Atelier de communication écrite

Pierre Legagneux, 28 Aout 2015

http://qcbs.ca/wiki/atelier_comm

Oikos 116: 723–727, 2007
doi: 10.1111/j.2007.0030-1299.15674.x,
Copyright © Oikos 2007, ISSN 0030-1299
Subject Editor: Per Lundberg, Accepted 25 January 2007

How to write consistently boring scientific literature

Kaj Sand-Jensen

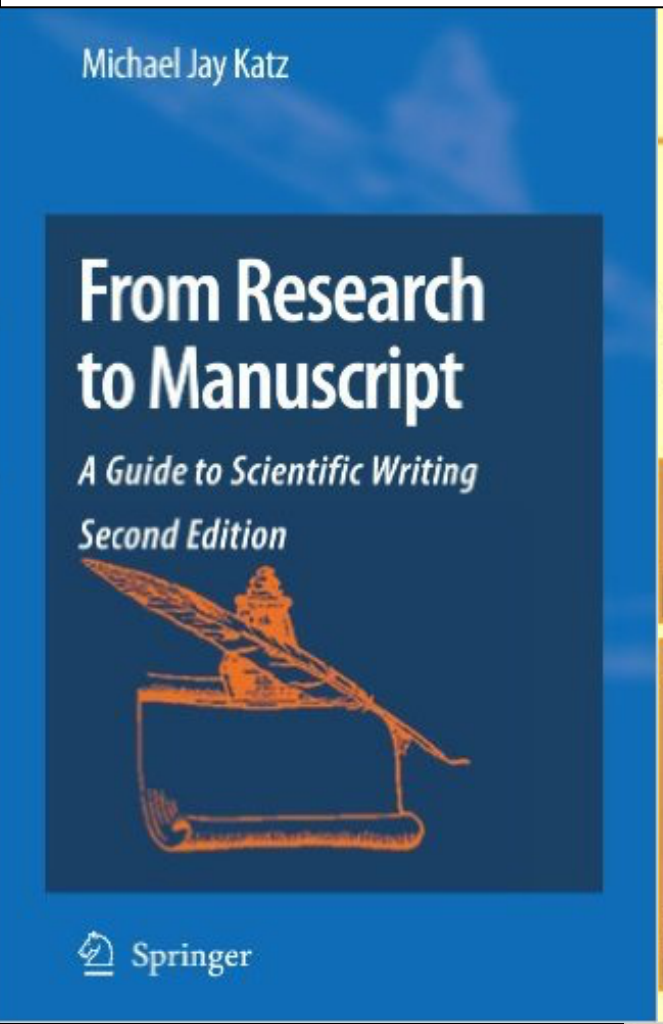
YALE JOURNAL OF BIOLOGY AND MEDICINE 84 (2011), pp.181-190.

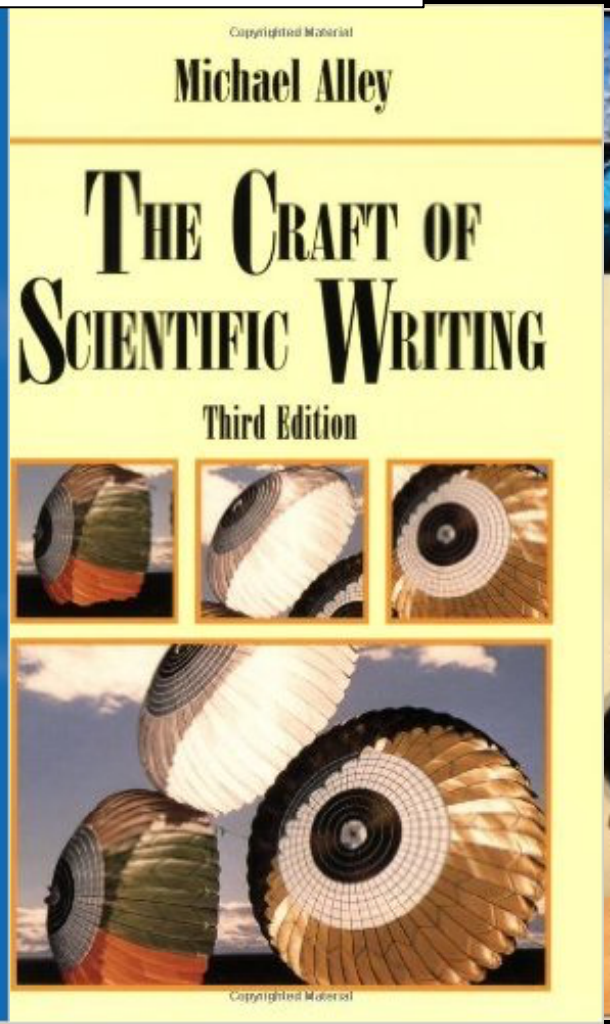
FOCUS: EDUCATION — CAREER ADVICE

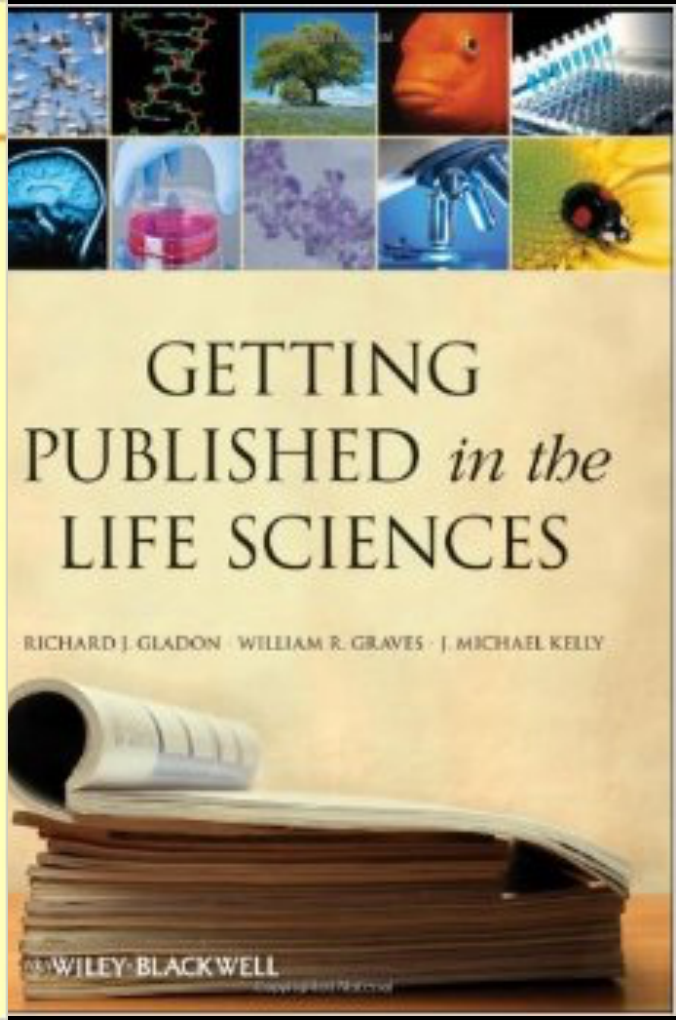
How to Write Your First Research Paper

Elena D. Kallestinova

https://www.youtube.com/watch?v=0oAFVHb21HM







Cette formation ne vous apprendra pas à

- Lire
- Faire des recherches bibliographiques
- Écrire correctement en anglais
- Comment organiser votre temps de travail
- Comment ne pas procrastiner
- Devenir concis

Outline of this formation

- Me, myself and I
- What is Science and why publishing is important
- Recipes to build your first outline: what is essential ?
- Writing an entire manuscript
- Select the most relevant journal
- How to submit my paper: follow the guidelines !
- How to make my paper interesting for a broader audience ?
- Open questions / work on your drafts

Me, myself and I

- QCBS research professional
- Post-doc for the « Chaire de recherche du Canada en biodiversité nordique »
- Co-authored 37 publications
- Co-supervised 7 undergrad; 6 MscC; 4 phD
- External reviewer for 20 journals (> 30 reviews)
- Top referee 2013 in Biology Letters

Research interests

Citizen science in Common birds

Citizen science in Common birds

Carry-over effects in waterfowl

Citizen science in Common birds

Carry-over effects in waterfowl

Terrestrial arctic ecosystem

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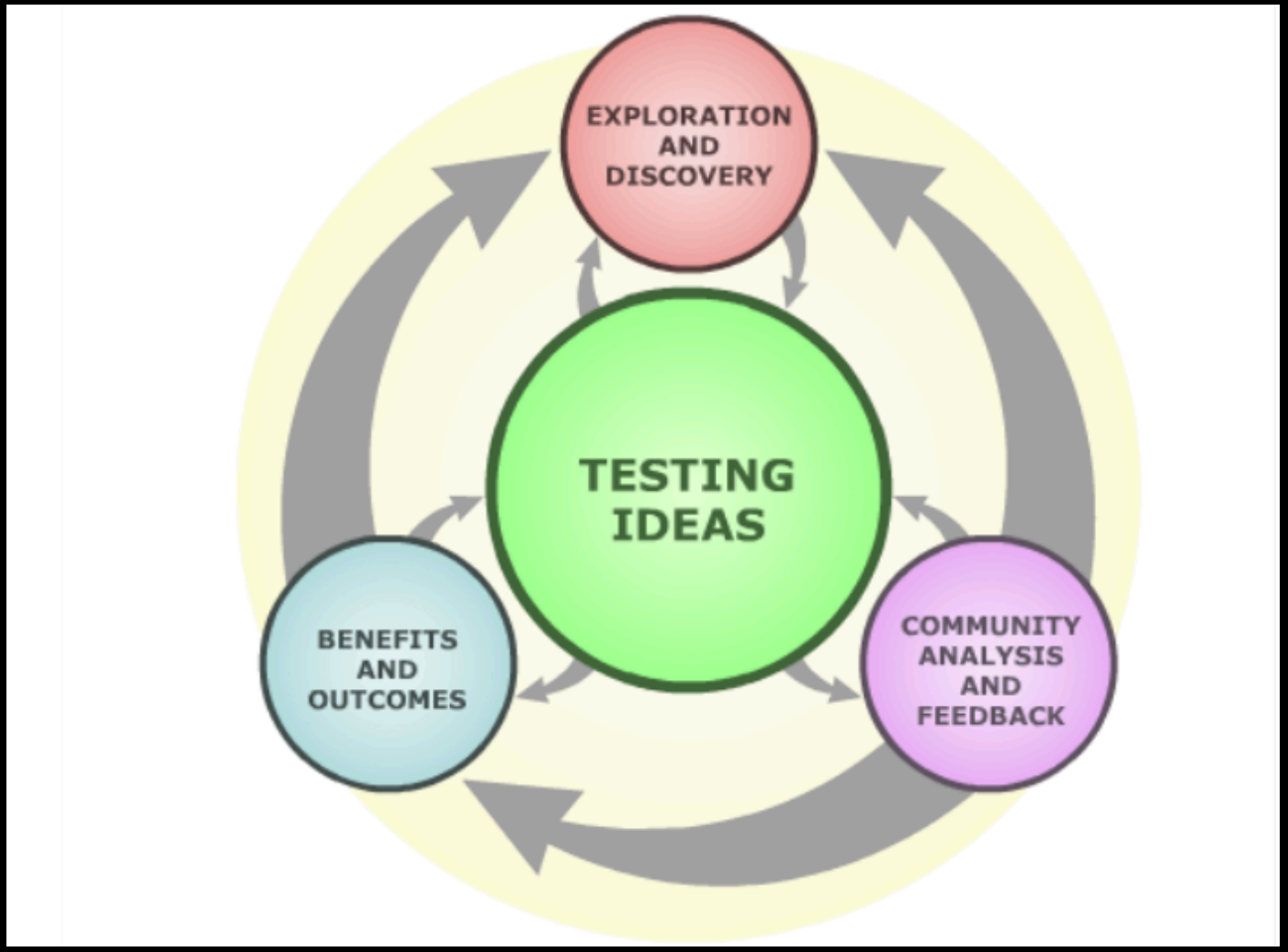
What is the process of Science?

The process of Science is opposite of a cookbook. In contrast to the linear steps of the simplified scientific method, this process is non-linear



http://undsci.berkeley.edu/article/0_0_0/howscienceworks_02

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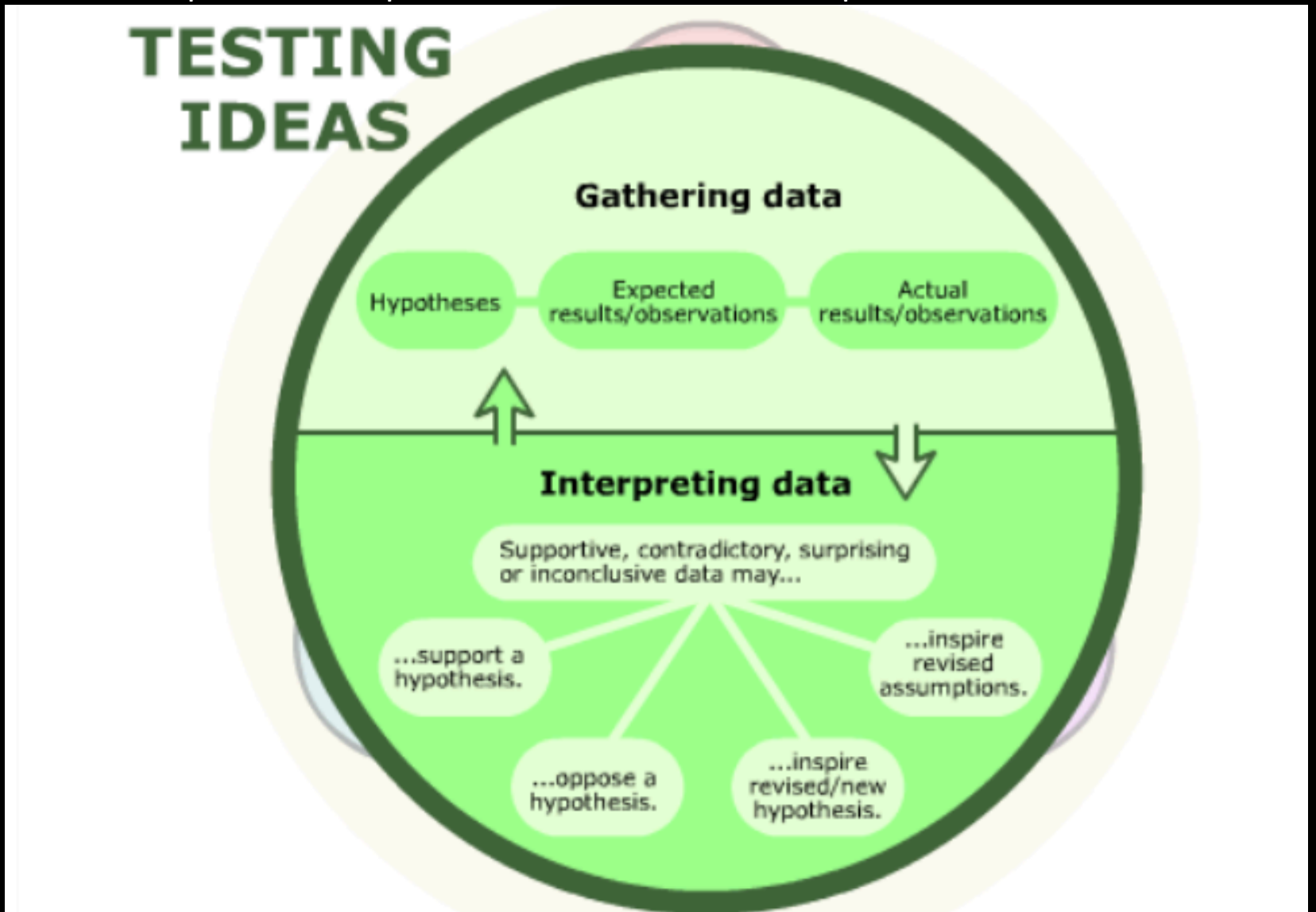

The importance of and need for publishing

- If you don't publish it, you haven't done it
- The credit goes to the guy who publishes it
- People who don't submit their work for peer review do crappy work
- Writting things down in a form for others to read makes you understand them better
- Writting a paper is the only way you will know what you did 6 months from now

The importance of and need for publishing

- Disseminate knowledge and new discoveries to the scientific community
- Publication of research results permits scientists to study those results and use them to advance science and ultimately benefit society via practical utilization of new discoveries
- Scientific papers (peer-review journals) guarantee that information is robust, avaliable and not lost (compared to the gray litterature)
- Get funds for future research, get promotions
- The quality (measured through IF) will affect the life of your lab and your research unit.

Outline of this formation

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- What is Science and why publishing is important
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Different types of publications

Peer-reviewed scientific journal

- Reviews
- Methodological papers
- Opinion, comments
- Book reviews
- Original scientific papers

Also: non-peer reviewed journals, scientific reports, conference proceedings, blogs etc.

Timelapse writting of a research paper

https://www.youtube.com/watch?v=hNENiG7LAnc

Research paper structure

Experimental process	Section of the paper	Ideal
What did I do in a nutshell ?	Abstract	6
What is the problem	Introduction	1
What is your expectations?	Hypothesis & predictions or Aims	2
How did I solve the problem ?	Material & methods	3
What did I find out ?	Results	4
What does it mean ?	Discussion	5
Who helped me out ?	Acknowledgements	Last
Whose work did I refer to ?	Literature cited	Always

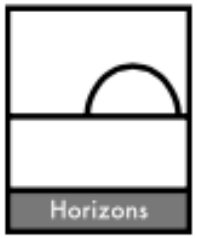
Research paper structure

Experimental process	Section of the paper	Ideal	Actual
What did I do in a nutshell ?	Abstract	6	6
What is the problem	Introduction	1	4
What is your expectations?	Hypothesis & predictions or Aims	2	1
How did I solve the problem ?	Material & methods	3	3
What did I find out ?	Results	4	2
What does it mean ?	Discussion	5	5
Who helped me out ?	Acknowledgements	Last	Last or when tired
Whose work did I refer to ?	Literature cited	Always	Always

English is Cuh-Ray-zee

Pete Seeger

But scientific papers are ‘usually’ boring



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Subject Editor: Per Lundberg, Accepted 25 January 2007

How to write consistently boring scientific literature

Kaj Sand-Jensen

How to write consistently boring scientific literature

Kaj Sand-Jensen, Oikos 2007

1. Avoid Focus
2. Avoid originality and personality
3. Make the article really really long
4. Do not indicate any potential implications
5. Leave out illustrations (...too much effort to draw a sensible drawing)
6. Omit necessary steps of reasoning
7. Use abbreviations and technical terms that only specialists in the field can understand
8. Make it sound too serious with no significant discussion
9. Focus only on statistics
10. Support every statement with a reference

What to avoid

- Data without scientific discussion, applications of data, or reviews of the literature are not sufficient.
- Use of the phrase “Novel” or “First-time” in the title or abstract.
- Use of the word « important ». Give the effect size and % to describe your work instead.

Get started

https://www.youtube.com/watch?v=0oAFVHb21HM

1. **Read**

   Pick up the style and tone of your litterature

   Keep an updated reference list, always

2. **What story are you telling**

   Scientific papers use a very formal, stilted writing style that is very different than fiction or « fun » literature.

   Write out a one page story of what you are tying to communicate.

   Personally, I skip this step…

Recipies to build Outline #1

1. What is the topic of my paper?

2. Why is this topic important?

3. How could I formulate my hypothesis?

4. What are my results (include visuals)?

5. What is my major finding?

Your MsC or PhD proposal will help you here !

You need to work hard on those 2 points

Easy one !

Outline proposed by Kallestinova 2011

Introduction

1. Why is your research important?
2. What is known about the topic?
3. What are your hypotheses?
4. What are your objectives?

Materials and Methods

1. What materials did you use?
2. Who were the subjects of your study?
3. What was the design of your research?
4. What procedure did you follow?

Results

1. What are your most significant results?
2. What are your supporting results?

Discussion and Conclusions

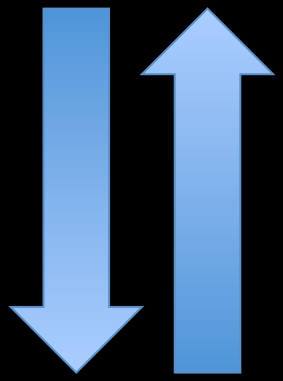
1. What are the studies major findings?
2. What is the significance/implication of the results?

Recipies to build Outline #1

3. How could I formulate my hypothesis?

4. What are my results (include visuals)?

Formulate Hypothesis / aims



Analysis/Valid/simplify/double check your results

Figures

- Figures make or break a paper
- If you read a paper quickly, the most important thing is the figures (plus title & abstract !)
- Figures should speak by themselves – they do not need to be completely explained in the text.
- If you can't make a figure, your data or understanding is not complete enough
- You should be able to follow your story just by looking at the figures
- Don't make a figure if you can borrow it from someone (with permission) for example a nice map of the study site

Polar Biol (2003) 27: 56–58
DOI 10.1007/s00300-003-0563-3

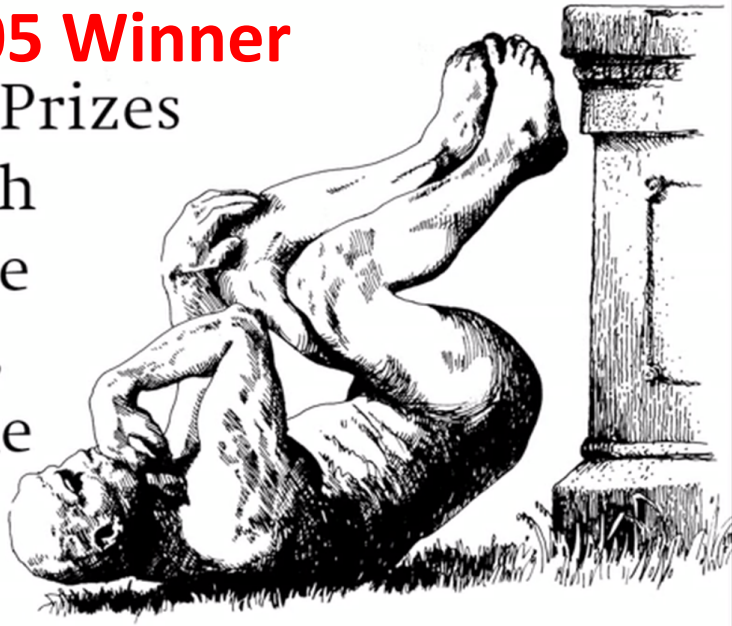
SHORT NOTE

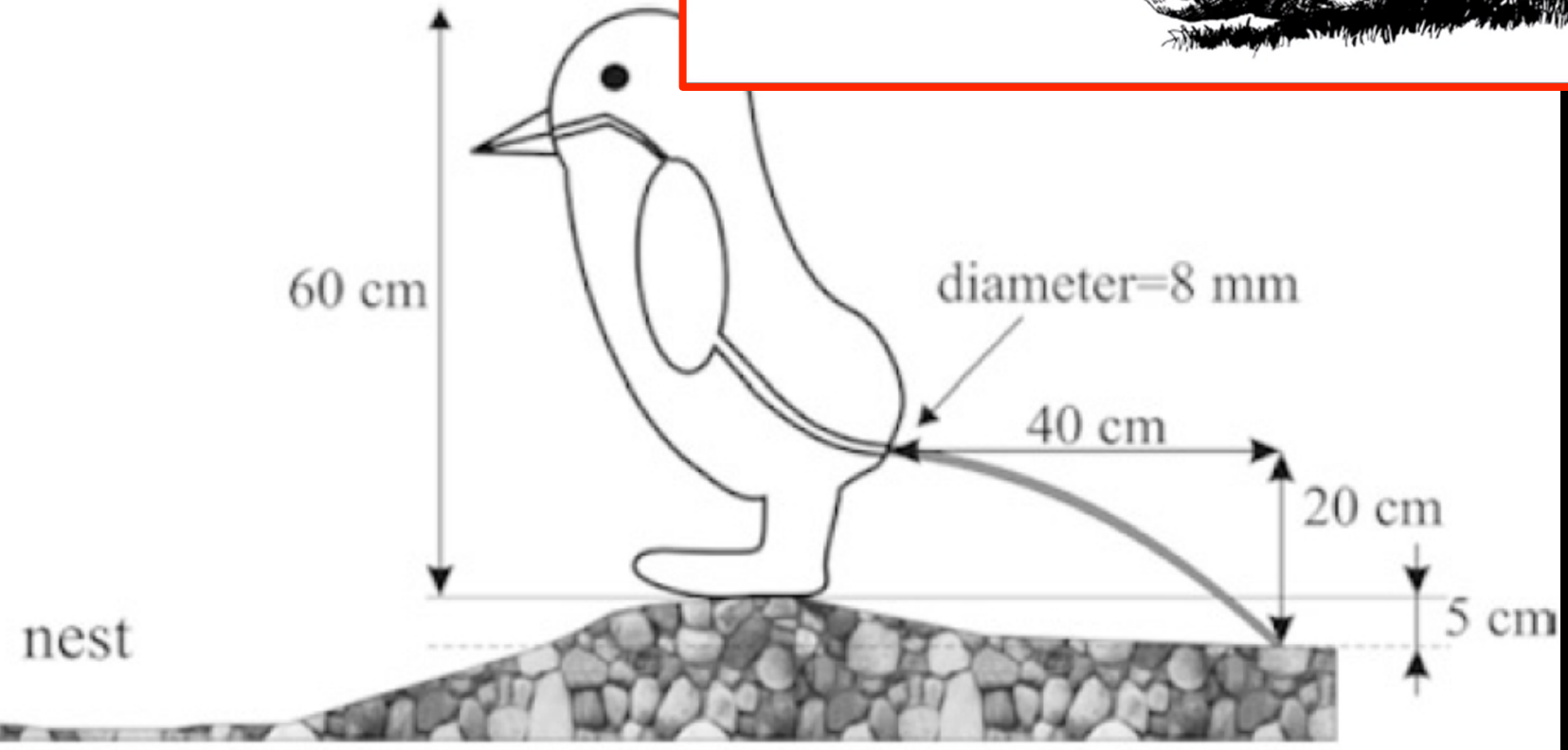
Victor Benno Meyer-Rochow · Jozsef Gal

Pressures produced when … defaecation

2005 Winner

The **Ig® Nobel** Prizes honor research that first make people **laugh**, and then make them **think**





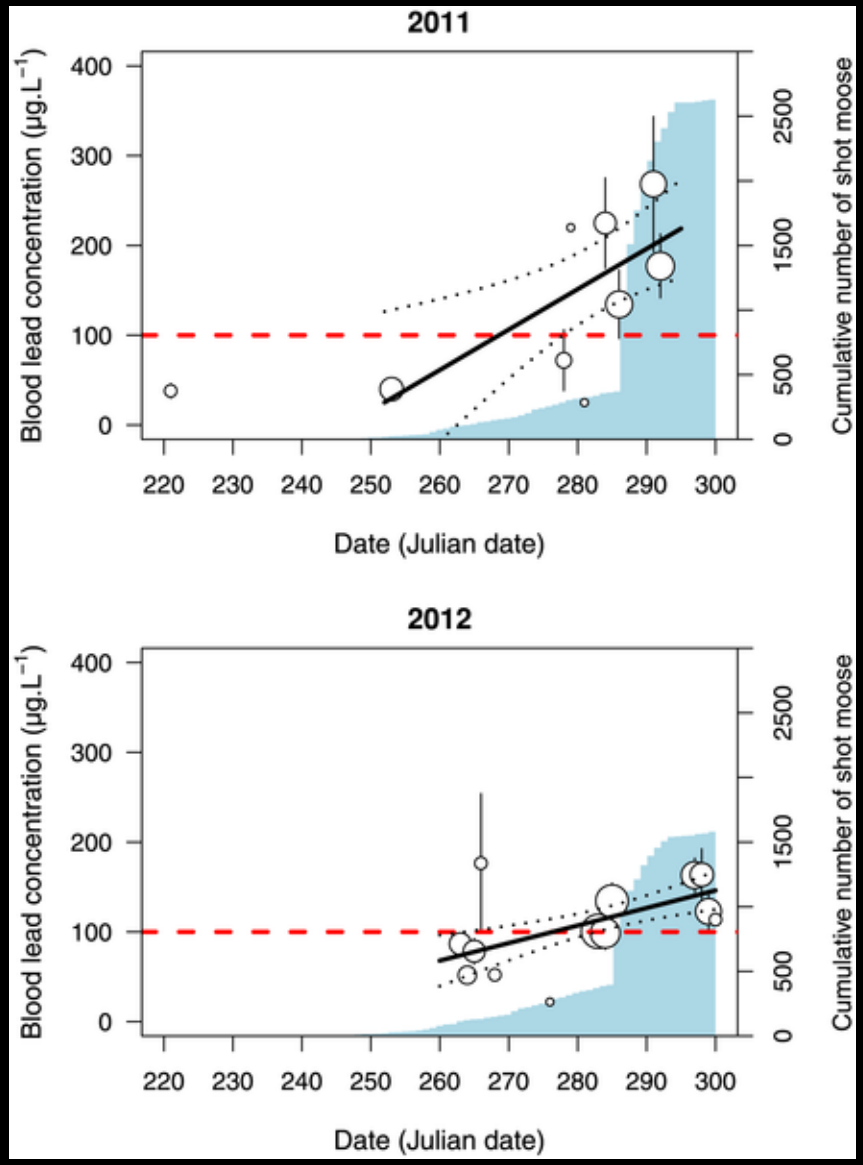


Figure 1. Relationship between blood lead concentrations in common ravens and date in 2011 and 2012.

Dot size is proportional to the log of the sample size. Error bars represents SE. Dotted lines represent the 95%CI. The light blue barplot illustrates the cumulative number of rifle-shot moose in the hunting area selected for the study. Ravens with no sign of clinical contamination were reported to have lead concentration <100 $\mu g.L^{-1}$ (horizontal red dashed line) according to [28].

Legagneux P, Suffice P, Messier JS, Lelievre F, Tremblay JA, et al. (2014) High Risk of Lead Contamination for Scavengers in an Area with High Moose Hunting Success. PLoS ONE 9(11): e111546. doi:10.1371/journal.pone.0111546
http://127.0.0.1:8081/plosone/article?id=info:doi/10.1371/journal.pone.0111546

The Notch pathway controls fibrotic and regenerative repair in the adult heart

Mohamed Nemir[1], Mélanie Metrich[1,†], Isabelle Plaisance[1,†], Mario Lepore[1], Steeve Cruchet[1], Corinne Berthonneche[2], Alexandre Sarre[2], Freddy Radtke[3], and Thierry Pedrazzini[1,2,*]

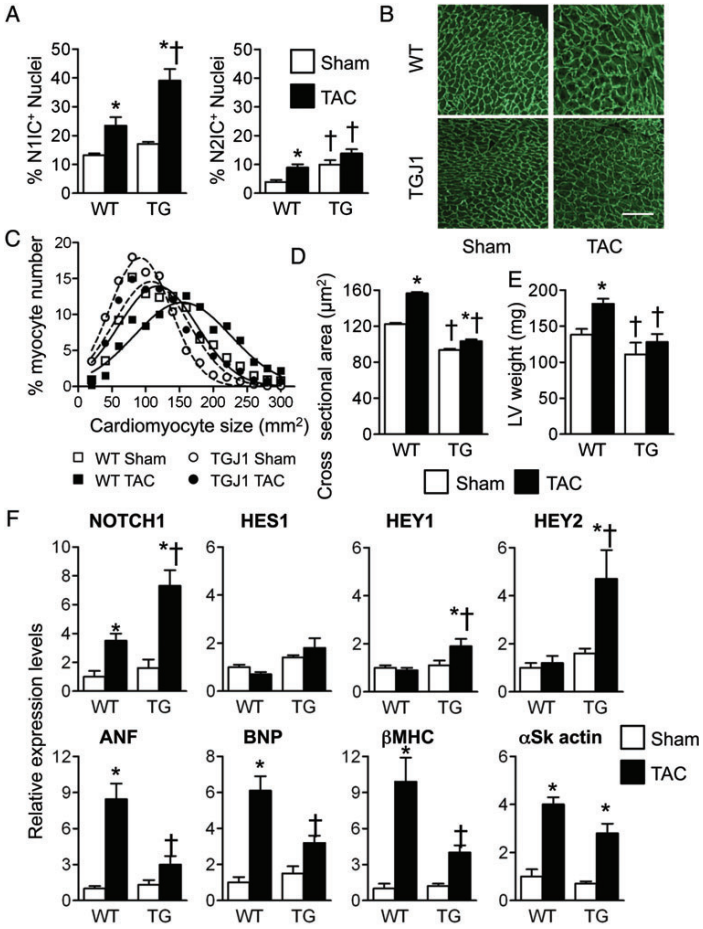


Figure 3 The cardiac hypertrophic response to pressure overload. Wild-type and TGJ1 mice were subjected to transaortic constriction and analysed after 1 week. (*A*) The percentage of cardiac cells demonstrating Notch1 (left) or Notch2 (right) activation after transaortic constriction. (*B*) Heart sections stained with antibodies against laminin (green). (*C*) Cardiomyocyte size distribution. (*D*) Cardiomyocyte cross-sectional area (mean ± SEM). (*E*) Post-mortem left ventricular weight in wild-type and TGJ1 mice. (*F*) Notch target gene expression using qRT–PCR (upper panel) and cardiac hypertrophy marker expression (lower panel) in wild-type and TGJ1 hearts. Data are expressed as fold change relative to wild-type Sham. Data in (*A*), (*D*), (*E*), and (*F*) are presented as mean ± SEM (*$P < 0.05$ in transaortic constriction vs. Sham; †$P < 0.05$ in TGJ1 vs. wild-type; six mice per group). In (*C*) and (*D*), values are obtained from at least 700 cells per group. Scale bar in (*B*) 50 μm.

Figure 3 The cardiac hypertrophic response to pressure overload. Wild-type and TGJ1 mice were subjected to transaortic constriction and analysed after 1 week. (A) The percentage of cardiac cells demonstrating Notch1 (left) or Notch2 (right) activation after transaortic constric- tion. (B) Heart sections stained with antibodies against laminin (green). (C) Cardiomyocyte size distribution. (D) Cardiomyocyte cross-sectional area (mean +SEM). (E) Post-mortem left ventricular weight in wild-type and TGJ1 mice. (F) Notch target gene expression using qRT–PCR (upper panel) and cardiac hypertrophy marker expression (lower panel) in wild-type and TGJ1 hearts. Data are expressed as fold change rela- tive to wild-type Sham. Data in (A), (D), (E), and (F) are presented as mean + SEM (*P , 0.05 in transaortic constriction vs. Sham; †P , 0.05 in TGJ1 vs. wild-type; six mice per group). In (C) and (D), values are obtained from at least 700 cells per group. Scale bar in (B) 50 mm.

Figures

- You will redo your figures many times, so ideally, so keep the raw data used to make the figure in the same folder as the figure
- In word, a table with invisible or white lines is a great way to put a figure into the text … but remember that you will have to produce your figure as a separate file when your paper will be accepted for publication.

- **Tip:** try to use R and perform your figures based on an R script that generates the figure directly from the raw data

Nicolas Casajus & Kevin Cazelles have a course on this topic, please visit this link http://nicolascasajus.fr/doc/graphonr.pdf

Figures

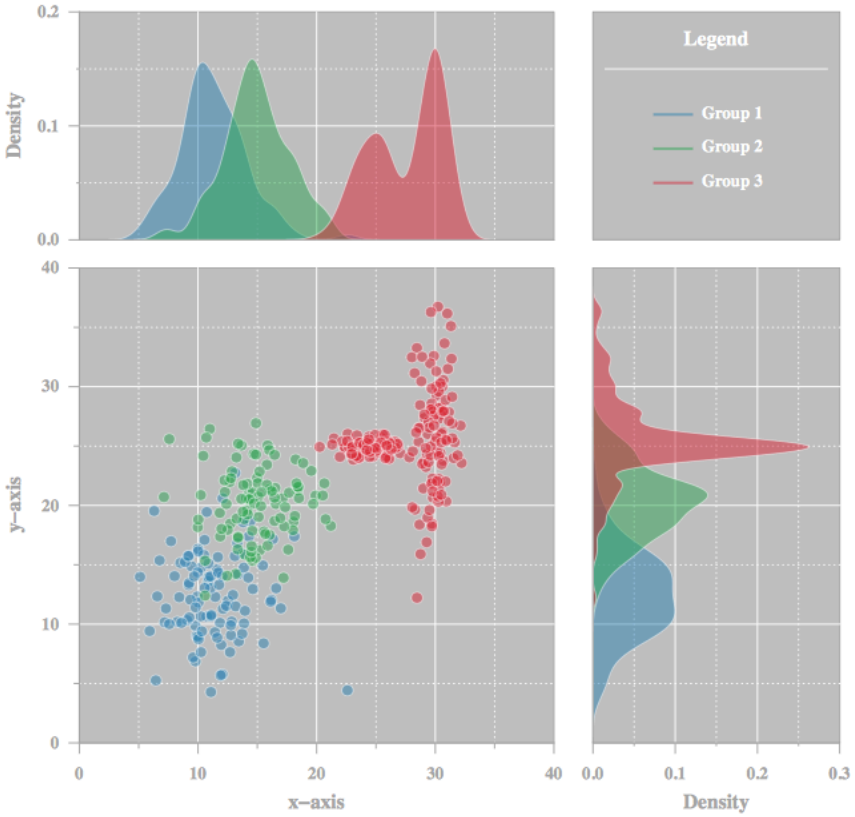
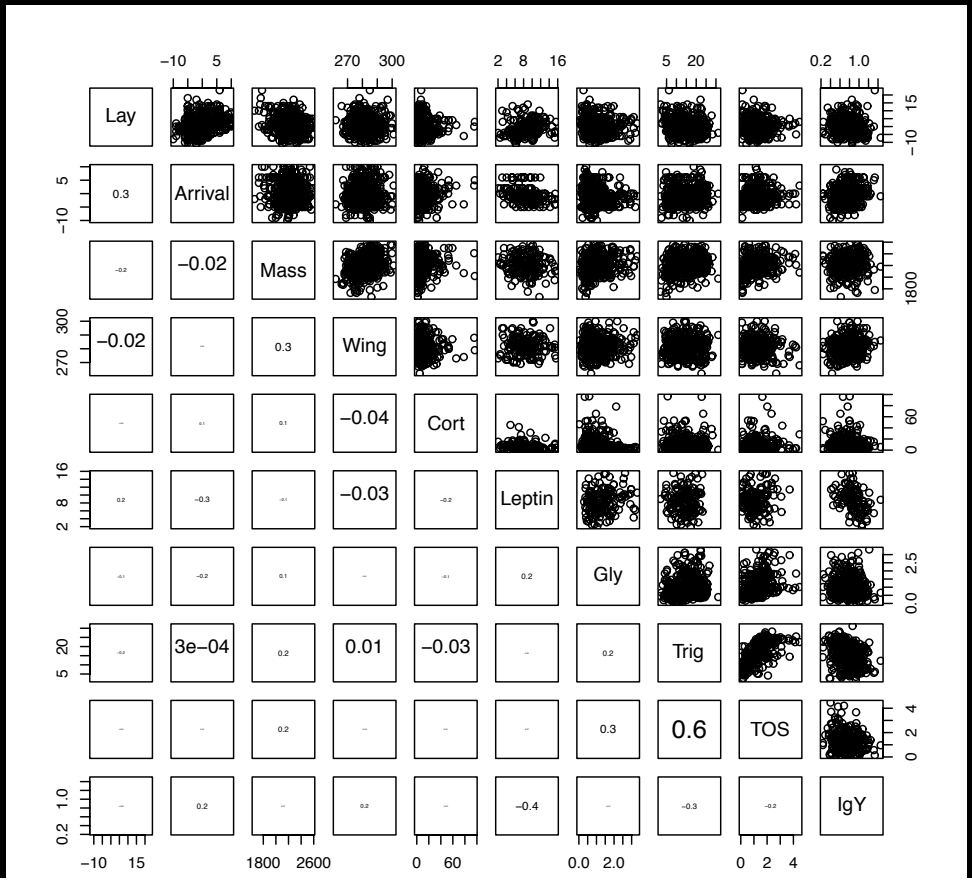


FIGURE 6.1 – Exercice - Partitionnement avancé

http://nicolascasajus.fr/doc/graphonr.pdf

Figures & data analyses

- If you have multiple variables, start with descriptive figure
- Zuur et al. 2010, a key reference



Methods in Ecology and Evolution

British Ecological Society

Methods in Ecology & Evolution 2010, **1**, 3–14

doi: 10.1111/j.2041-210X.2009.00001.x

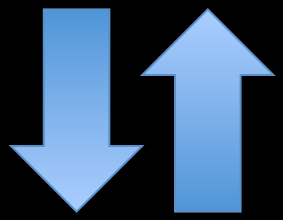
A protocol for data exploration to avoid common statistical problems

Alain F. Zuur*[1,2], Elena N. Ieno[1,2] and Chris S. Elphick[3]

Data analyses

- At this stage (early draft), I would recommend to conduct a thorough analysis of your data… BUT
- Try to avoid spending too much time to find the most accurate model
- Before testing all possible 4 ways interactions among 16 variables, always remember
  - « What story I want to tell? »
  - « What are my research questions ? »

Formulate Hypothesis / aims



Analysis/Valid/simplify/double check your results

Data analyses

Table 4

Parameter values of the additive model showed in the Supplementary appendix 2

		$\psi_{A \rightarrow B}$				$\psi_{A \rightarrow C}$			
Time period	Parameter	Estimate	SE	95% CI		Estimate	SE	95% CI	
September	Intercept	−1.113	0.312	−1.724	−0.502	−2.434	0.448	−3.312	−1.556
	Body size	0.004	0.001	0.002	0.007	−0.002	0.002	−0.005	0.002
	Hunting	0.028	0.007	0.015	0.041	−0.006	0.010	−0.026	0.014
	Cohort	−0.008	0.003	−0.013	−0.002	−0.002	0.004	−0.009	0.005
	Lake area	−0.072	0.018	−0.106	−0.038	0.050	0.025	0.001	0.099
October–January	Intercept	−0.684	0.216	−1.107	−0.260	−1.479	0.244	−1.957	−1.002
	Body size	0.003	0.001	0.001	0.005	−0.001	0.001	−0.003	0.001
	Hunting	0.001	0.005	−0.009	0.011	0.001	0.005	−0.009	0.012
	Cohort	−0.002	0.001	−0.004	0.001	0.001	0.001	−0.001	0.003
	Lake area	−0.042	0.015	−0.072	−0.012	−0.007	0.014	−0.035	0.022

The effect of the covariates on the probabilities of remaining at ($\psi_{A \rightarrow B}$) and of emigrating ($\psi_{A \rightarrow C}$) from release site are shown for juveniles for the months of September and October–January. These parameter estimates were used to generate the predicted curves shown in Figures 2 and 3. All covariates were standardized prior to the analyses and parameters estimates are given after back transformation (Cooch and White 2008). CI, confidence interval.

Recipies to build Outline #1

3. How could I formulate my hypothesis?

4. What are my results (include visuals)?

Formulate Hypothesis / aims

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	Lake area	−0.072	0.018	−0.106	−0.038	0.050	0.025	0.001	0.099
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	Cohort	−0.002	0.001	−0.004	0.001	0.001	0.001	−0.001	0.003
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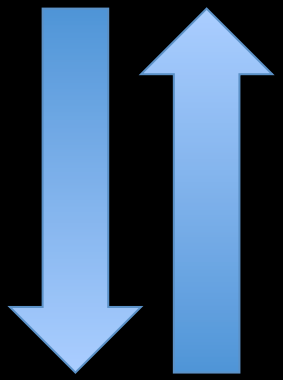


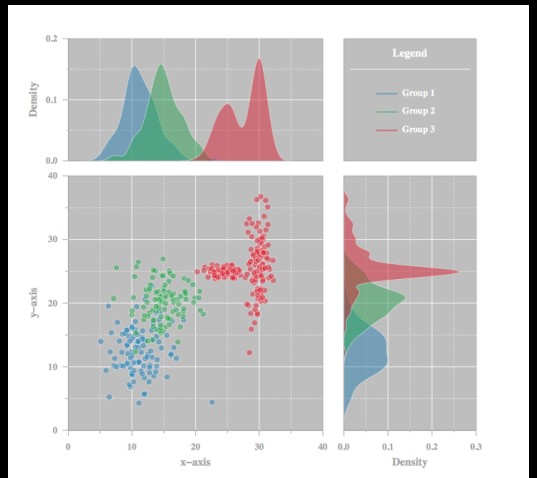


FIGURE 6.1 – Exercice - Partitionnement avancé

Analysis/Valid/simplify/double check your results

You feel you can't improve your outline anymore ?
Send your Outline #1 to your co-authors and supervisors

- If your supervisor/co-authors are not familiar with the methods (protocol design; laboratory experiment; statistical or programming procedure), add them here as well.
- Put notes when you question yourself or indicate which decisions were undertaken during the analyses.
- You need feed back from one co-author on a particular section, be as direct as possible
- More descriptive graphs (tested relationships) will help to select which results are the most important.

A paper I am working on…

Oxidative stress increase in fattening eiders prior reproduction with no extra fitness costs

PIERRE LEGAGNEUX *Département de biologie & Centre d'études nordiques, Université du Québec à Rimouski, 300 Allée des Ursulines Rimouski, Qc, G5L 3A1, Canada*
HOLLY HENNIN *Department of Biological Sciences, University of Windsor, Windsor, Ontario N9B 3P4, Canada*
MARK FORBES Department of Biology, Carleton University, Ottawa, Ontario K1A 0H3, Canada
H. GRANT GILCHRIST *Environment Canada, National Wildlife Research Centre 1125 Colonel By Drive Ottawa, ON K1A 0H3*
CATHERINE SOOS
JANE HARMS
JOËL BÊTY *Département de biologie & Centre d'études nordiques, Université du Québec à Rimouski, 300 Allée des Ursulines Rimouski, Qc, G5L 3A1, Canada*
SOPHIE BOURGEON Norwegian Polar Institute, Fram Centre, 9296 Tromsø, Norway
OLIVER P. LOVE *Department of Biological Sciences, University of Windsor, Windsor, Ontario N9B 3P4, Canada*

MS for consideration in ???

Outline of this formation

- Me, myself and I
- What is Science and why publishing is important
- Recipes to build your first outline: what is essential ?
- Writing an entire manuscript
- Select the most relevant journal
- How to submit my paper: follow the guidelines !
- How to make my paper interesting for a broader audience ?
- Open questions / work on your drafts

Writing your first draft

- Tips to avoid the white page syndrome
  - Copy-past sentences from other closely related papers to begin (but mention it to avoid plagiarism, see Habibzadeh & Winker 2009)
  - Don't worry about having perfect spelling and grammar or getting all your references in the first time (add notes ; comments)
  - For non-native English writers, don't hesitate to mix languages.
  - Don't get distracted – block several hours without facebook !

- From your revised outline, start to write the Material & Methods section (easier)
- Don't put much effort editing your first draft, you will receive a lot of revisions from your supervisor and co-authors
- Don't get upset or angry personally if revisions seem harsh
- Rename or renumber your document every time you make a change (put the date in the name of the document)
- Avoid switching from passive to active voice in the same paragraph

Research paper structure

Experimental process	Section of the paper	Ideal	Actual
What did I do in a nutshell ?	Abstract	6	6
What is the problem	Introduction	1	4
What is your expectations?	Hypothesis & predictions or Aims	2	1
How did I solve the problem ?	Material & methods	3	3
What did I find out ?	Results	4	2
What does it mean ?	Discussion	5	5
Who helped me out ?	Acknowledgements	Last	Last or when tired
Whose work did I refer to ?	Literature cited	Always	Always

Writing your Mat & Meth

- Material & Methods are here to help others to evaluate and replicate your work: give as many details as you can (see below)
- If your method has previously been published and is well-known, then you should provide only the literature reference.
- Passive voice predominant in Materials and Methods sections (Martinez et al. 2005).

1a. Bacteria were pelleted by centrifugation.

1b. To isolate T cells, lymph nodes were collected.

2a. Bacteria were pelleted by centrifugation at 3000g for 15 min at 25°C.

2b. To isolate T cells, mediastinal and mesenteric lymph nodes from Balb/c mice were collected at day 7 after immunization with ovabumin.

Writing your Result section

- Your figures and analyses are already there (outline)
- All you have to do is to describe your results
- Organize your results into different segments or subsections where each one presents the purpose of the experiment, your experimental approach, data including text and visuals (tables, figures, schematics, algorithms, and formulas), and data commentary.
- Each segment should refer to different predictions or aims and be organized in the same order. Similarly, information from the M & M should follow the same order
- *Be clear, concise, and objective in describing your Results.*

Tip: *Long tables or additional results could be put as supplementary materials.*

Writing your introduction

Table 3. Moves in Research Paper Introductions

Move 1. Establish a research territory

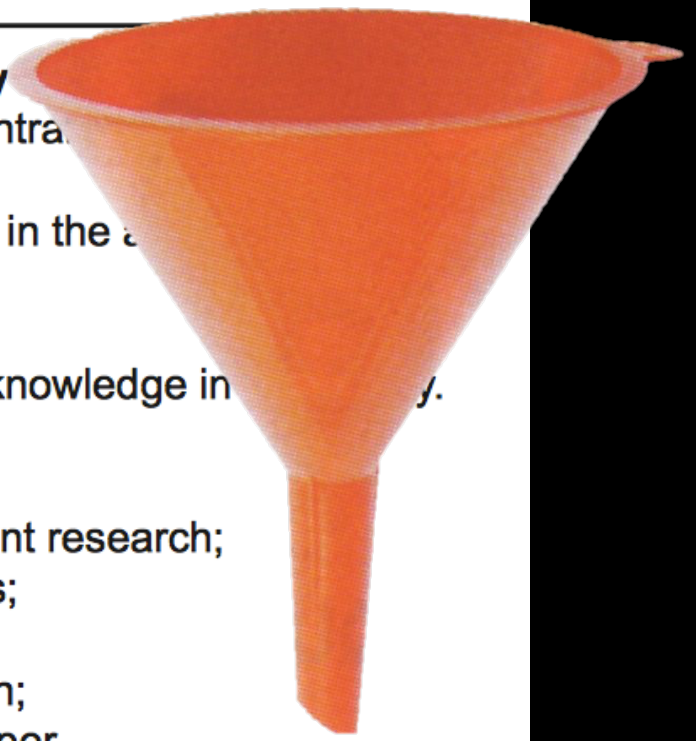
a. Show that the general research area is important, centra
and problematic in some way;
b. Introduce and review items of previous research in the

Move 2. Find a niche

a. Indicate a gap in the previous research, or extend previous knowledge in y.

Move 3. Occupy the niche

a. Outline purposes or state the nature of the present research;
b. List research questions or hypotheses;
c. Announce principle findings;
d. State the value of the present research;
e. Indicate the structure of the research paper.



Adapted from Swales and Feak [11].

Writing your discussion

Table 4. Moves in Research Paper Discussions.

Move 1. The study's major findings
a. State the study's major findings.
b. Explain the meaning and importance of your finding.
c. Consider alternative explanations of the findings.
Move 2. Research Context
a. Compare and contrast your findings with those of other published results.
b. Explain any discrepancies and unexpected findings.
c. State the limitations, weaknesses, and assumptions of your study.
Move 3. Closing the paper
a. Summarize the answers to the research questions.
b. Indicate the importance of the work by stating applications, recommendations, and implications.

Adapted from Swales and Feak and Hess [11,12].

Writing your title

Compose a simple, attractive title that reflects the study

PROCEEDINGS B

350 YEARS OF SCIENTIFIC PUBLISHING

Determination of growth stages and metabolic profiles in *Brachypodium distachyon* for comparison of developmental context with Triticeae crops

Yoshihiko Onda, Kei Hashimoto, Takuhiro Yoshida, Tetsuya Sakurai, Yuji Sawada, Masami Yokota Hirai, Kiminori Toyooka, Keiichi Mochida, Kazuo Shinozaki

Published 8 July 2015. DOI: 10.1098/rspb.2015.0964

More, smaller bacteria in response to ocean's warming?

Xosé Anxelu G. Morán, Laura Alonso-Sáez, Enrique Nogueira, Hugh W. Ducklow, Natalia González, Ángel López-Urrutia, Laura Díaz-Pérez, Alejandra Calvo-Díaz, Nestor Arandia-Gorostidi, Tamara M. Huete-Stauffer

Published 10 June 2015. DOI: 10.1098/rspb.2015.0371

Abstract

- **Tip:** Start by picking key sentences from each section of your MS

- Summaries are typically less than 350 words and should be understandable in isolation and by the non-specialist.
- Summaries should start with a bullet point 1 describing the broad conceptual question addressed by the study, and only delve into the study system and specific question in bullet point 2.
- Summaries should also end with a final bullet point highlighting the conceptual advance(s) that comes from the current study; i.e. it should highlight the broader conceptual implication of the results and conclusions of the current study.
- Advice for optimizing your Summary (and Title) so that your paper is more likely to be found in online searches is provided at http://authorservices.wiley.com/bauthor/seo.asp

Outline of this formation

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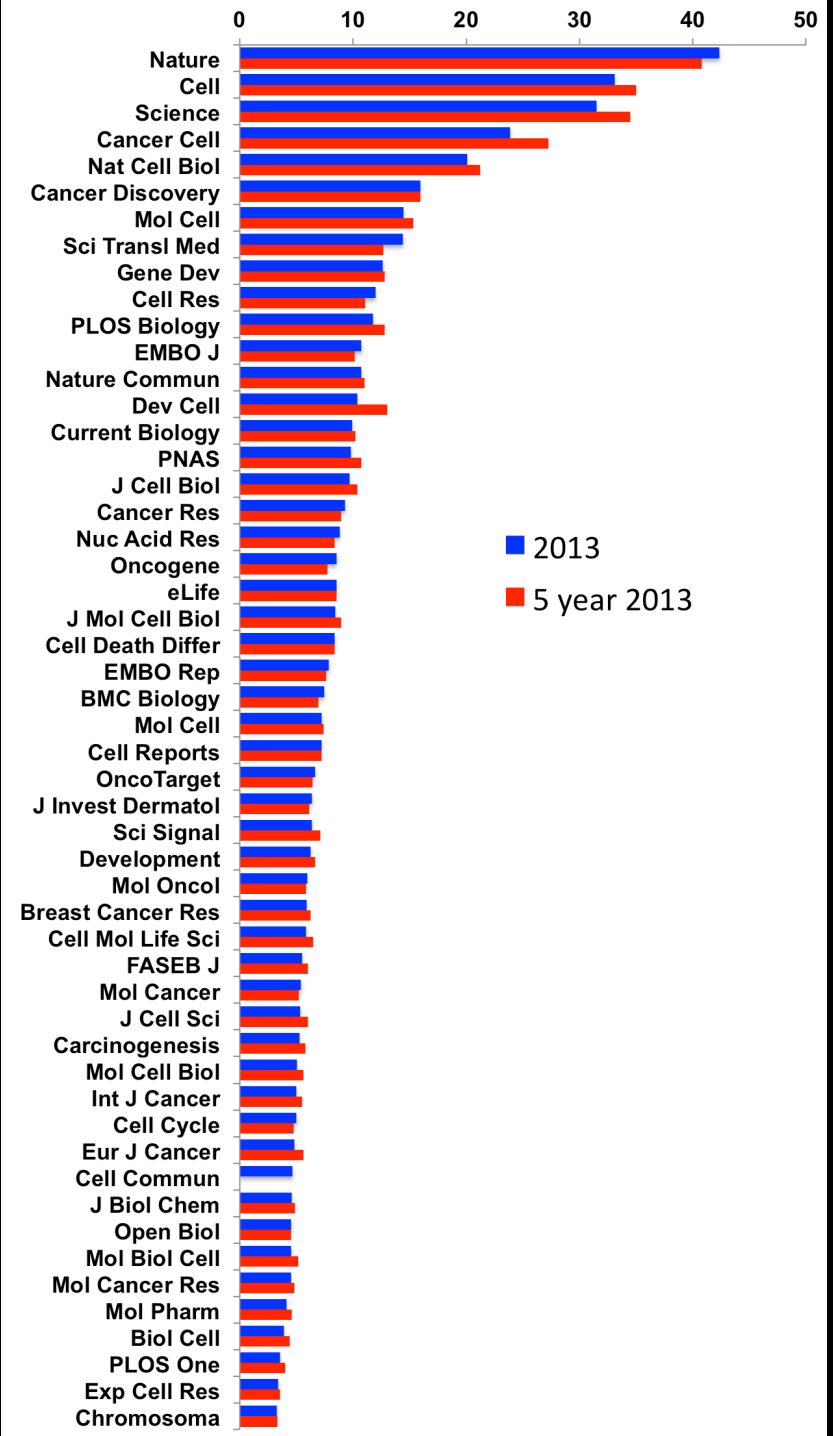
- Select the most relevant journal
- How to submit my paper: follow the guidelines !
- How to make my paper interesting for a broader audience ?
- Open questions / work on your drafts

Select your journal for submission

- Each journal specializes in a specific area of research. Hence its readership varies. A proper choice of journal can make a larger impact of your research.
- Get to know the focus and readership of the journal that you are considering. – general vs. specialized area journal
- Select 2 or 3 journals in the chosen area with relatively high impact factors. Discuss with your advisor/co-authors and decide on the journal (cascading strategy ?)
- Find out the journal's submission criteria and format



Impact factors

$$\text{IF (2013)} = \frac{\text{No. of 2012\&2013 citations in 2014}}{\text{No. of papers published in 2012\&2013}}$$

Viewpoint

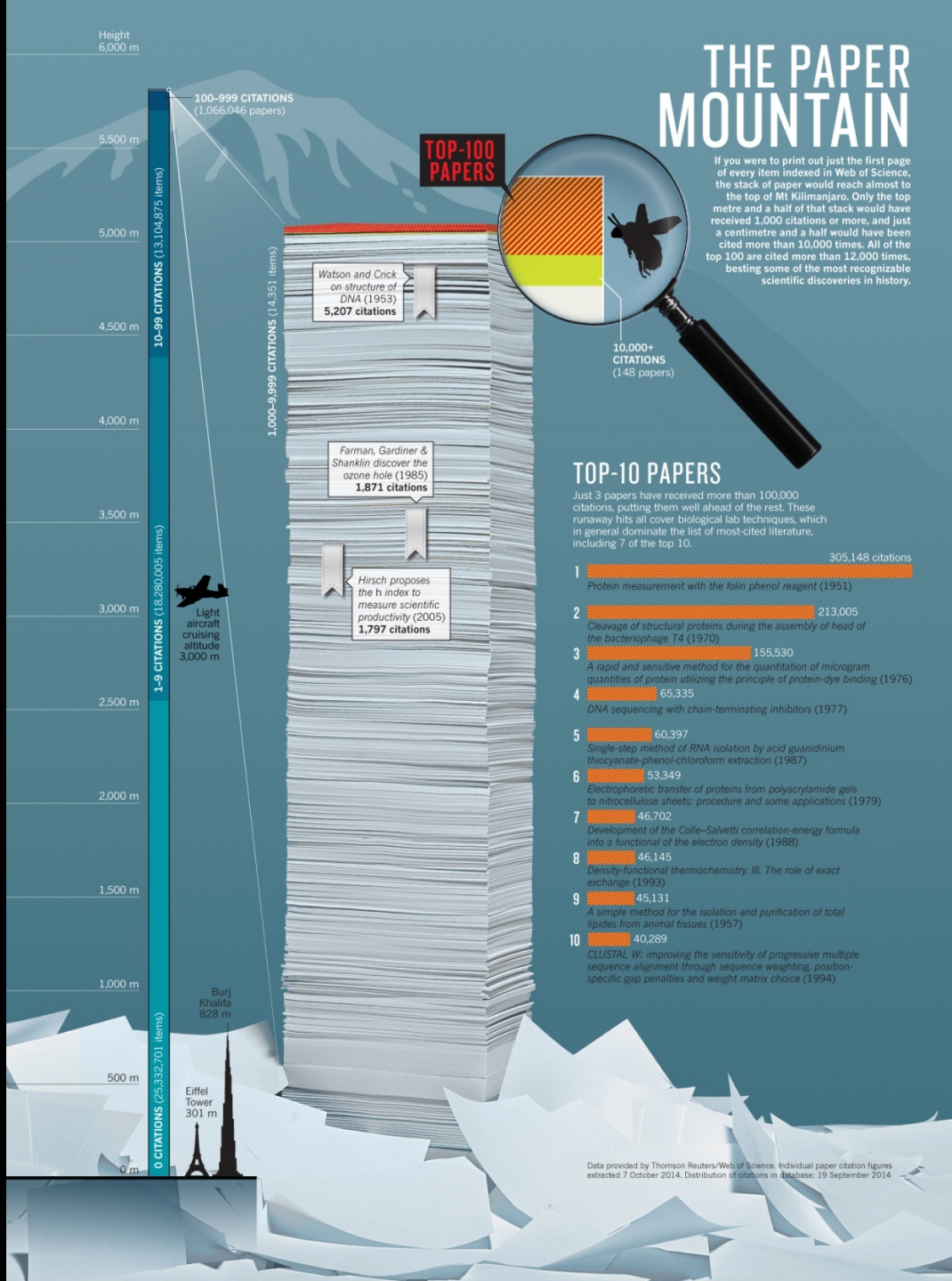
Juniors Seek an End to the Impact Factor Race

FRANÇOIS BRISCHOUX AND TIMOTHÉE R. COOK

This isn't proper, because you cannot judge a candidate for a position only by his or her capacity to publish in big-name journals. Judging someone's research is a complex matter because quality depends on a wide variety of criteria. It should not be a subjective decision, but in practice it usually is. A PhD candidate or a postdoc working under the supervision of an influential researcher, on a big research project involving many collaborators, or in a lab with financial means is perceived to have a more attractive curriculum vitae than others and so has a better start. But this does not necessarily mean that the researcher is more proficient. It could simply mean that he or she was in the right place at the right time. Science is supposed to attract people who are passionate. How, then, has it become a game of chance, politics, calculation, and marketing?

The top 100 papers

- http://www.nature.com/news/the-top-100-papers-1.16224



TheScientist
EXPLORING LIFE, INSPIRING INNOVATION

Don't Format Manuscripts

By François Brischoux and Pierre Legagneux Don't Format Manuscripts Journals should use a generic submission format until papers are accepted. "Dear Dr. Scaramouche, your manuscript has now been reviewed. Based on the comments made by the referees, I decided to reject your paper for publication in our journal. Although I realize you will be disappointed by this decision, I nonetheless hope that the comments made by the referees will be helpf

By Francois Brischoux & Pierre Legagneux | July 1, 2009

Don't Format Manuscripts

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"Dear Dr. Scaramouche, your manuscript has now been reviewed. Based on the comments made by the referees, I decided to reject your paper for publication in our journal. Although I realize you will be disappointed by this decision, I nonetheless hope that the comments made by the referees will be helpful for you to resubmit your ms to another journal."

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Submission

- Read the finalized paper carefully.
- Check for accuracy of figures and captions.
- Are the figures correctly referred to in the text?
- Get feedback from advisor and colleagues.
  Make sure the paper is read by at least one or two colleagues who is not familiar with the specific work.
- Review of your paper by a **native english speaker**
- Have all coauthors approve the finalized version of the paper and agree with potential reviewers (the journal will ask for it)

Cover letter, an important step

- Provide a cover letter to the editor along with a brief paragraph highlighting the importance of this work.
- This cover letter is VERY important, the editor will send your MS out for review depending on the quality of the cover letter.
- Submit the paper online (it can take 1-2 hours)

What should be in a cover letter ?

- An introduction stating the title of the manuscript and the journal to which you are submitting.
- The reason why your study is important and relevant to the journal's readership or field.
- The question your research answers.
- Your major experimental results and overall findings.
- The most important conclusions that can be drawn from your research.
- A statement that the manuscript has not been published and is not under consideration for publication in any other journal
- A statement that all authors approved the manuscript and its submission to the journal.
- Any other details that will encourage the editor to send your manuscript for review.

Dear Prof Michael Hassell, editor of XXX

Please find enclosed our paper entitled "*Punchy and short title*".

First section

- Context (you can add references)
- Indicate the scientific debate

Second section

- Summarize your study (main results)

Last section

conclude on the importance of your study

We confirm that this manuscript has not been published or accepted for publication elsewhere and is not under consideration for publication in another journal. All the co-authors approved the current version of the manuscript. This manuscript has not been previously submitted to another journal.

We hope that our manuscript will retain your attention and believe that our novel results on this topic will be of interest for your journal's broad audience.

And you wait… for at least 3 months before receiving reviewers’ comments


The first two reviewers were fairly positive, with only some minor criticisms.
0:08 / 3:49

Reviewing process. Questions reviewers ask

- Does the paper fit the **standards and scope** of the journal it is being considered for? Is the **research question** clear?
- Was the **approach** appropriate?
- Are the **study design**, methods and analysis appropriate to the question being studied? Is the study **innovative** or original?
- Does the study challenge existing paradigms or **add to** existing knowledge?
- Does it **develop novel concepts**?
- **Does it matter**?
- Are the **methods** described clearly enough for other researchers to **replicate**?
- Are the methods of **statistical** analysis and level of significance appropriate?
- Could **presentation** of the results be improved and do they answer the question?
- If humans, human tissues or animals are involved, was **ethics** approval gained and was the study ethical?
- Are the **conclusions** appropriate?

Revision and the galley proof

- The manuscript is usually reviewed by 2-3 reviewers
- Reviewers point out deficiencies and/or suggestions to improve the scientific content
- Read their comments carefully. (If reviewer misunderstands a point, the point probably needs revision or additional support.)
- Do not blame the reviewer for his/her misunderstanding!
- Be polite and respectful when disagreeing a reviewer's comment
- Include a point-by-point explanation of changes made in the text in response to reviewers' comments indicating lines where the new sentences or sections were changed.
- Once again, carefully read the paper for its accuracy in presenting the data
- Submit the revised version
- Once accepted for publication you should receive the galley proof within a month (Note that some journals will skip the proof stage and publish your paper directly). This is one last chance to make any final corrections.

What to do if a paper gets rejected

- Do not get discouraged. Read editorial comments and discuss with advisor/students/collaborators. Find out how you can make this study stronger and acceptable for publication.
- Do not just turn around and submit the paper to another journal.
- Read carefully the comments and find ways to improve the scientific quality of the papers
- Carry out additional experiments and improve the quality of scientific discussions. (Journals often look for papers with quantitative and mechanistic information that represent new physical insights)
- Rejected papers can be resubmitted if and only the concerns of the reviewers are adequately addressed and new results are included.
- If you have questions, please feel free to contact the editorial office.

Write a rebuttal or accept the editorial decision as it stands ?

Dear editor,

Thank you for your message and for the time you have taken to examine our work.
All coauthors were obviously disappointed by your decision to reject our manuscript without the possibility of resubmission. We wondered if we should write a rebuttal or accept your decision as it stands. We decided to take the unusual course of requesting a revision of your decision. Indeed, this is the first time that we have asked for a reconsideration of a decision on a MS. We decided to do so because we feel that the decision is entirely based on the comments from the AE on ethical aspects despite the fact that all referees wrote positive (or very positive) comments on our manuscript. Although we understand and agree that the manuscripts submitted to *Animal Behaviour* should meet high ethical standards, we believe that our work does meet these standards and do not understand your decision to reject our manuscript at this stage, after a seven month review process. We believe that the two ethical reasons for rejecting our manuscript (use of snares and hunting) are entirely unjustified. For each of those two aspects, we provide bellow a detailed and documented response.

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How to ing for

doi: 10.1111/j.1420-9101.2007.01438.x

Allometry of diving capacities: ectothermy vs. endothermy

F. BRISCHOUX,*† X. BONNET,*† T. R. COOK* R. SHINE‡

*Centre d'Etudes Biologiques de Chizé – CNRS, Villiers en Bois, France
†Université François Rabelais, 3 rue des Tanneurs, Tours, Cedex 1, France
‡Biological Sciences A08, University of Sydney, Sydney, NSW, Australia

PhD candidates
PhD supervisor
International collaborator

Keywords:

allometry;
diving performances;
ectothermy;
endothermy.

Abstract

Body mass positively influences diving capacities in air-breathing vertebrates and has been identified as a key determinant for the evolution of diving. Our review on the relationship between body mass and dive duration (a major parameter of dive performances) encompassed for the first time a wide diversity of air-breathing vertebrates. We included a substantial number of nonavian and nonmammalian diving species belonging to various independent lineages (sea snakes, iguana, turtles and crocodiles). Our analyses suggest that the widely accepted size dependency of dive duration applies with significantly less force in ectotherms compared with endotherms; notably we failed to detect any effect of body mass in ectotherms. We hypothesize that the absence of tight physiological links between body mass and respiratory demands documented in ectotherms blurred our ability to detect the expected correlation. Further exploration of the evolution of diving physiology may well necessitate adopting novel perspectives to encompass both ectothermic and endothermic modes.

Introduction

Phylogenetic transitions in habitat use provide exceptionally powerful opportunities to understand the selective pressures operating on morphology, physiology and behaviour. For example, in air-breathing vertebrates, aquatic life exerts major influences on attributes such as the ability to move efficiently through water, to hold the breath to remain underwater for long time periods, and to dive to considerable depths (Kooyman, 1989). Some of the most clear-cut examples of adaptation to marine life have been documented in marine endothermic vertebrates: whales, dolphins, seals, penguins, etc. These organisms exhibit deep morpho-functional adaptations that considerably increase their diving performance, notably their capacity to remain underwater without breathing, when compared with their terrestrial relatives (Boyd, 1997; Butler & Jones, 1997). However, despite the effectiveness of these adaptations, air-breathing endotherms are highly constrained in dive duration and depth (Butler & Jones, 1997).

Using a large data set, recent reviews (Schreer & Kovacs, 1997; Halsey *et al.*, 2006a, b) have identified a strong and consistent correlation between dive duration and body mass. In endotherms adapted to aquatic life, body size is inversely correlated with relative metabolic rate and positively associated with relative oxygen stores. Large animals can therefore hold their breath and dive for longer absolute time periods compared with small species. As expected, they can also reach greater depths and can access peculiar foraging sites. Although highly oriented towards endothermic vertebrates (because these organisms have been intensively studied), a previous review (Schreer & Kovacs, 1997) incorporated some air-breathing diving ectotherms (several sea turtles). The main trend identified in endotherms remained identical: body mass-corrected dive durations of turtles were within the range of those observed in mammals and birds. Consequently, the strong and tight relationship between body size and dive duration was proposed as a general rule for air-breathing marine vertebrates (Schreer & Kovacs, 1997; Halsey *et al.*, 2006a, b).

However, such a general rule is not expected to apply equally in all air-breathing vertebrates. Constraints on dive duration should apply with much less force to ectotherms than to endotherms. Notably, the low metabolic rate of ectotherms, relative to endotherms, reduces considerably their oxygen demands (Pough, 1980). Similarly, the marked flexibility of ectothermic vertebrates

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JEB: IF = 3.82


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With such a low sample size, what could they do ?

A descriptive note ?

Snakes at sea:
diving performance of free-ranging sea kraits

François Brischoux[1,2], Xavier Bonnet[1], Timothée Cook[1], Richard Shine[3]

[1]Centre d'Etudes Biologiques de Chizé – CNRS, 79360, Villiers en Bois, France
brischoux@cebc.cnrs.fr
[2]Université François Rabelais, 3 rue des Tanneurs, 37041 Tours, Cedex 1, France
[3]Biological Sciences A08, University of Sydney, New South Wales 2006, Australia

Abstract. Evolutionary transitions from terrestrial to marine life pose massive physiological challenges. Marine mammals and birds exhibit major adaptations of cardiovascular and respiratory physiology to increase the depths to which they can dive, and the time for which they can remain underwater. Marine reptiles have attracted far less attention in this respect, but we would expect ectotherms to outperform endotherms in several dive performances because ectothermy reduces oxygen demand. We surgically implanted dive-loggers in amphibious sea snakes (sea kraits, *Laticauda laticaudata* and *L. saintgironsi*) in the lagoon of New Caledonia, and recorded dive performance (e.g., depths, durations and post-dive intervals) for two free-ranging animals over periods of 8 and 11 weeks. During foraging excursions the snakes spent > 80% of their time underwater, diving > to 80 m and for periods of > 130 min. Inter-dive intervals were brief, typically < 45 sec, suggesting that dives were aerobic. Dive patterns in these animals differ in major respects from those of previously-studied marine endotherms, turtles and pelagic sea snakes.

1 INTRODUCTION

Evolutionary transitions in habitat use provide exceptionally powerful opportunities to understand the selective pressures operating on morphology, physiology and behaviour, especially if the novel habitat poses physical challenges different from those experienced in the ancestral habitat type. For example, aquatic life exerts major selection on attributes such as the ability to move efficiently through water, to remain underwater for long periods without needing to surface to breathe, and to dive to considerable depths (Kooyman, 1989). The morphological, physiological and behavioural attributes that facilitate such tasks are very different from those required in the day-to-day lives of most terrestrial organisms. Accordingly, lineages of terrestrial vertebrates that have evolved to exploit marine habitats provide many striking examples of adaptation to aquatic life (Boyd, 1997; Kooyman, 1989).

Some of the most clearcut examples of adaptation to marine life involve modifications of endothermic vertebrates (whales, seals, penguins, etc.) related to diving performance (Butler and Jones, 1997; Boyd, 1997). Notably, compared to their terrestrial homologues, diving endotherms are able to store large amounts of oxygen via abundant haemoglobin and myoglobin, and increased blood volume. They also reduce oxygen needs while diving by reliance on anaerobic metabolism, peripheral vasoconstriction, bradycardia, and decreased body temperature (Butler and Jones, 1997; Boyd, 1997). Likewise, cardiovascular

Brischoux, F., Bonnet, X., Cook, T. R. & Shine, R. 2007 Snakes at sea: diving performances of free-ranging sea kraits. In Proc. 11th Annual Meeting on Health, Science and Technology, Tours University, France.

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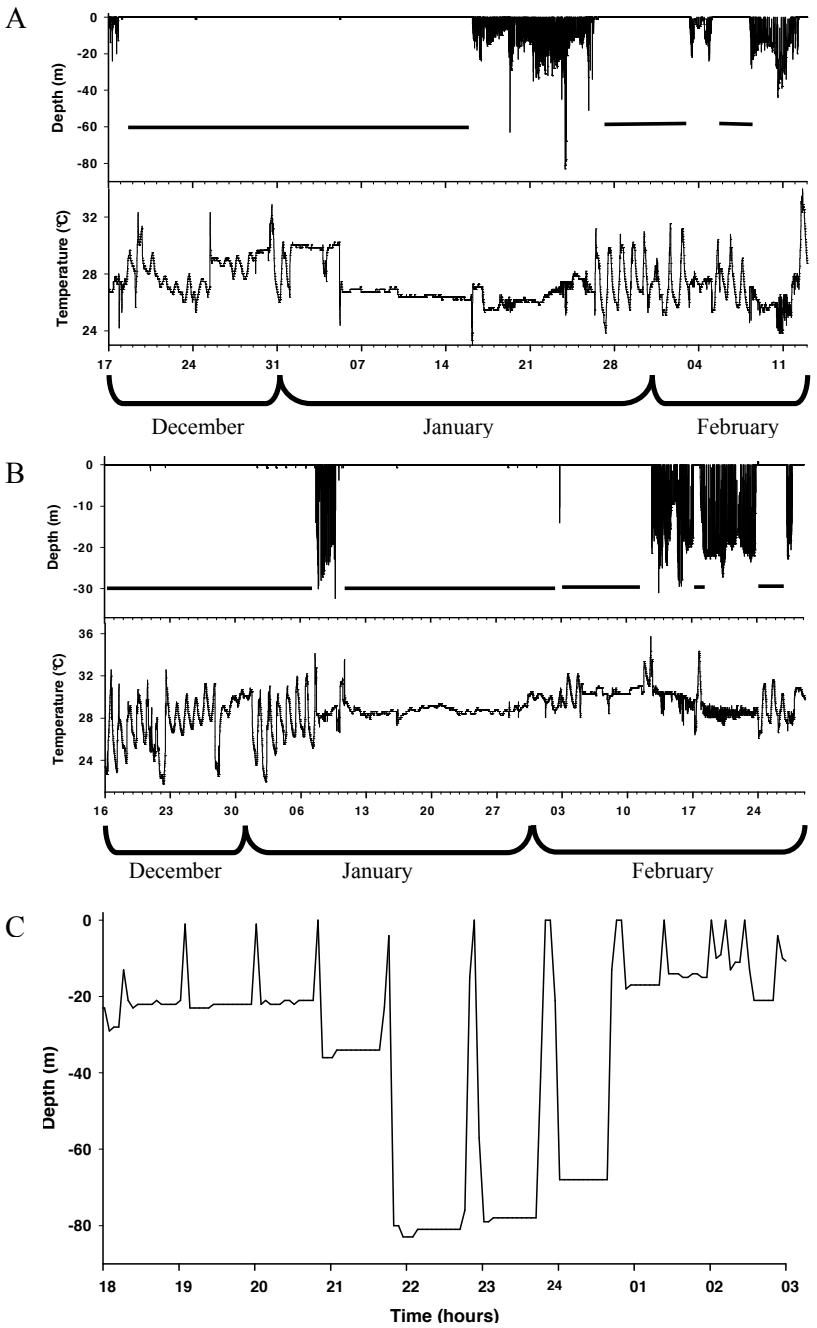
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Depth (m)
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-20
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Time (hours)

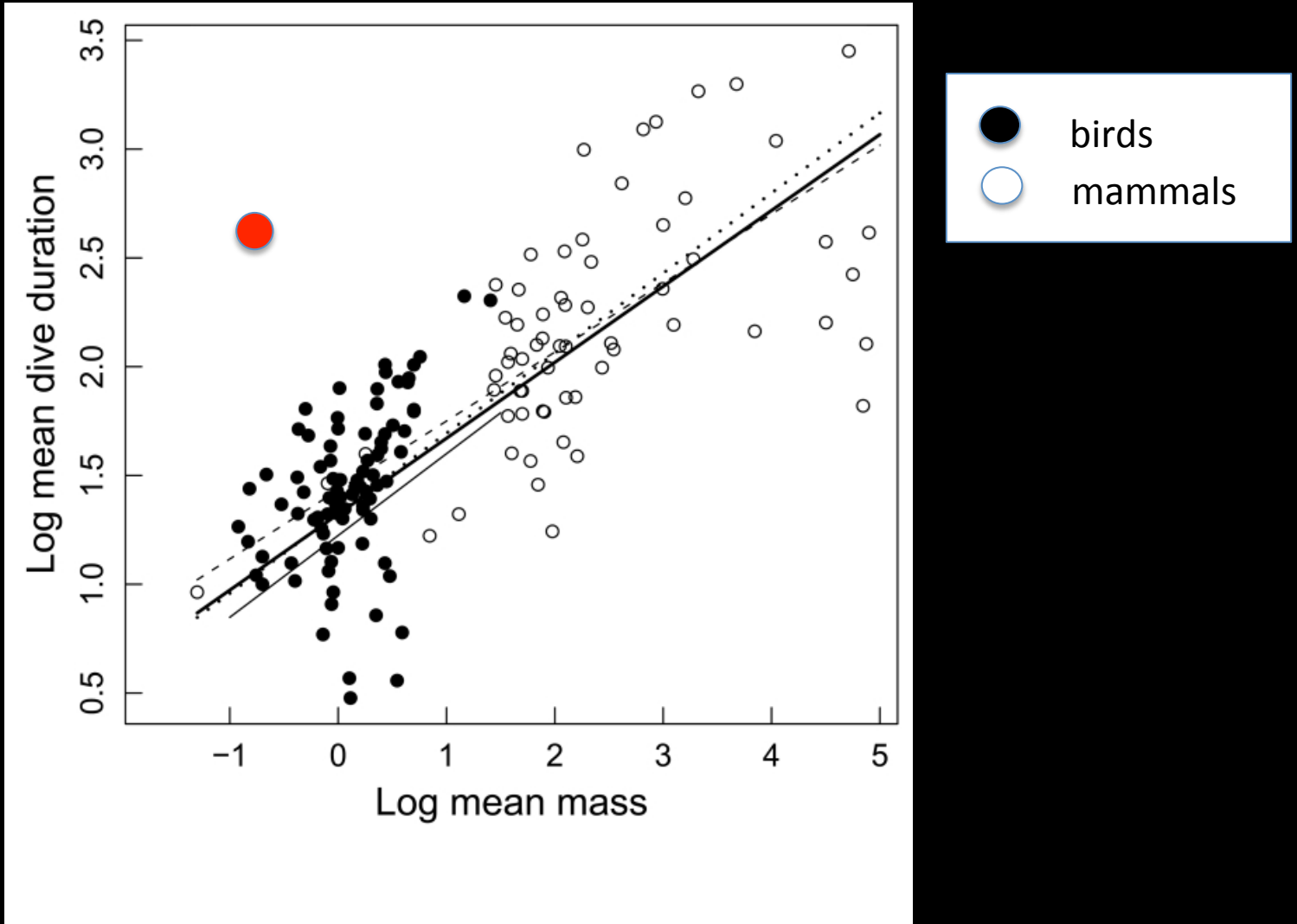
How to make my paper interesting for a broader audience ?

VOL. 167, NO. 2 THE AMERICAN NATURALIST FEBRUARY 2006

A Phylogenetic Analysis of the Allometry of Diving

Lewis G. Halsey,* Patrick J. Butler,† and Tim M. Blackburn‡

How to make my paper interesting for a broader audience ?



How to make my paper interesting for a broader audience ?

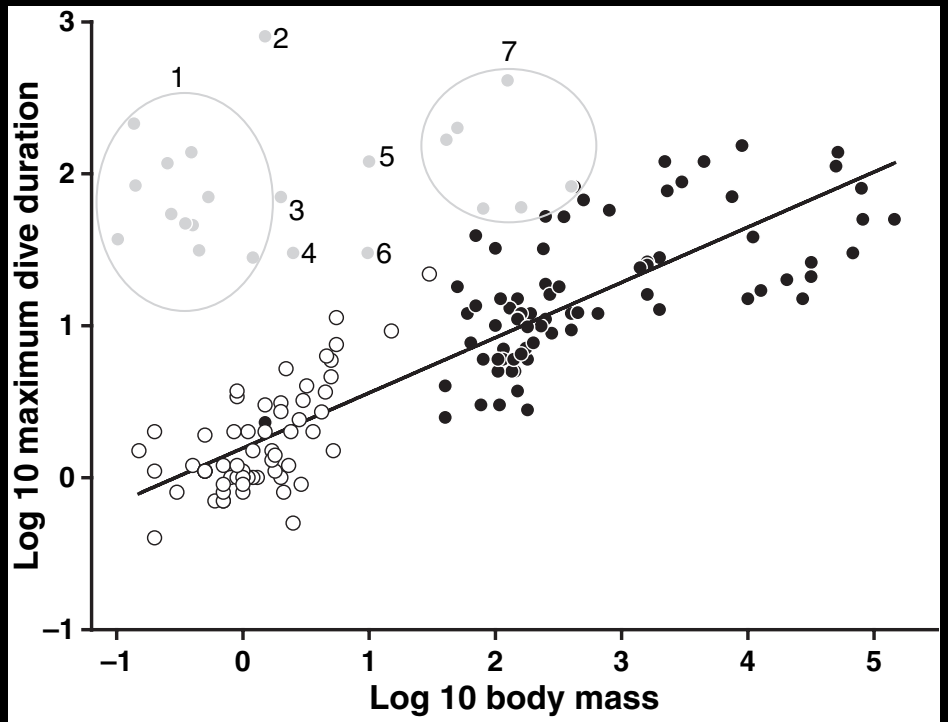


Fig. 1 The relationship between maximum dive duration and body mass, in air-breathing diving vertebrates for the main phylogenetic groups. White and black circles are for birds and mammals respectively (regression line for endotherms; $y = 2.91x + 0.2$). Grey circles are for snakes (1), freshwater turtles (2 and 3), marine iguana (4), freshwater crocodile (5), saltwater crocodile (6) and marine turtles (7).

biology letters
Animal behaviour

Biol. Lett. (2009) **5**, 729–731
doi:10.1098/rsbl.2009.0550
Published online 5 August 2009

Opinion piece

Kleptothermy: an additional category of thermoregulation, and a possible example in sea kraits (*Laticauda laticaudata*, Serpentes)

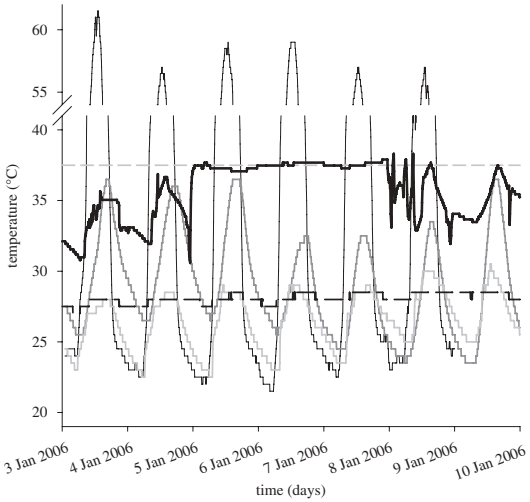


Figure 1. Ambient temperatures on a small island (Signal Islet, New Caledonia) and body temperatures of a male sea krait (*Laticauda laticaudata*) on that island over a seven-day period in January 2006. Thermal regimes were monitored with data-loggers (ACR SmartButton data Loggers: $\pm 0.5^{\circ}$C, sampling rate 5 min excepted for the snake, see text); all sites other than the occupied shearwater burrow provided cooler and/or more variable temperatures than did the burrow used by the snake from 5 to 8 January (open: $35.3 \pm 13.4^{\circ}$C, 'dry' beach rock: $29.1 \pm 3.6^{\circ}$C, intertidal beach rock: $26.5 \pm 2.0^{\circ}$C, vacant sea bird burrow: $28.1 \pm 0.4^{\circ}$C). Beach rocks and vacant bird burrows are frequently used as shelters by *L. laticaudata* (Bonnet *et al.* 2009). Thin black line indicates open; thick grey line indicates 'dry' beach rock; thin grey line indicates intertidal beachrock; thick broken black dashes indicate vacant seabird burrow; thick black line indicates *L. laticaudata* (adult male); thin broken grey dashes indicate constant 37.5°C temperature).

and preliminary, and do not tell us whether or not the snakes actively select occupied bird burrows, or whether such occupancy conveys any fitness benefits (or, indeed, costs). Nonetheless, the data do confirm that the presence of an endotherm can create thermal heterogeneity at a spatial and temporal scale relevant to a mobile ectotherm in the same area, and can do so in a way that is potentially exploitable by the ectotherm. If such conditions are frequently satisfied, then the ability to exploit endotherm-derived 'hotspots' may well be significant for some species. Kleptothermy may be distinctive not only in the source of heat involved (the byproduct of another organism's metabolism and/or thermoregulatory behaviour) but also in the magnitude and stability of the thermal regimes potentially achievable; alternative tactics such as heliothermy and other types of thigmothermy typically function only during daylight hours, and do not provide as much thermostability. Given the thermal dependence of locomotor and physiological processes in ectotherms (Dawson 1975; Bennett 1990; Dorcas *et al.* 1997), the fitness benefits of kleptothermy for such animals could be considerable.

As with almost any definitional problem in biology, the boundaries of kleptothermy are unlikely to be clearcut and will require debate and discussion. However, the phenomenon relies upon two major conditions: (i) thermal heterogeneity created by the presence of a warm organism in a cool environment; and (ii) the selective use of that heterogeneity by another animal to maintain body temperatures at higher and more stable levels than would be possible elsewhere in the local area. Importantly, the source of heat in kleptothermy involves the metabolic thermogenesis of another animal, rather than solar radiation, volcanically warmed soil, or any other non-biotic source. Kleptothermy is widespread in endotherms as well as ectotherms (huddling behaviour of juvenile endotherms or microchiropterans are clear examples) but typically is reciprocal. By contrast, kleptothermy in ectotherms generally will be unilateral. Clustering together to retard heat loss thus constitutes kleptothermy in endotherms (because the slower cooling rate is partially owing to heat production by members of the group) but not in ectotherms (because slower cooling is entirely owing to thermal inertia (i.e. gigantothermy)). Endoparasites (including oviductal embryos) are not kleptotherms, because they cannot actively move about to select specific thermal regimes within a heterogeneous environment. Future research could usefully explore the occurrence, forms, and potential fitness consequences, of this putative thermoregulatory tactic.

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Peer review is dying

Web links

http://www3.nd.edu/~pkamat/pdf/researchpaper.pdf

http://undsci.berkeley.edu/article/0_0_0/howscienceworks_02

https://www.youtube.com/watch?v=0oAFVHb21HM

https://www.youtube.com/watch?v=p9Qw6WpKHsM

http://www.nature.com/news/the-top-100-papers-1.16224

https://www.youtube.com/watch?v=hNENiG7LAnc

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