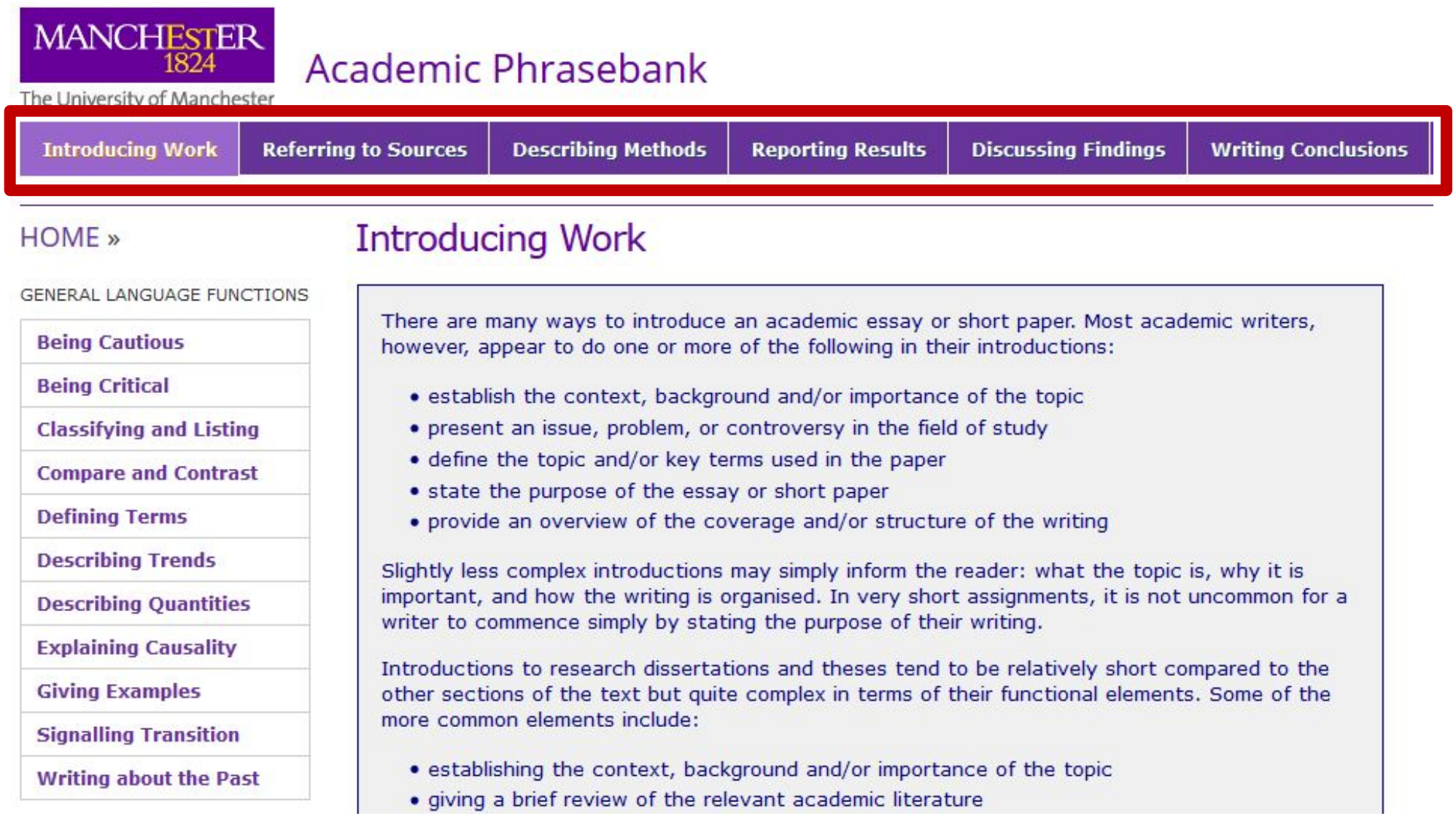
GENERATING TEXTS

How understanding genre and generic language patterns helps us compose

The academic phrasebank identifies common moves



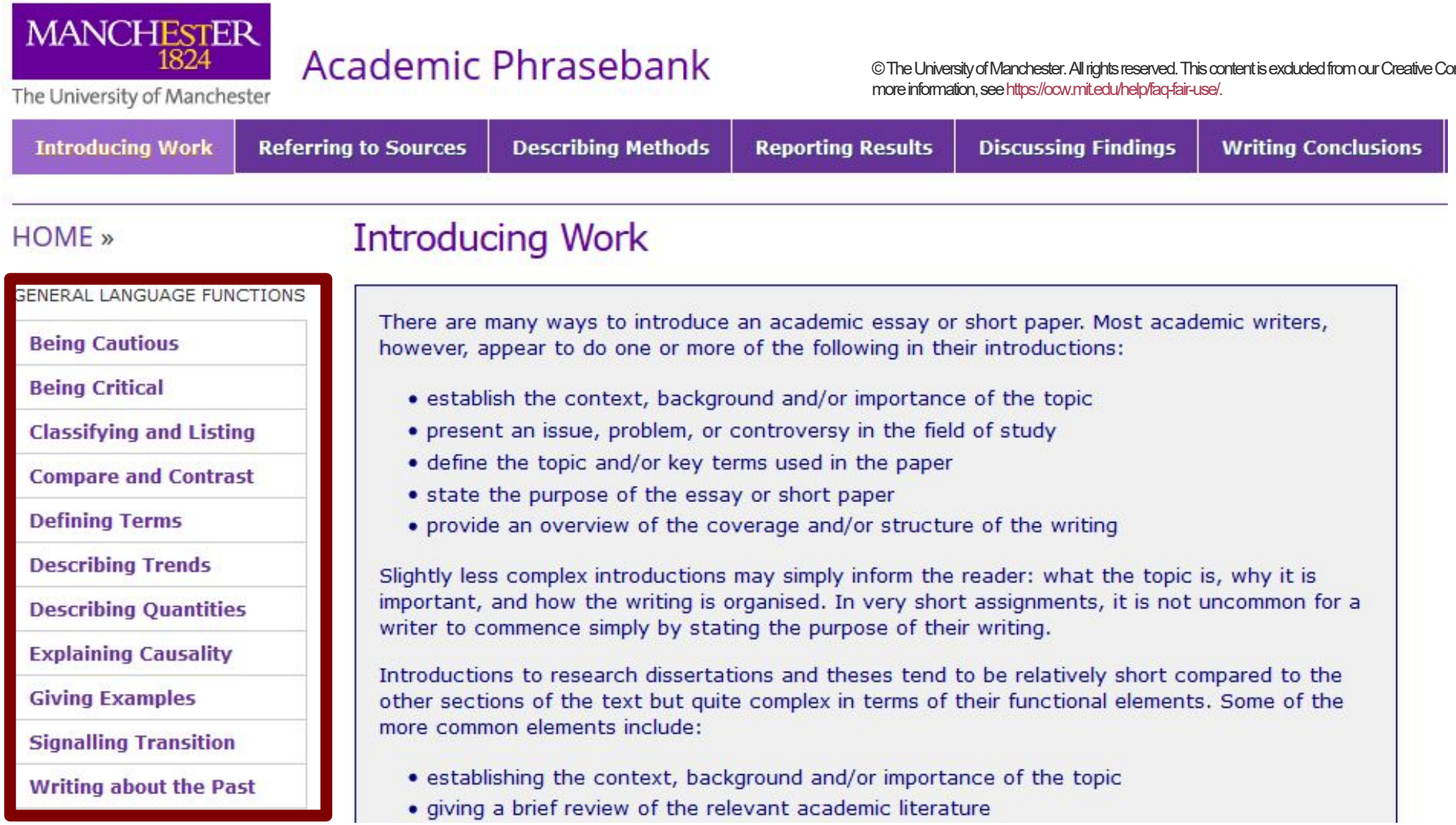
And the related discourse or ‘generic language’

Establishing the importance of the topic as a problem to be addressed - close

X is a major problem in ...
Of particular concern is ...
One of the main obstacles ...
One of the greatest challenges ...
A key issue is the safe disposal of ...
The main disadvantage of X is that ...
X is associated with increased risk of ...
X impacts negatively upon a range of ...
X is a common disorder characterised by ...
It is now well established that X can impair ...
X has led to the decline in the population of ...
X is a growing public health concern worldwide.
The main challenge faced by many researchers is the ...
X is one of the most frequently stated problems with ...
Lack of X has existed as a health problem for many years.
X is a major environmental problem, and the main cause of ...
Xs are one of the most rapidly declining groups of insects in ...
X is the leading cause of death in western-industrialised countries.
Exposure to X has been shown to be related to adverse effects in ...
There is increasing concern that some Xs are being disadvantaged ...
There is an urgent need to address the safety problems caused by ...

However,	X may cause ... X is limited by ... X suffers from ... X is too expensive to be used for ... X has accentuated the problem of ... the performance of X is limited by ... X could be a contributing factor to ... the synthesis of X remains a major challenge. X can be extremely harmful to human beings. research has consistently shown that X lacks ... a major problem with this kind of application is ... the determination of X is technically challenging. current methods of X have proven to be unreliable. these rapid changes are having a serious effect on ... X can be adversely affected under certain conditions. observations have indicated a serious decline in the population of ...

The academic phrasebank also offers language related to stases



What does a literature review or analytical summary introduction do?

***Defines* a research area and claims importance** (Why is this general area significant to study? Possibly—what real-world consequences depend on it?)

***States* the purpose, exigence, or objective of the review** (why do we need a review of the literature? Here, we often identify a lack of consensus, a multitude of new approaches, or some social need for an organized framework)

***Constrains the scope* of the study** (how far back does it look at the research? What choices have been made about what to include or exclude?)

***Generalizes trends* and forecasts the main areas of focus** (may organize by key concepts, methods, closed or open questions, etc.)

Claiming importance may be explicit or implicit

Explicit: “In particular, light as an external stimulus is certainly promising because of its facile localizability toward the control of molecular release in spatial and temporal fashions”

Semiexplicit: “Semiconductor nanocrystals (NCs) show great promise for their use as the active absorbers in photovoltaic devices, thin-film thermoelectrics, and transistors”

Implicit: “Parasites are ubiquitous and can threaten the survival prospects of their hosts dramatically impacting upon their fitness.”

Examples from Michael Carter, “Value Arguments in Science Research Articles”

DRAFT an introductory paragraph for your literature review

***Defines* a research area and claims importance** (Why is this general area significant to study? Possibly—what real-world consequences depend on it?)

***States* the purpose, exigence, or objective of the review** (why do we need a review of the literature? Here, we often identify a lack of consensus, a multitude of new approaches, or some social need for an organized framework)

***Constrains the scope* of the study** (how far back does it look at the research? What choices have been made about what to include or exclude?)

***Generalizes trends* and forecasts the main areas of focus** (may organize by key concepts, methods, closed or open questions, etc.)

For the following activities, you may revise or add to the paragraph you started on Monday, or you may write new sentences/ paragraphs.

Introducing information from sources: where is your focus?

Author highlighted:

“Smith (1999) demonstrated that when the maximum temperature is exceeded …”

Time highlighted:

Thirty years later, Smith (1974) reported three cases of X which …

Investigation highlighted:

“In one well-known recent experiment, limits on X were found to be … (Smith, 2013)”

Topic highlighted:

“X was originally isolated from Y in a soil sample from … (Jones *et al.*, 1952).”

All phrases are from the Academic Phrasebank

Introducing information from sources—distinguishing types of information

Claims: Smith *argues* that . . ./ *claims* to / *asserts* that / *states . . .*

Evidence: Jones *observes* that / *presents* as evidence / *describes* / *offers* as examples. .

Concessions or counterarguments: White *concedes* that/ *admits* that/ *acknowledges*. . .

Implications: This study *seems to show* / *implies* / *suggests that*

Examples from Deepti Dhir, MIT

Write a sentence or two introducing information from a source

Pay attention to focus and to status of the information

e.g., “an increase in maximum wind speed was [shown? demonstrated? suggested?] for the period 1981-2006 (Elsner et al., 2008).

Or,

“using quantile regression, Elsner et al. [identified? revealed?] an upward trend in maximum wind speed from 1981 to 2006”

Metadiscourse serves a number of functions.

Alerts reader to organizational feature

- An overview is made here of **two central questions** that have occupied scientists, sociologists, journalists and philosophers. Firstly, how can we view the Internet in the history of human information systems? …Secondly, how is use of this tool affecting human cognition including at the physiological and functional levels? [“Offloaded and Online”]

Reveals writer’s stance

- The **most optimistic tone** is taken by Heersmink…[“Offloaded and Online”]

Demonstrates audience awareness

- As humans, our **cognitive abilities – brain functions dedicated to analyzing stimuli and responding accordingly** – are enhanced by technology we create…[Ok Google, What’s the Capital of Ireland Again?”]

GENRE ANALYSIS

Genre analysis

- Genre analysis helps do two things:
  - Characterize typical or conventional features of any genre-specific text in an attempt to identify pedagogically utilizable form-function correlations
  - Explain such a characterization in the context of the socio-cultural as well as the cognitive restraints in the relevant area of specialization

In plain English

- Genre analysis:
  - Describes what a genre looks like so that others can understand it and teach it
  - Analyzes where all this came from (socially and logically)

Bhatia's seven steps

1. Place the genre in a situational context
2. Research the literature
3. Refine the situation analysis
4. Select sample texts
5. Analyze the context
6. Analyze language and structure (organization)
7. Verify your information with an expert

Discuss

- "Genre analysis is pattern seeking rather than pattern imposing"

Your genre analysis can focus on:

The audience and rhetorical situation

Rhetorical moves (our slides and the Academic Phrasebank can help identify moves)

Generic language and discipline-specific discourse patterns

The use of sources

The use of visuals

EXPERIMENTAL ARTICLES IN CYCLONE RESEARCH

A genre analysis of introductions, source use, and the role of images

The genre in its rhetorical situation

Most of the examples are from *Nature*, so audience is scientists but not climate scientists

Most have only one or two authors; only one showed cross-institutional collaboration

New methodologies are common, but the focus of the articles is still on the results

The potential destructiveness of cyclones is the primary exigence, but most of the articles assume the reader knows that

General rhetorical moves of research introductions

Establish a Research Territory

Often in Engineering, the ‘territory’ is the general problem to be solved, or technological opportunity. Uses sources to show scope or significance.

Identify a Niche Or Gap

A “niche” may be a promising new approach, an unanswered question, or a technical challenge that hasn’t yet been resolved. Uses sources to show previous approaches and their limitations, and/or promising initial evidence for this approach.

Occupy that Niche or Gap

Show how your project and approach offer new knowledge, a new and more promising way to solve the problem, or take advantage of the opportunity. Uses sources to show the reasoning that supports this approach.

Adapted from Swales, J. and Feak, C. *Academic Writing for Graduate Students*

These introductions perform the standard moves

Establish a Research Territory

"It is a basic question in climate science as to whether the transient eddies that make up the extratropical storm tracks were stronger or weaker in warmer or colder climates (1-8), or if indeed there is an 'optimally stormy' climate state (4, 8). . . ."

Identify a Niche Or Gap

"But the simulated response of the storm tracks to global warming is not purely a shift poleward; it also involves comparable changes in overall intensity. The changes in intensity are less widely appreciated, in part, because they are strongly dependent on the season . . ."

Occupy that Niche or Gap

"To examine this varied response in intensity, I have analyzed the changes in kinetic energy of the extratropical storm tracks in climate model simulations of a global-warming scenario and how they relate to changes in the mean state of the atmosphere."

Example from O'Gorman 2010

SOURCE USE

Citation-sequence is used, but there are exceptions.

- Citations called out as “refs.”

  In addition, an analysis of Caribbean hurricanes documented in Spanish archives indicates that 1766–1780 was one of the most active intervals in the period between 1500 and 1800 AD (ref. 18), when tree-ring-based reconstructions indicate a negative (cooler) phase of the Atlantic Multidecadal Oscillation[19]. [Donnelly and Woodruff, 2007]

- Authors highlighted

  Some of the interdecadal variability is associated with the El Niño/Southern Oscillation, as documented by Camargo and Sobel[19]. [Emanuel, 2005]

- Unpublished data cited

  The ‘factual’ C20C+ simulation consists of a 50-member ensemble of 1° resolution CAM5.1 integrations forced with historical radiative and land-surface boundary conditions and SST, and the ‘counterfactual’ simulation uses radiative forcing from the year 1855, with SST and sea ice modified using perturbations from coupled atmosphere–ocean simulations of the Coupled Model Intercomparison Project Phase 5 (CMIP5; D. A. Stone & P. Pall, submitted manuscript). [Patricola and Wehner, 2018]

Sources generally support functions of the article sections.

- Motivate study in Introduction

  …Atlantic sea surface temperature (SST) … helps explain[1] the recent upswing in frequency and intensity of Atlantic tropical cyclones. However, it has been argued that the data are not reliable enough to make assertions about the relationship between climate change and hurricanes[9,10,11,12,13]… [Elsner et al., 2008]

- Provide origins of models and data in Methods

  We performed hindcast simulations with the Weather Research and Forecasting (WRF) regional climate model[52] version 3.8.1…SST was prescribed from the daily 0.25° [NOAA-OI] dataset[55] for all tropical cyclones…[Patricola & Wehner, 2018]

- Qualify arguments in the Discussion

  The detailed regional changes in the storm tracks have not been considered here, and would likely be difficult to account for in any simple way because of the complex dynamical processes involved (**27**). [O'Gorman, 2010]

Sources in the Results serve various functions.

- Provide motivation for experiment

  The potential intensity of a tropical cyclone is directly related to SST below the cyclone, all else being equal[5,6,17,18]. Because the strongest cyclones at their maxima are, on average, closest to their maximum potential intensities, increases in observed maximum wind speeds should occur with SST at the upper quantiles. To test this…[Elsner et al., 2008]

- Describe elements of methodology

  Figure 1 shows the PDI for the North Atlantic and the September mean tropical sea surface temperature (SST) averaged over one of the prime genesis regions in the North Atlantic[20]. [Emanuel, 2005]

- Compare with literature

  Several previous studies have linked the storm-track behavior to the distribution of the maximum Eady growth rate (**2**–**4**, **12**, **24**). The dry MAPE roughly scales like the integral of the maximum Eady growth rate squared (**8**), so that MAPE provides a means to combine baroclinicity at different levels and latitudes and to include the effects of latent heat release. [O'Gorman, 2010]

Cited sources are sometimes present in other sections.

- Motivate study in Abstract (like Introduction)

  Theory[1] and modelling[2] predict that hurricane intensity should increase with increasing global mean temperatures, but work on the detection of trends in hurricane activity has focused mostly on their frequency[3,4]and shows no trend. [Emanuel, 2005]

- Provide origins of models and data in figure legends (like Methods)

  Changes in precipitation in West Cameroon inferred from alkaliphilous diatoms (thriving in alkaline conditions) from Lake Ossa[23]. [Donnelly and Woodruff, 2007]

IMAGE USE

Figures usually represent results via data plots in order to:

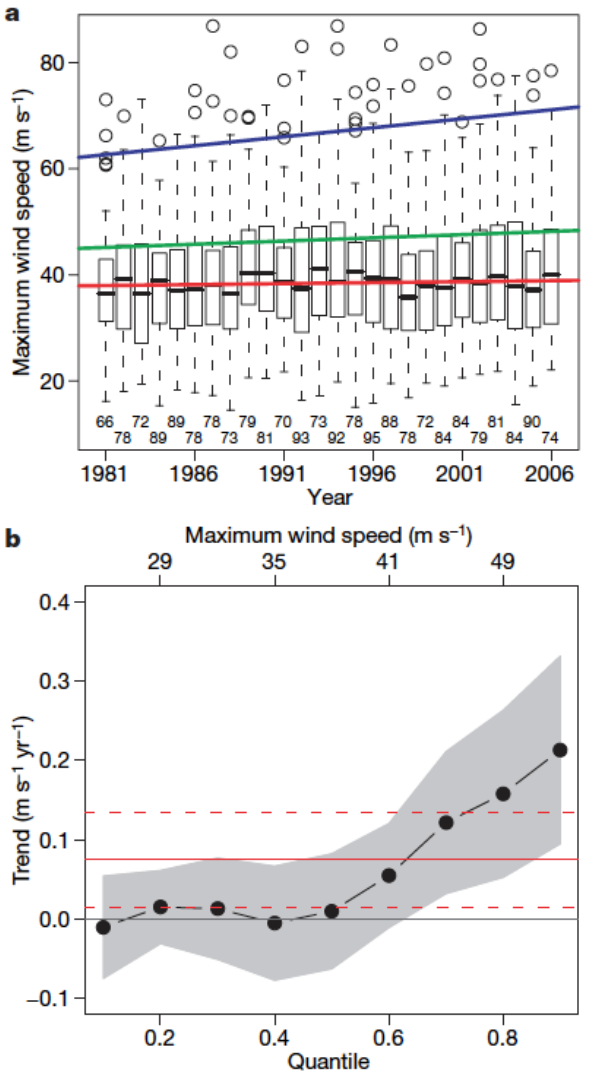
- Demonstrate trends & highlight correlation

  Figure 1. Analysis and model results of satellite-derived tropical cyclone lifetime-maximum wind speeds. [Elsner et al., 2008]

- Compare data sets

  Figure 3 Comparison of the intense hurricane record from LPG with other climate records. [Donnelly and Woodruff, 2007]

  (Figure on next slide)



Most of the articles included composite figures, which visualize different results or type of information in relation to each other

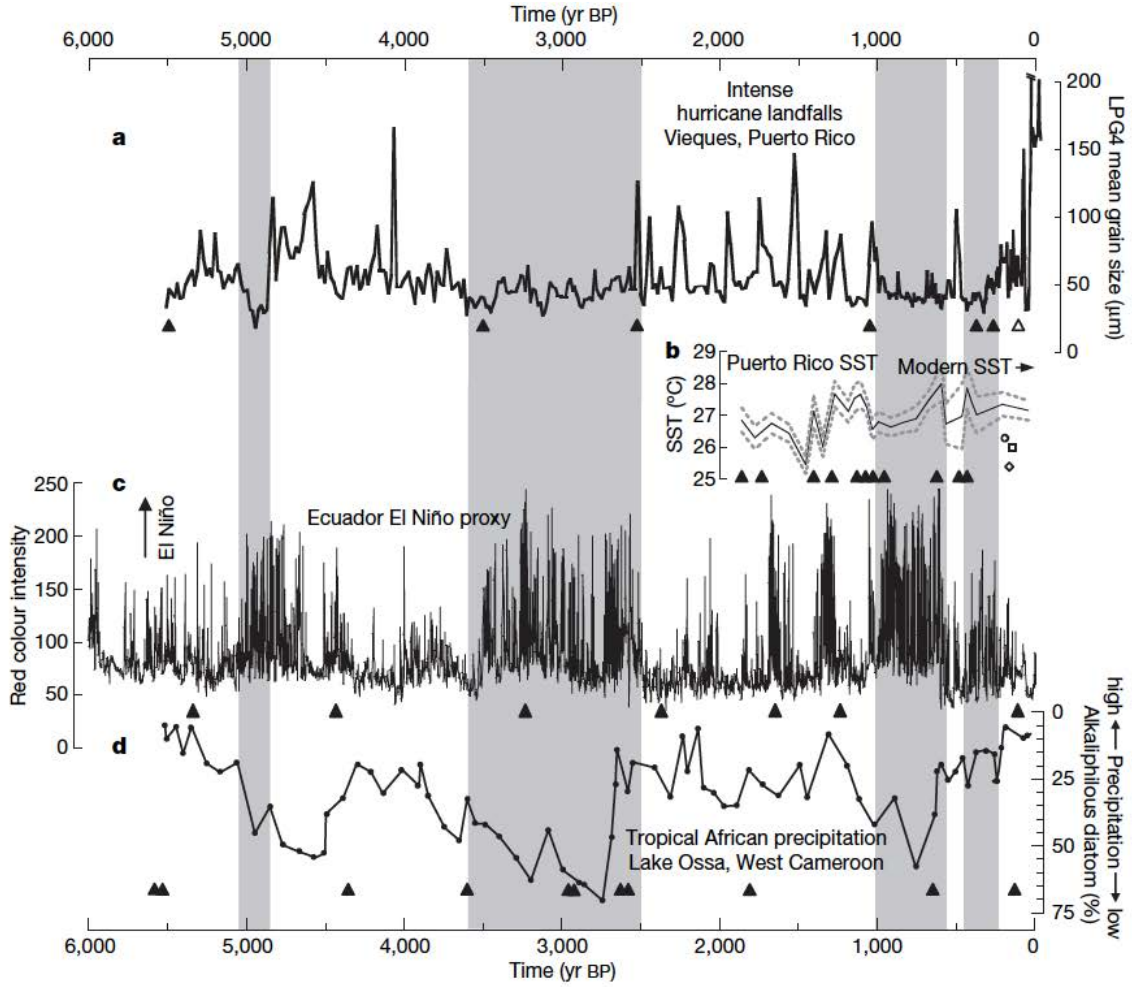


Figure 3 | Comparison of the intense hurricane record from LPG with other climate records. **a**, Mean bulk grain-size record from LPG4. Intervals of relatively few intense-hurricane-induced layers in all cores are noted with shading. **b**, The thin line with the 2σ uncertainty envelope (dashed lines) is a reconstruction of summer SSTs off Puerto Rico[16] (core PRP12) and coral-based reconstruction of mean annual SSTs from La Parguera, Puerto Rico[17], are noted: 26.2 °C for 1700–1705 AD (circle), 25.3 °C for 1780–1785 AD (diamond), and 26.0 °C for 1800–1805 AD (square). The modern mean annual SST is noted with an arrow. **c**, El Niño proxy reconstruction from Laguna Pallcacocha, Ecuador[22]. Peaks in red colour intensity are documented as allochthonous material washed into the lake primarily during strong El Niño events. **d**, Changes in precipitation in West Cameroon inferred from alkaliphilous diatoms (thriving in alkaline conditions) from Lake Ossa[23]. Radiocarbon age control points are noted with black arrows below all panels.

Figures are referenced and discussed explicitly in relation to methodology

- To clarify justification for experiment design and its potential impact on results

  “Conversely, coarse-grained sediments do not always reach the most distal locations (for example, LPG3 (Fig. 2) and LPG2 (Supplementary Fig. 1)) during extreme events, and as a result these areas provide an incomplete record (Fig. 2).” [Donnelly and Woodruff, 2007]

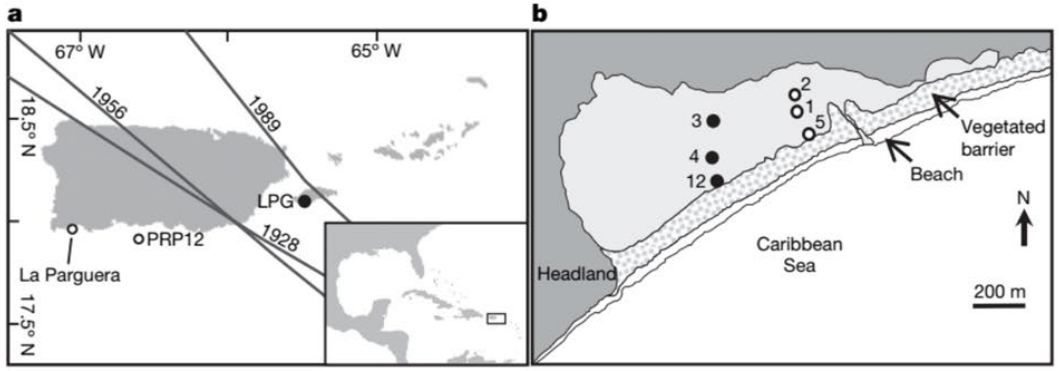


Figure 1 | Site map and core locations. **a**, Map of Puerto Rico with inset map of the tropical Western Atlantic. The location of LPG on the southeastern coast of Vieques is noted with a solid circle. Tracks of the hurricanes mentioned in the text are noted. The location of Puerto Rico (box) is indicated in the inset. Locations of SST reconstructions from La Parguera[17] and PRP 12[16] are noted. **b**, Map of LPG showing core locations (circles). The locations of the cores (LPG12, LPG4 and LPG3) presented in Fig. 2 are noted with solid circles. Cores LPG5, LPG1 and LPG2 included in Supplementary Fig. 1 are also noted.

Figures are referenced and discussed explicitly in relation to Results

- To highlight significance of trends, and to provide evidence for claims

> “Figure 1 shows the PDI for the North Atlantic and the September mean tropical SST...there is an obvious strong relationship between the two time series..., suggesting that tropical SST exerts a strong control on the power dissipation index...But the large upswing in the last decade is unprecedented , and probably reflects the effect of global warming.” [Emanuel, 2005]

> “The changes in EKE indicate a strengthening of the eddies over the Southern Ocean, and general weakening over most of the northern hemisphere (Fig. 1*B*).” [O’Gorman, 2010]

Captions have a number of moves.

Fig. 1. Storm tracking intensity in JJA climate model simulations: (A) Transient EKE (10^5 J m^{-2}) averaged from 1981 to 2000 in the multimodal mean (with slightly different time periods for some models; *Methods*). (B) Changes in multimodal mean EKE under global warming, calculated as the difference between time averages over 1981-2000 and 2081-2100. (C) Fractional changes in EKE and nonconvective MAPE under global warming for each model. Values are given for the northern hemisphere (solid symbols) and southern hemisphere (open symbols), but excluding the deep tropics (below 20° latitude in each hemisphere). The solid line indicates the one-to-one relationship corresponding to linear scaling of EKE and MAPE. [O'Gorman, 2010]

Title summarizes objectively

Describes how data were obtained

Explains what elements represent

In sum, rhetorical situation informs genre features.

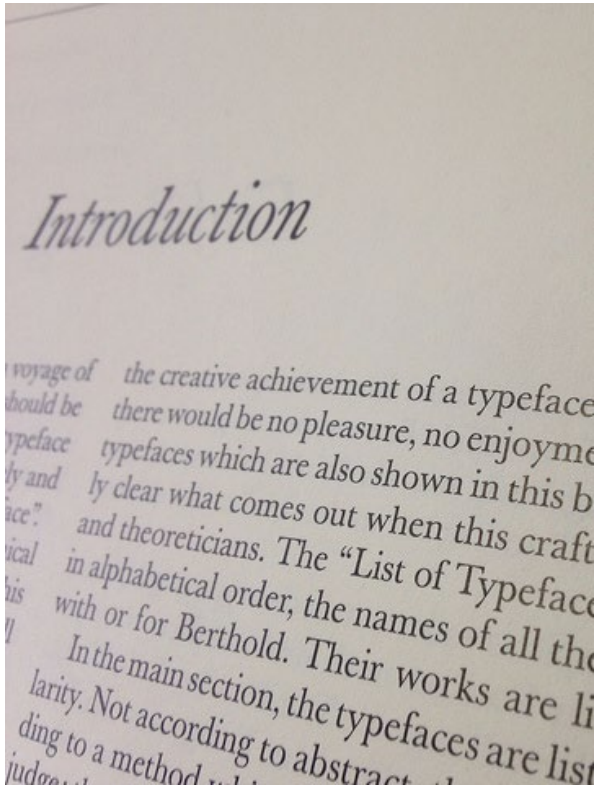
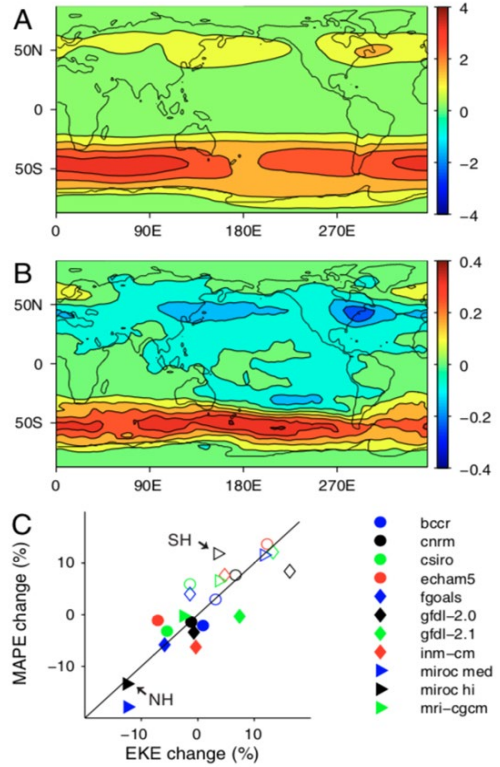


Image by Stewf on flickr. License CC BY-NC-SA.

Introduction

Source use



Illustrations

21W.794 Graduate Technical Writing Workshop

IAP 2019