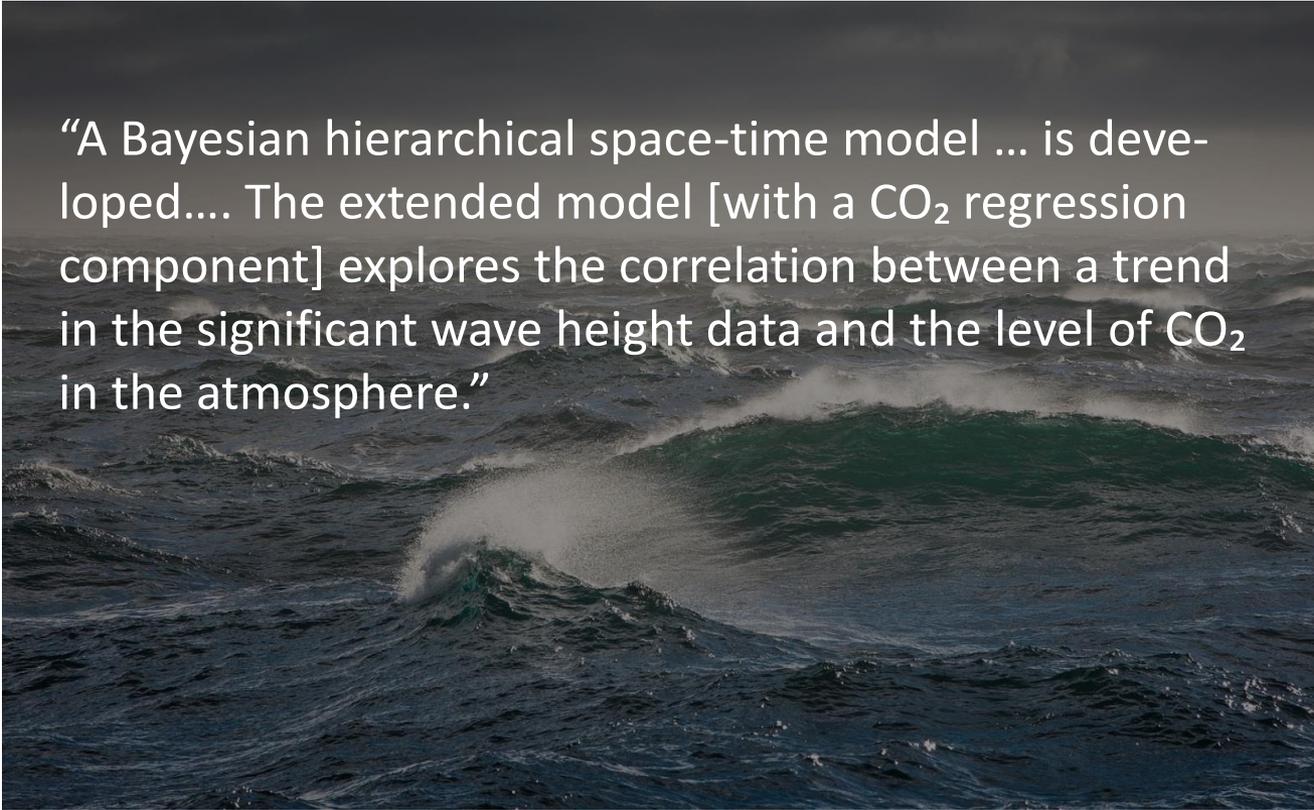
Although you can read for details such as:

- Description of & Justification for Data, Materials Used
- Inclusion Criteria (on what basis data, materials, etc. will be chosen)
- Description of & Justification for Theory, Concepts, Models Used
- Description of Data Collection & Analysis
- Justification of Analytic Method

reading at this level of detail is usually only necessary if you're at an advanced stage of your research.

**How will the main question be answered in our sample science paper?**



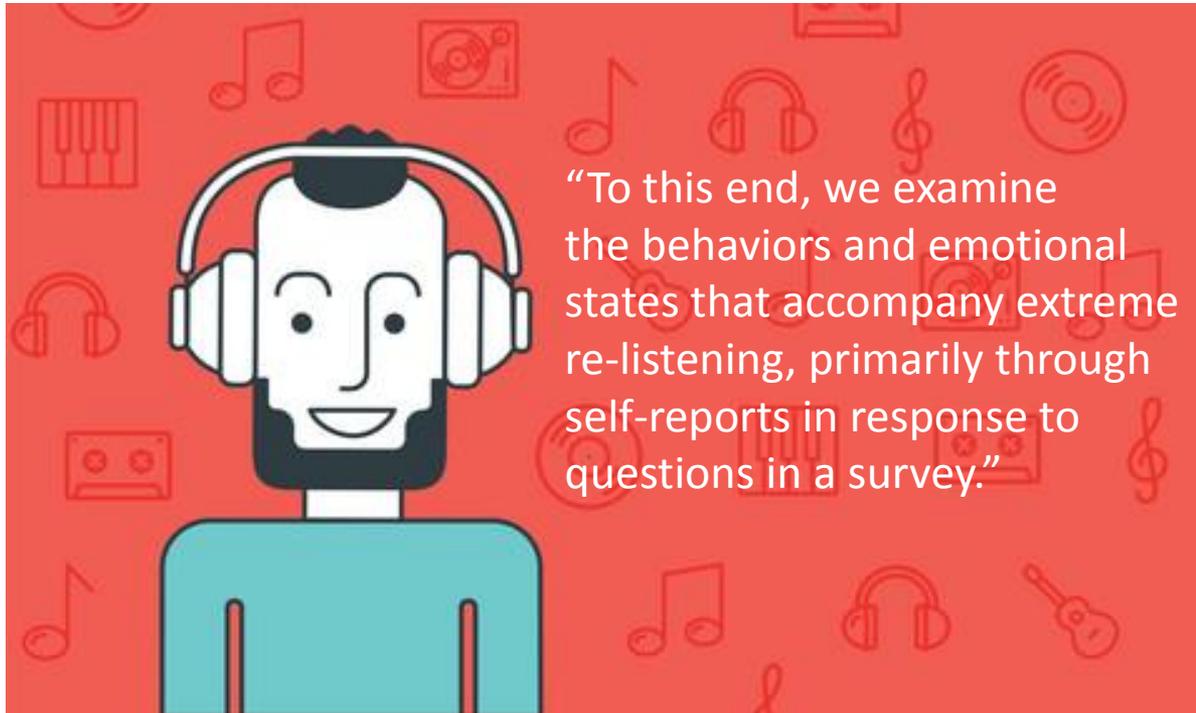


“A Bayesian hierarchical space-time model ... is developed.... The extended model [with a CO<sub>2</sub> regression component] explores the correlation between a trend in the significant wave height data and the level of CO<sub>2</sub> in the atmosphere.”

\*Although the paper contains descriptions and justifications of wave-height data and CO<sub>2</sub> data, etc., this short description of the model is sufficient for our purposes. The main takeaway is that the basic model mentioned in the description of previous research is extended in the current research. The extension could be considered a contribution to the field.

**How will the main question be answered in our sample Psychology/Music paper?**

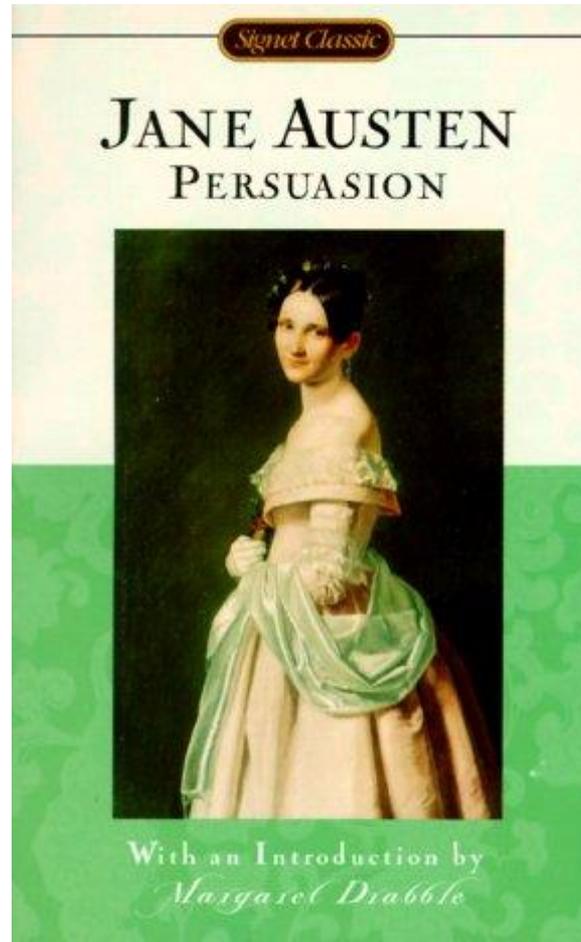




“To this end, we examine the behaviors and emotional states that accompany extreme re-listening, primarily through self-reports in response to questions in a survey.”

Again, there is much more detail in the Methods section, but this description is sufficient for our purposes.

**How will the main question be answered in  
our sample literary essay?**





Feminist narratology (the study of narrative structures and strategies in the context of cultural constructions of gender) provides a method for reclaiming Jane Austen as a feminist novelist by distinguishing her 'story' (in which the independent heroine must, as some critics have it, 'dwindle into a wife') from her 'discourse.'"

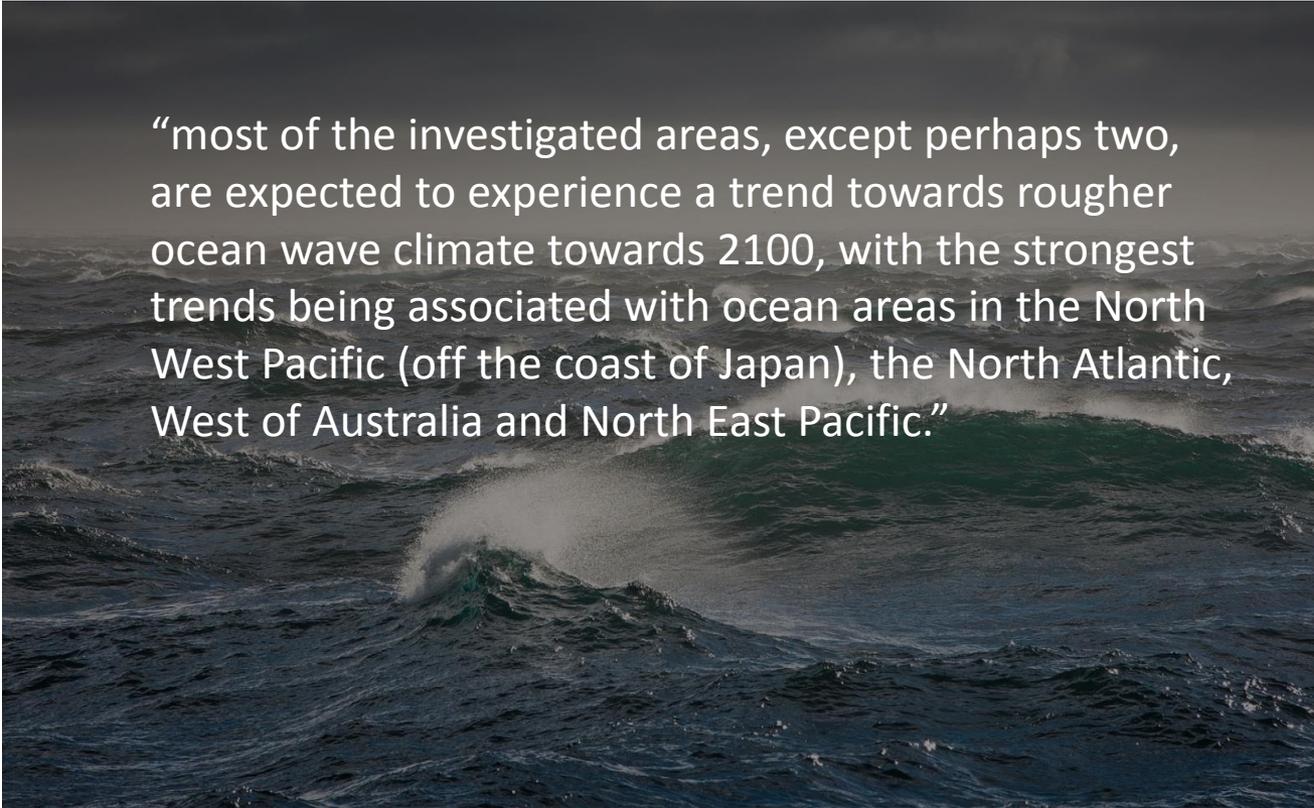


ANSWER TO THE MAIN QUESTION

\*A.K.A. THESIS, RESULTS  
(OF HYPOTHESIS TESTING),  
DISCUSSION, CONCLUSION

What is the answer to the main question in our  
sample Science article?  
(How will climate change impact ocean-wave climate?)





“most of the investigated areas, except perhaps two, are expected to experience a trend towards rougher ocean wave climate towards 2100, with the strongest trends being associated with ocean areas in the North West Pacific (off the coast of Japan), the North Atlantic, West of Australia and North East Pacific.”

# What is the answer to the main question in our Psychology/Music article?

(How can listeners intentionally listen to the same song repeatedly  
without losing interest?)





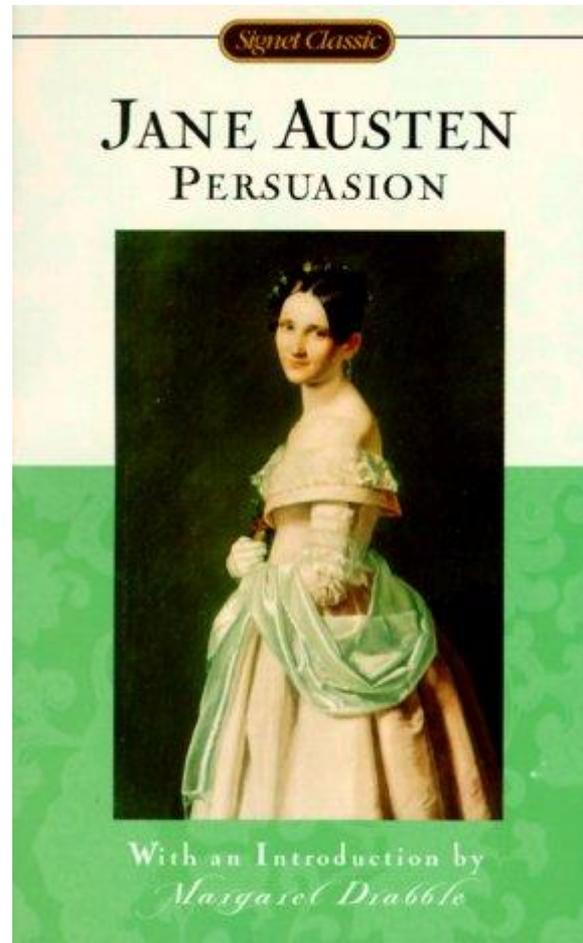
“One possibility is that when listeners feel happy or calm, novelty may not be a priority. They may use these songs to regulate their mood and may want the same experience each time, much as they would want mood altering medication to work the same way each time it is taken.... [In the case of ‘bittersweet’ songs] One possibility is that because their feelings are complicated, listeners are comforted by knowing that at least someone else (the artist) has experienced these contradictory feelings.”



“Niche listening [made possible by ‘the transition in the digital era from a small number of hits (determined by industry “taste makers”) to a vast number of niches (each driven by a small number of individuals)’] may enable listeners to develop the kind of personally meaningful relationships with particular songs that allows their affection for those songs to persist across very large amounts of exposure.”

What is the answer to the main question in our  
sample literary essay?

(Can Jane Austen be reclaimed as a feminist novelist?)





“Anne ... sets a pattern for the **feminist heroine** who no longer needs to fade and die, nor to provide a spectacle of sensibility. The text’s sensations are the heroine’s own; in the end, her **gaze** is represented as entirely integrated with the life of her **body**.”

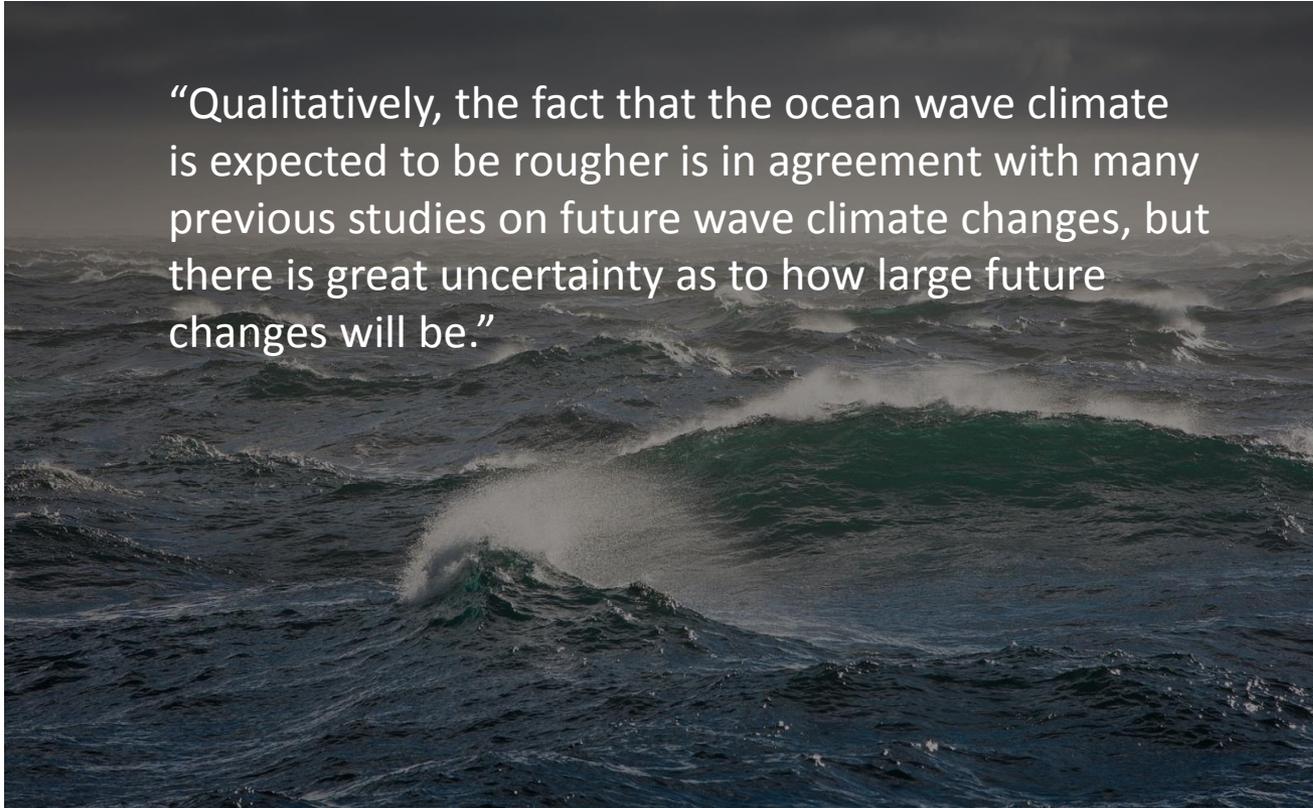
HOW THE ANSWER COMPARES TO  
PREVIOUS ANSWERS



How does the answer in our sample Science article compare to previous answers?



“Qualitatively, the fact that the ocean wave climate is expected to be rougher is in agreement with many previous studies on future wave climate changes, but there is great uncertainty as to how large future changes will be.”



How does the answer in our sample Science article compare to previous answers?





“The analogy between music and medication has been drawn before (e.g., Chanda & Levitin, 2013) and playing music to regulate affect has been well documented (e.g., Baltazar & Saarikallio, 2016....).”

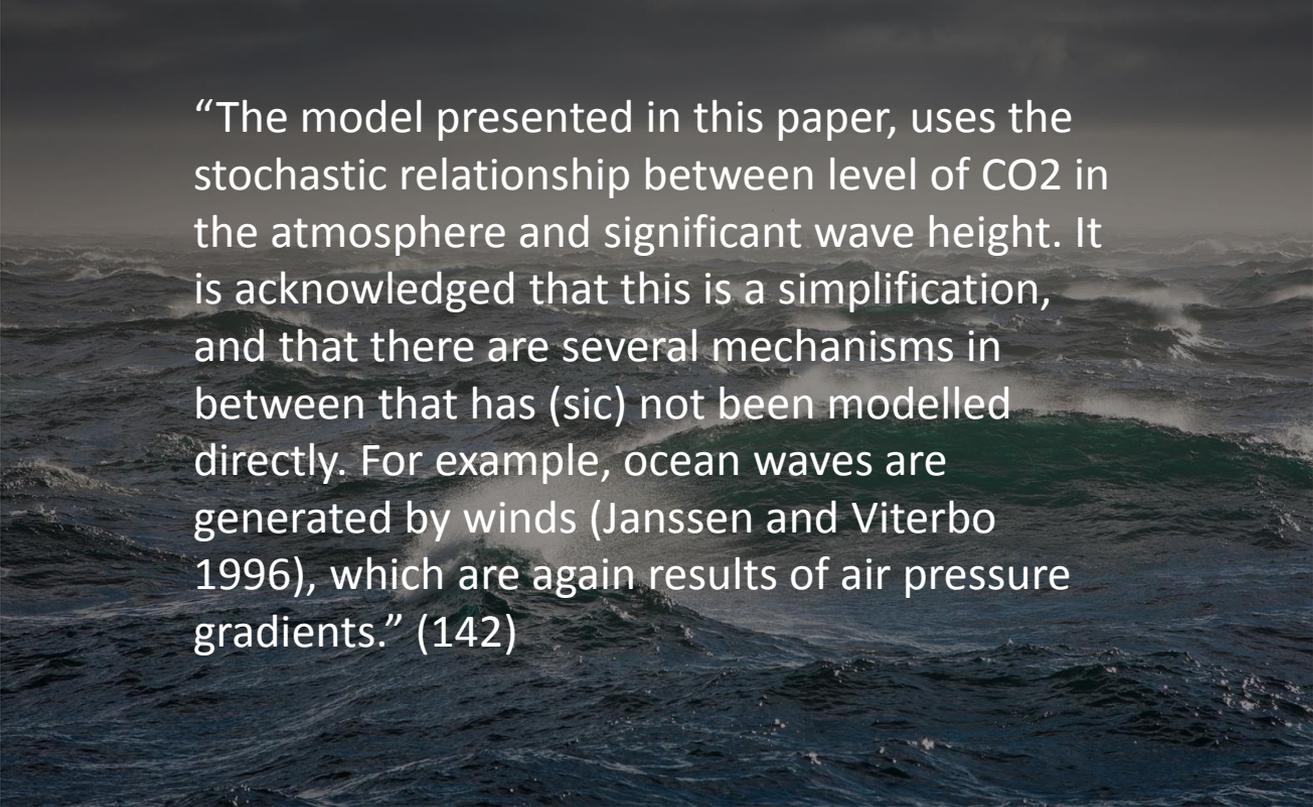


LIMITS ON HOW FAR TO TRUST THE ANSWER

A.K.A. RESEARCH  
LIMITATIONS

How far should we trust the answer in  
our sample Science article?





“The model presented in this paper, uses the stochastic relationship between level of CO<sub>2</sub> in the atmosphere and significant wave height. It is acknowledged that this is a simplification, and that there are several mechanisms in between that has (sic) not been modelled directly. For example, ocean waves are generated by winds (Janssen and Viterbo 1996), which are again results of air pressure gradients.” (142)

How far should we trust the answer in our sample Psychology/Music article?





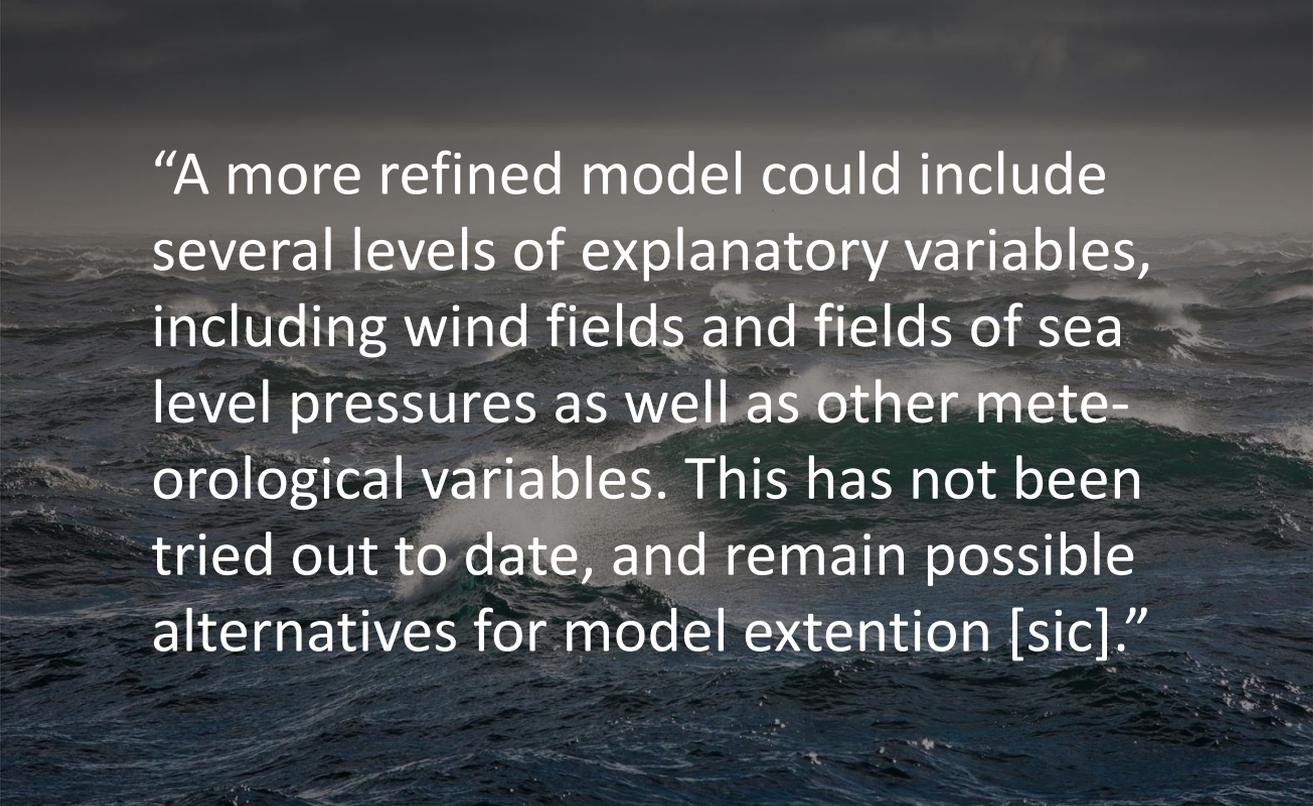
“Because we have only asked listeners about their favorite song, our data do not allow us to compare their listening experience for these songs to that of less beloved songs. We cannot say, for example, to what degree our findings apply to songs they listen to less often.”

SUGGESTIONS FOR FURTHER RESEARCH



What are the suggestions for further research in our sample Science article?





“A more refined model could include several levels of explanatory variables, including wind fields and fields of sea level pressures as well as other meteorological variables. This has not been tried out to date, and remain possible alternatives for model extention [sic].”

What are the suggestions for further research in our sample Psychology/Music article?





“The evolution of listeners’ emotional reaction to songs they love deserves additional research, likely conducted longitudinally rather than through the cross-sectional approach used in the current study.”

Article title	Main Question	What Previous Researchers Have Already Done	Limitations of Previous Research	Contribution of Current Research	How Main Question is Answered
Modelling the Effect of Climate Change on the Wave Climate of the World's Oceans. Vanem, Natvig, et al	How will climate change impact ocean wave climate?	A Bayesian hierarchical space-time model was developed to make projections of ocean wave climate in an area of the North Atlantic Ocean.	All previous results pertain only to that area of the North Atlantic.	Will improve maritime safety by predicting ocean wave climate in other ocean areas.	Using the Bayesian model, but extended with CO2 regression component.
Extreme re-listening: Songs people love... and continue to love. Conrad, Corey, et al.	How can listeners intentionally listen to the same song repeatedly without losing interest?	Margulis suggested re-listening follows a pattern in which pleasure increases with familiarity until it reaches a ceiling and drops. Jakobovits confirmed this with study of hit parade.	This posited relationship between pleasure and familiarity is contradicted by a contemporary case of relistening.	Examines a new re-listening phenomenon not predicted or explained by previous research.	Using self-reports from a survey to document behaviours and feelings accompanying extreme re-listening.
The Look, the Body, and the Heroine: A Feminist-Narratological Reading of "Persuasion." Robyn R. Warhol.	Can Jane Austen be reclaimed as a feminist novelist?	Brown criticized feminist critics for taking Austen's marrying off of her heroines too literally and ahistorically. Suggested a less narrow approach.	Brown's approach is too narrow, restricting interpretation of Austen's heroines to historical figures.	An alternate view of Austen's feminism through analysis of her heroine's narrative discourse rather than her "story".	Feminist narratological approach