COASTHAZAR
Risks, Climate Change Impacts and Adaptation

DISSERTATION PLAN
&
(MANY) NOTES ABOUT THE DISSERTATION

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UAlg FCT
UNIVERSIDADE DO ALGARVE
FACULDADE DE CIÊNCIAS E TECNOLOGIA

Regulation

THE DISSERTATION PLAN

Dissertation Plan - Regulation

1 - Synopsis

The main goal of this course is to individually develop a dissertation plan addressing a scientific subject pertinent to the objective of the master. An original and individual work must be delivered and presented. It should include:

(0) The statement of a clear objective
(i) a review of the state of the art;
(ii) a detailed planning of the thesis activities (Gantt chart);
(iii) a description of the methods and tools to be used;
(iv) the main expected outcomes/challenges.

The dissertation plan will be submitted as a written document and defended in the presence of colleagues, and degree directors(s) from UAlg.

Regulation

THE DISSERTATION PLAN

2 – Skills to be developed

The skills to be developed within this course include:

a) Capacity to collect and to properly address information and to present them in both written and oral formats;
b) Capacity to integrate concepts from different knowledge areas;
c) Capacity to plan the implementation of scientific and technical activities/methods associated to the proposed work;
d) Capacity to compare and select experimental techniques and tools to be used at the dissertation.

Regulation

THE DISSERTATION PLAN

3 - Evaluation

The evaluation will be based on the analysis of a written report (70% of the final grade) and of an oral presentation (30% of the final grade), both compulsory.

The final mark will be given by consensus between the coordinators and the dissertation supervisor(s), using a 0 (zero) to 20 (twenty) scale. Evaluators should follow the Annex documents as a guide for grading.

In the absence of consensus, the following formula should be applied:

$$FG = 0{,}5\ S + 0{,}5\ D.$$

FG - Final mark (0 to 20);
S – Supervisor mark (0 to 20)
D – Directors mark (0 to 20)

Regulation

THE DISSERTATION PLAN

4 – Report and oral presentation rules and structure

The report should include the following sections:

a) Dissertation title, author, and supervisor(s);
b) Abstract;
c) Motivation for the topic;
d) Main goals;
e) Review of the state of the art;
f) Description of tasks including indication of the methodologies to be used;
g) Presentation of preliminary results if any;
h) Schedule of planned activities (Gantt chart);
i) References.

The report should contain a maximum of 25 A4 pages, including figures, with a line spacing of a space and a half, font Times New Roman or equivalent, size 12.

Regulation

THE DISSERTATION PLAN

4 – Report and oral presentation rules and structure

The student should submit to lnunes@ualg.pt a copy of the report and a declaration from the supervisor(s) stating that the dissertation plan is ready to be presented.

This should be submitted at least one week before the defined date for the oral presentation

The work will be orally presented (10 minutes) to the colleagues, and course directors, and followed by a 5-10 minutes discussion. Supervisors are very welcome if they can attend. The oral presentations will occur by the end of the 1st semester (December).

Regulation

THE DISSERTATION PLAN

Evaluation criteria:

1. Quality of the written report (70%)	mark 0-20	Weight %
1.1. Global report structure, clear and concise writing style		20
1.2. Depth and detail of the description of the methodologies and literature review		30
1.3. Scientific correctness (lack of scientific errors)		20
2. Quality of the oral presentation (30%)		
2.1. Clarity, timing and layout of the slides and oral presentation		20
2.2. Scientific correctness of the oral presentation		10
Final mark of Evaluator:	0	100

In the case of the supervisor, the citeria for point 2 are shown in the next slide

Regulation

THE DISSERTATION PLAN

Evaluation criteria:

Evaluation parameters for point 2 (supervisors):

Research Question and Objectives
Assess whether the student's research question and objectives have evolved and improved over time as a result of their literature review.

Literature Review
Evaluate the ability to identify and engage with a wide range of relevant literature; depth of critical analysis and synthesis of literature; how well the student integrates the literature with the objective of their own research; clarity, conciseness, and organization of the writing.

Methodological Development
Evaluate the student's ability to refine and adapt their research methodology based on the review; understanding and application of ethical considerations in research.

Data Collection and Analysis (when applicable)
Assess the extent to which the student can independently collect and analyze data; the quality of data collected and the rigor of data analysis; ability to interpret and discuss their findings in the context of the research question and existing literature; proficiency in statistical or analytical methods; robustness and reliability of the results obtained; ability to address challenges and adapt their research approach when necessary; critical thinking skills in evaluating the strengths and limitations of their research.

Commitment and Scientific Growth
Assess the level of engagement and the quality of discussions during advisory meetings; incorporation of feedback provided during the dissertation plan development stages; ability to manage time effectively to meet research milestones and deadlines; overall scientific development throughout the process; adherence to ethical guidelines.

(30%)

THE DISSERTATION PLAN/DISSERTATION

Useful links:

General MSc regulation:

The text is “"Regulation of study cycles leading to the Master and Doctoral degrees of the University of Algarve“

Find it here: https://www.ualg.pt/en/regulations

Secretariat:

Telma Costa (fctmestrados@ualg.pt)

Webpage for the discipline (complementary to the Moodle):

https://sitesforprojects.wixsite.com/luismiguelnunes/tp

Regulation

THE DISSERTATION PLAN

Important dates:

Submit to me (lnunes@ualg.pt), via e-mail, a copy of the report (in PDF) and a declaration from the supervisor(s) stating that the dissertation plan is ready to be presented (e-mail is enough).

The deadline for submitting both documents is the 5th of December 2025.

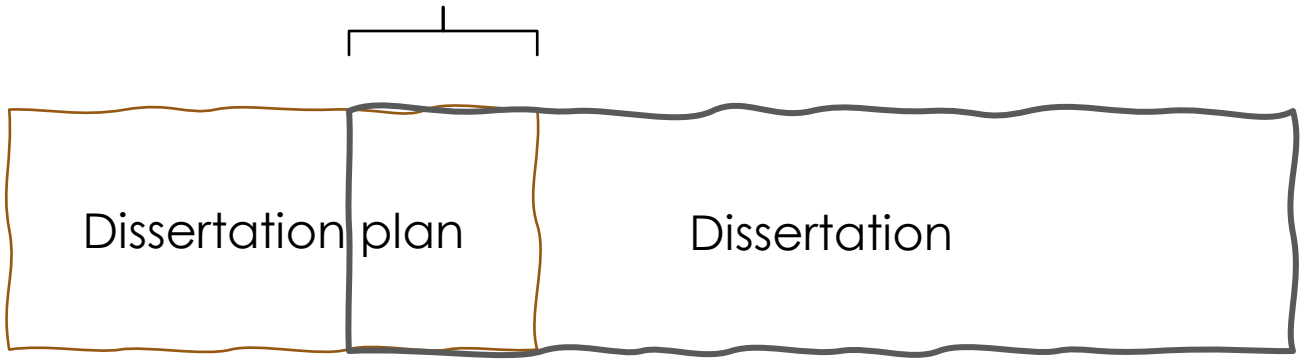
THE DISSERTATION

"That should be good for quite a few doctoral dissertations in the future."

THE DISSERTATION

The Dissertation Plan and the Dissertation have a lot in common:

- Motivation for the topic
- Main goals
- Review of the state of the art
- Description of tasks including indication of the methodologies to be used



THE DISSERTATION

Objective

Document where the candidates shows to:

Have the knowledge and understanding that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context;

Be able to apply their knowledge and understanding, and problem-solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study;

Have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements;

Communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non specialist audiences clearly and unambiguously;

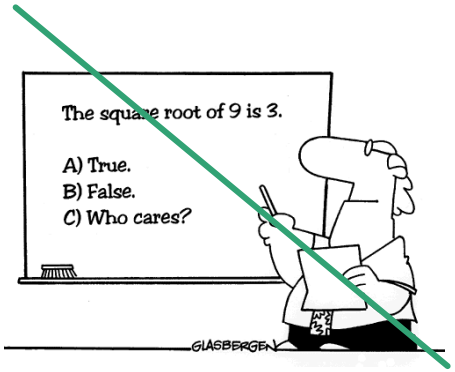
Have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.

The work must not be innovative

http://ecahe.eu/w/index.php/European_Qualifications_Framework

THE TOPIC

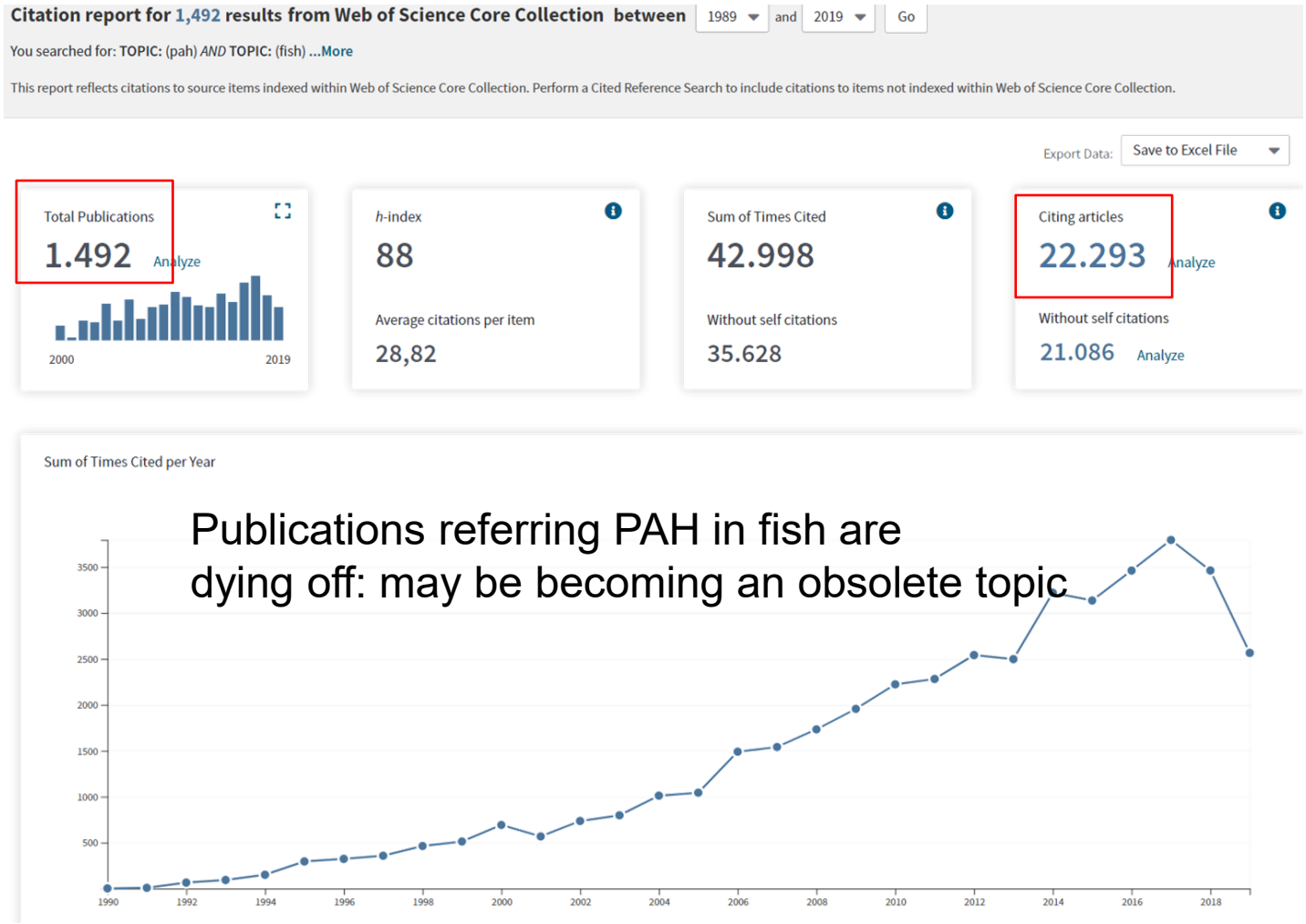
The topic should be interesting to the candidate and to others



Content

THE TOPIC

How to know if a given topic is interesting: with future…?



THE TOPIC

Content

Citation report for 30 results from Web of Science Core Collection between 1989 and 2019 Go

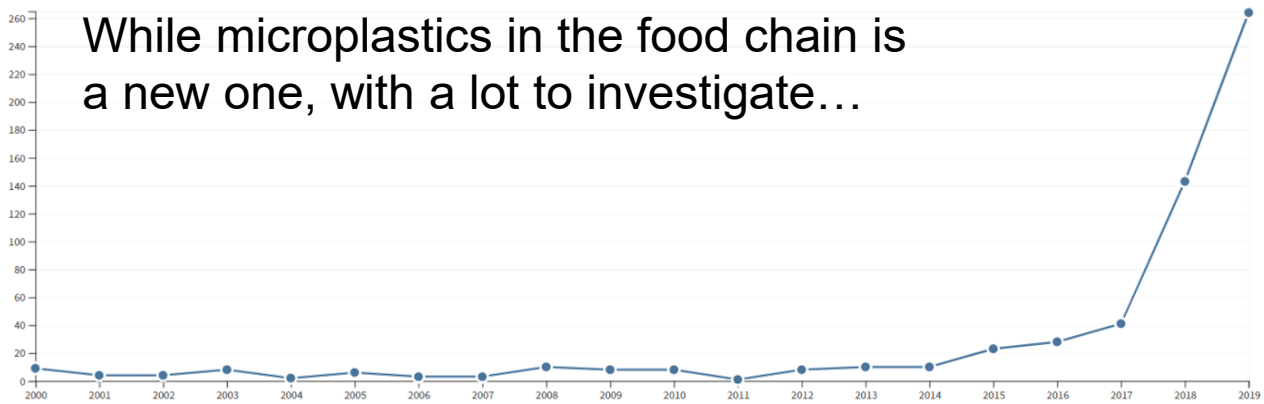
You searched for: **TOPIC:** (micro plastics) *AND* **TOPIC:** (fish) *AND* **TOPIC:** (human) ...More

This report reflects citations to source items indexed within Web of Science Core Collection. Perform a Cited Reference Search to include citations to items not indexed within Web of Science Core Collection.

Export Data: Save to Excel File

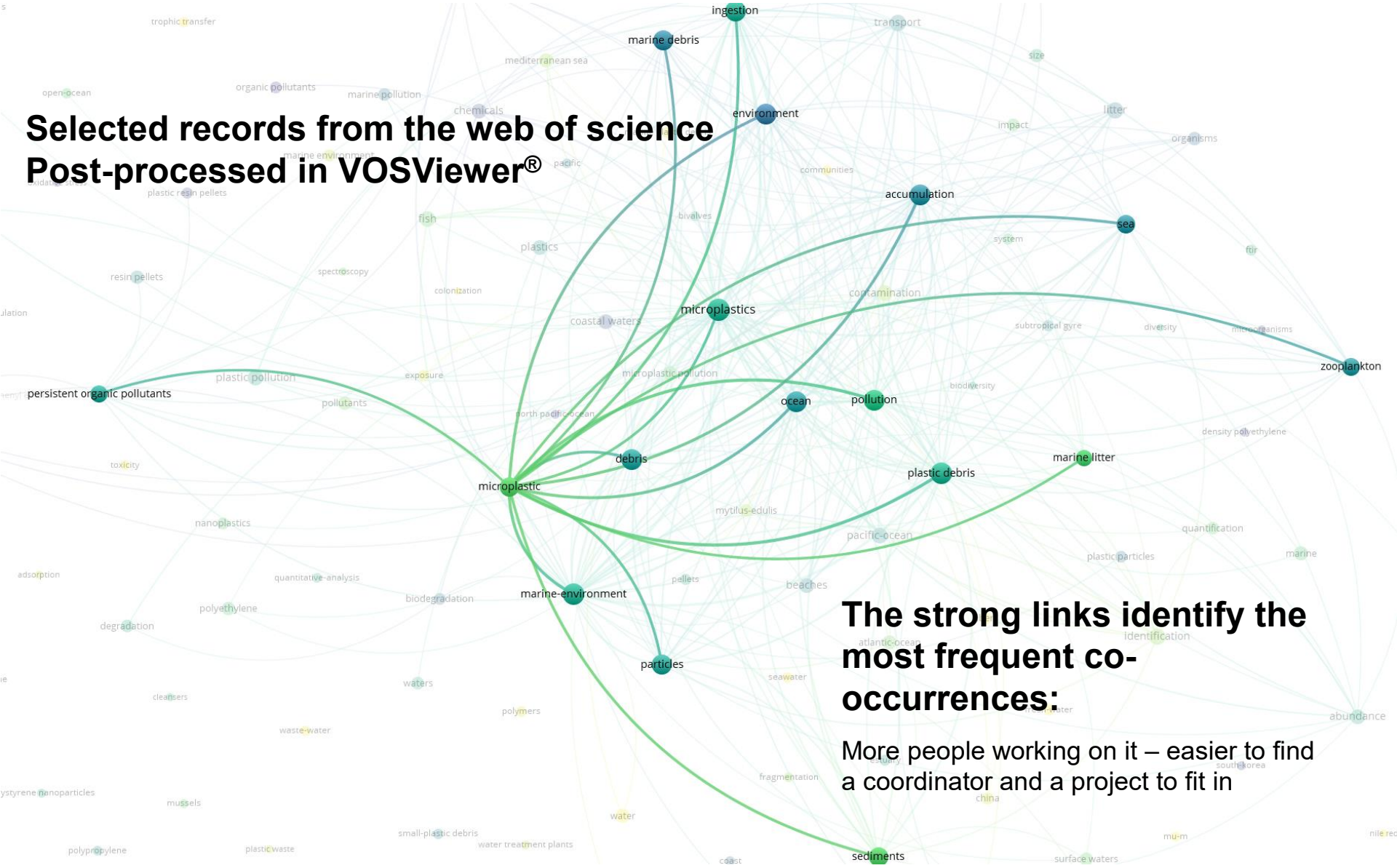
Total Publications	*h*-index	Sum of Times Cited	Citing articles
30 Analyze	14	593	499 Analyze
2000 – 2019	Average citations per item: 19,77	Without self citations: 573	Without self citations: 487 Analyze

Sum of Times Cited per Year



While microplastics in the food chain is a new one, with a lot to investigate…

THE TOPIC And maybe do some network analysis:

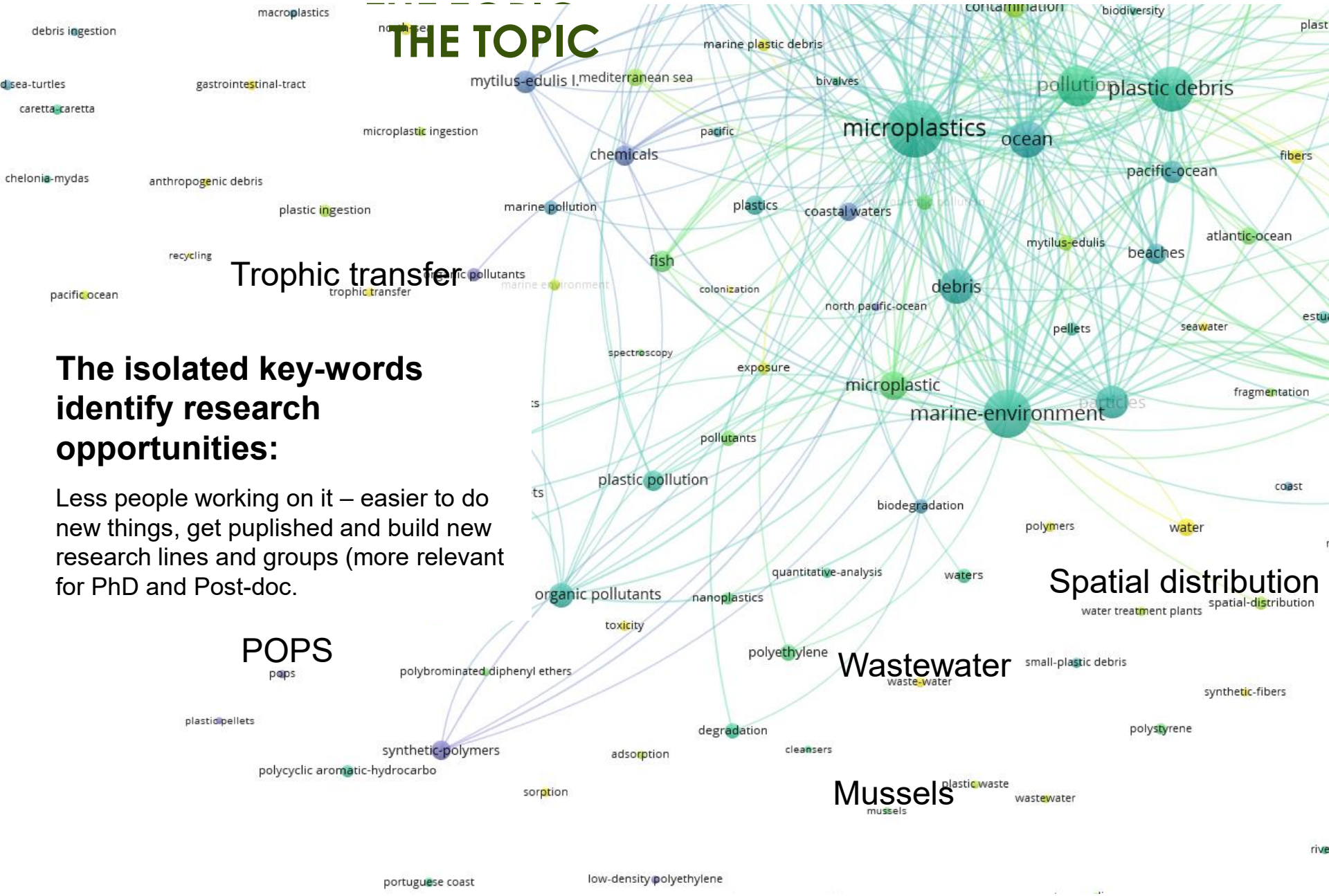


Selected records from the web of science
Post-processed in VOSViewer®

The strong links identify the most frequent co-occurrences:

More people working on it – easier to find a coordinator and a project to fit in

THE TOPIC



The isolated key-words identify research opportunities:

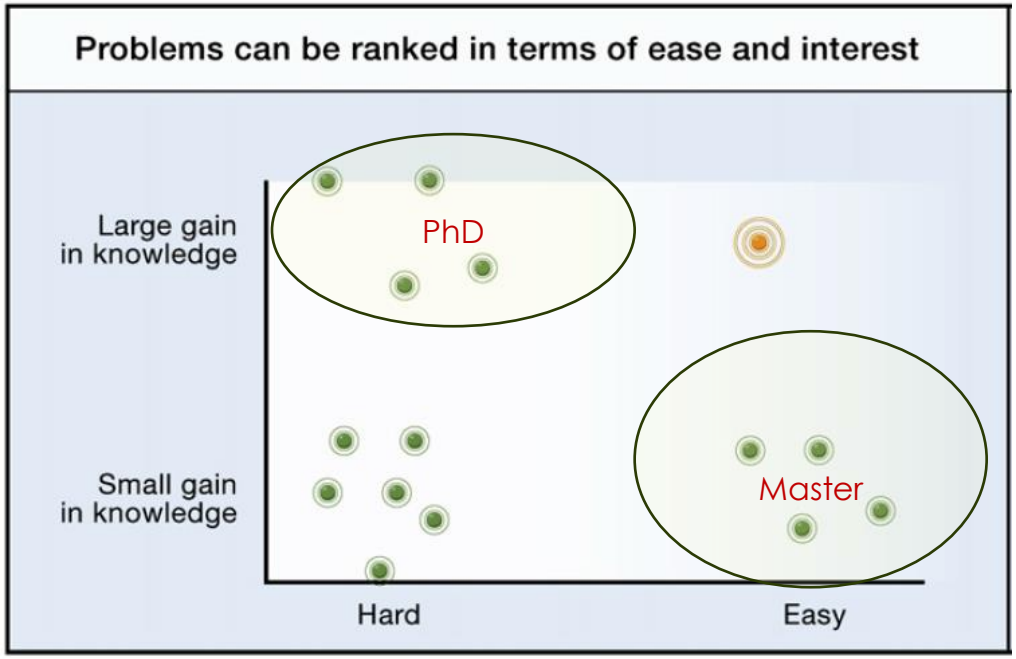
Less people working on it – easier to do new things, get puplished and build new research lines and groups (more relevant for PhD and Post-doc.

Content

THE TOPIC

However interesting the topic may be, make sure the work it is duable given the available time and resources

Leave the hard work for the PhD…



Content

THE PLANNING

A Master thesis takes about one year to complete:

3-4 months for literature review
5-6 months for the experimental work and analysis
2-4 months for writing

THE CONTENT

Content

Make the story interesting

THE CONTENT

Make the story interesting: #1: use good quality images

THE CONTENT

Make the story interesting: #1

Phys. Rev. Lett.

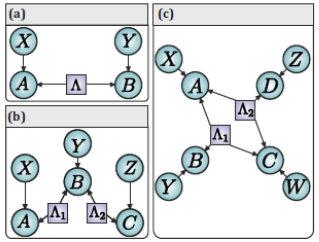


FIG. 1. DAG representation of causal structures. **(a)** Bipartite LHV model. **(b)** Tripartite GLHV model with 2 independent hidden variables representing an entanglement swapping experiment [3, 17]. **(c)** Fourpartite GLHV model with 2 hidden variables.

lem [29]. Unfortunately, given their double exponential computational complexity [30–33], their application to Bell scenarios is intractable already for the simplest possible models [34, 35]. Even the most computationally amenable tools from AG [34, 36, 37] are unable to characterize structures beyond 5 binary variables [34]. It is clear that in spite of the existence of general purpose methods, they are far from delivering a relevant and practical tool for the study of the emergence of nonlocality in complex causal structures.

In this paper we propose a new and general method for deriving polynomial inequalities in generalized Bell scenarios. As opposed to other available methods requiring a high level of expertise in algebraic geometry [29, 34], our approach involves basic concepts from convex optimization and thus provides a more accessible tool for the analytic derivation of inequalities in a variety of scenarios. Moreover, in spite of the intrinsic high computational complexity of the problem, our approach is computationally more accessible than previous attempts. Finally, our construction allows for relaxations of causal constraints and, as shown in the Supplemental Material [38], naturally introduces a notion of nonsignalling [45] in generalized scenarios.

Bell inequalities, causal structures and algebraic geometry.— Bell scenarios beyond LHV models can be represented via the graphical notation of directed acyclic graphs (DAG), where nodes stand for variables and directed arrows represent causal relations [11, 12]. LHV models correspond to DAGs with a single hidden variable. For instance, the DAG in Fig. 1(a) represents the usual causal structure from a Bell experiment, where a common source produces particles emitted to two observers that at each round of the experiment measure a given observable, labelled by X and Y respectively, obtaining outcomes A and B. GLHV models have a similar physical intuition, the difference being that they are represented by DAGs with $n \geq 2$ independent hidden variables (Fig. 1(b)-(c)). The causal relations implied by DAGs are captured by the (conditional) independencies (CI) implied by the graph [11]. For instance, for the LHV model in Fig. 1(a) it follows that $p(x, y, \lambda) = p(x)p(y)p(\lambda)$ and $p(a|x, y, \lambda) = p(a|x, \lambda)$ (similarly to b).

To contrast the difference in the geometry of correlations of LHV and GLHV models, consider the models in Fig. 1(a-b). From the CIs implied by the DAG in Fig. 1(a) it follows that any observable data $p(a, b|x, y)$ compatible with a LHV model can be decomposed as

$$p(a, b|x, y) = \sum_{\lambda} p(a|x, \lambda)p(b|y, \lambda)p(\lambda). \qquad (1)$$

That is, any LHV distribution lies inside the convex set defined by (1), the correlation polytope C [46, 47]. In this geometric picture, (linear) Bell inequalities are nothing else than facets of C. Given the list of the extremal points of C, finding its facets amounts to dualize the description of the polytope, the facet enumeration problem.

In turn, from the DAG in Fig. 1(b), it follows that any GLHV model compatible with it can be written as

$$p(a, b, c|x, y, z) = \sum_{\lambda_1 \lambda_2} p(a|x, \lambda_1)p(b|y, \lambda_1, \lambda_2)p(c|z, \lambda_2)p(\lambda_1)p(\lambda_2). \qquad (2)$$

Because of the independence of the underlying hidden sources ($p(\lambda_1, \lambda_2) = p(\lambda_1)p(\lambda_2)$), (2) implies a non-convex region. Therefore, the techniques developed for LHV models can no longer be applied.

In this case, one can in principle resort to the AG approach [29], where the constraints implied by a DAG are encoded in a semi–algebraic set, a list of polynomial equalities and inequalities in all variables composing the DAG. Given that some of the variables are not observable they need to be eliminated from our description. Formally, the problem is equivalent to quantifier elimination: the projection of a semi–algebraic set onto a subspace of it, that by Tarski-Seidenberg theorem is again a semi–algebraic set [29, 30]. Via quantifier elimination we obtain a full description, in terms of polynomial inequalities, of the marginal scenario of interest associated with any DAG. The problem with usual methods [29, 34, 36] resides in its complexity, that not only is double exponential, but also depends on the domain size of all model variables, including hidden

Nature

As demonstrated by the celebrated Bell's theorem[1], correlations arising from experiments with distant quantum mechanical systems are at odds with one of our most intuitive scientific notions, that of local realism. The assumption of realism formalizes the idea that physical quantities have well-defined values independently of whether they are measured or not. In turn, local causality posits that correlations between distant particles can only originate from causal influences in their common past. These two rather natural assumptions together imply strict constraints on the empirical correlations that are compatible with them. These are the famous Bell inequalities, which have been recently violated in a series of loophole-free experiments[2–4] and thus conclusively established the phenomenon known as Bell non-locality. Apart from their profound implications in our understanding of nature, such experiments provide a proof-of-principle for practical applications of non-local correlations, most notably in the context of quantum networks[5–7].

In a quantum network, short-distance nodes are connected by sources of entangled systems which can, via an entanglement swapping protocol[8,9], establish entanglement across long distances as well. Importantly, such long-distance entanglement can in principle also be used to violate a Bell inequality and thus establish a secure communication channel[10–12]. Clearly, for these and many other potential applications[13–16], the certification of non-local correlations across the network will be crucial. The problem, however, resides on the fact that experimental imperfections accumulate very rapidly as the size of the network and the number of sources of states increase, making the detection of Bell non-locality very difficult or even impossible by usual means[17,18]. One of the difficulties stems from the derivation of Bell inequalities themselves, where it is implicitly assumed that all the correlations originate at a single common source (see Fig. 1b), the so-called local hidden variable (LHV) models. Notwithstanding, in a network a precise description must take into account that there are several and independent sources of states (see Fig. 1c), which introduce additional structure to the set of classically allowed correlations. In fact, there are quantum correlations that can emerge in networks that, while admitting a LHV description, are incompatible with any classical description where the independence of the sources is considered[19–25]. For instance, a network with two independent sources allow for the emergence of a different kind of non-local correlations violating the so-called bilocal causality assumption[19,20].

The aim of this study is to experimentally observe this different type of Bell non-locality. We experimentally implemented, using pairs of polarization-entangled photons, the simplest possible quantum network akin to a three-partite entanglement swapping scheme (see Fig. 1c). Two distant parties, Alice and Charlie, perform analysis measurements over two photons (1 and 4, see Fig. 2), which were independently generated in two different sources, whereas a third station, Bob, performs a Bell-state measurement over the two other photons (2 and 3), one entangled with Alice's photon and the other entangled with Charlie's one. This scheme allows us to observe Bell non-bilocal correlations by violating the Bell-like inequality proposed in refs 19,20. Further, showing that our experimental data is nevertheless compatible with usual LHV models where the independence of the sources is not taken into account, we can conclude that the quantum correlations we generate across the network are truly of a different kind. Moreover, we experimentally show that beyond a certain noise threshold one can enter a region where no standard local causality violation can be extracted from the shared state between Alice and Charlie after entanglement swapping and, nevertheless, the correlations of the entire network can still violate the bilocal causality assumption.

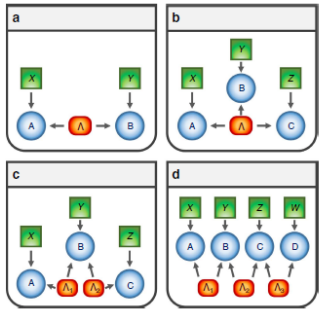


Figure 1 | Representation of the causal structures underlying the networks[45]. Directed acyclic graphs[45] can represent different causal structures, for instance the nodes in the graph represent the relevant random variables with arrows accounting for their causal relations. There are three different kinds of nodes: hidden variables (orange boxes), measurement settings (green boxes) and measurement outcomes (blue boxes). **(a)** Bipartite LHV model. **(b)** Tripartite LHV model. **(c)** Tripartite

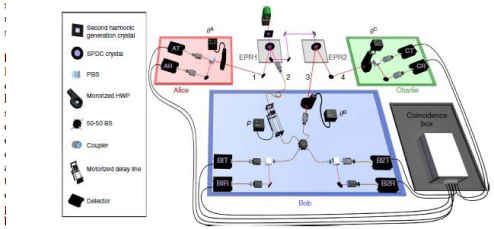
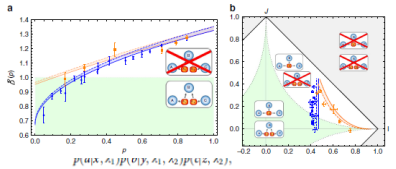


Figure 2 | Experimental apparatus for the violation of bilocal causality. Two polarization-entangled photon pairs are generated via Spontaneous Parametric Down-Conversion (SPDC) in two separated nonlinear crystals. Photon 1 (4) of the first (second) pair is directed to Alice's (Charlie's) station, where one of the local observables A_0, A_1 (C_0, C_1) is measured via a motorized half-wave plate (HWP) (angles θ^A and θ^C) followed by a polarizing BS (PBS). Photons 2 and 3 are sent to Bob's station, where a complete Bell-state measurement is performed. A 50/50 in-fibre BS followed by two PBSs allows to discriminate $|\Psi^-\rangle$ and $|\Psi^+\rangle$ when the HWP angle θ^B is set to 0 and discriminate $|\Phi^-\rangle$ and $|\Phi^+\rangle$ when $\theta^B = 45°$. A motorized delay line is adopted to control the amount of noise p in the Bell measurement, by changing the photons wavepacket temporal overlap in the BS.



About Polynomial Bell Inequalities…

Content

THE CONTENT

Make the story interesting: #2: use good quality writing style

"Transportation? What are you talking about? — I'm inventing roll-on deodorant."

THE CONTENT

Technique: use "**expository writing**" style

Content

A. The full text

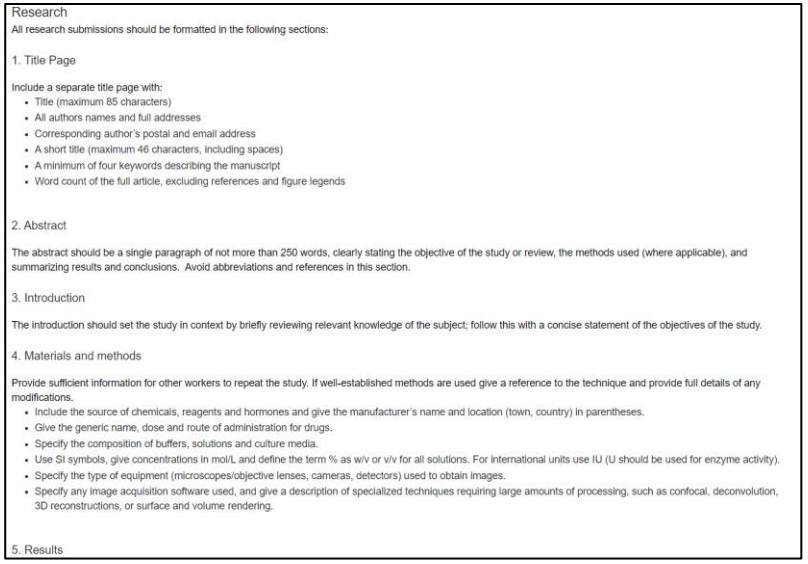
TOPIC SENTENCES (DESCRIBING THE **TOPIC AND OBJECTIVE**)
(usually the first two paragraphs of the Introduction)

SUPPORTING SENTENCES:

LITERATURE REVIEW (usually inside the Introduction)
METHODS
RESULTS

CONCLUSIONS

Author guidelines



Research

All research submissions should be formatted in the following sections:

1. Title Page

Include a separate title page with:

- Title (maximum 85 characters)
- All authors names and full addresses
- Corresponding author's postal and email address
- A short title (maximum 46 characters, including spaces)
- A minimum of four keywords describing the manuscript
- Word count of the full article, excluding references and figure legends

2. Abstract

The abstract should be a single paragraph of not more than 250 words, clearly stating the objective of the study or review, the methods used (where applicable), and summarizing results and conclusions. Avoid abbreviations and references in this section.

3. Introduction

The introduction should set the study in context by briefly reviewing relevant knowledge of the subject; follow this with a concise statement of the objectives of the study.

4. Materials and methods

Provide sufficient information for other workers to repeat the study. If well-established methods are used give a reference to the technique and provide full details of any modifications.

- Include the source of chemicals, reagents and hormones and give the manufacturer's name and location (town, country) in parentheses.
- Give the generic name, dose and route of administration for drugs.
- Specify the composition of buffers, solutions and culture media.
- Use SI symbols, give concentrations in mol/L and define the term % as w/v or v/v for all solutions. For international units use IU (U should be used for enzyme activity).
- Specify the type of equipment (microscopes/objective lenses, cameras, detectors) used to obtain images.
- Specify any image acquisition software used, and give a description of specialized techniques requiring large amounts of processing, such as confocal, deconvolution, 3D reconstructions, or surface and volume rendering.

5. Results

Content

THE CONTENT

Technique: use "expository writing" style

B. Each Section

1. **Topic sentences (e.g., one paragraph)**

   Describing the subject of the section

2. **Supporting sentences**

   Providing details about the subject:

   Go from more general (e.g. one or two paragraphs) to more specific (the remaining paragraphs)

3. **Concluding sentences (one or two paragraphs)**

Content

THE CONTENT

Each Section (e.g., the Introduction):

1. **Topic sentences (e.g., one paragraph)**

   1st paragraph

The accumulation of plastic debris in the ocean is severely affecting ocean and coastal ecosystems, as its ingestion and entanglement directly impacts marine life (Rochman et al., 2016). Recent research indicates that marine debris is a growing vector for the introduction of hitch-hikers species, with transoceanic rafting already likely intensifying species invasions worldwide (Carlton et al., 2017). The durability and persistence of plastic debris, the most abundant marine litter category, makes it as one of the most significant pollution problems our planet is facing today (Villarrubia-Gómez et al., 2018).

Refers the main topic

Is very general: planetary scale; all plastics

Gestoso et al (2019). Pasticrusts: A new potential threat in the Anthropocene's rocky shores. STOTEN, 687, 413-415

THE CONTENT

Each Section (e.g., the Introduction):

2. Supporting sentences (the remaining paragraphs)

2nd paragraph

(Hoffmann and Reicherter, 2014). Recently, 'rocks' of plastic composed by a mixture of melted plastic and natural sediments, the so called 'plastiglomerates', have been documented in beaches of Hawaii (Corcoran et al., 2014). These 'plastiglomerates' are described as the result of burned debris during campfire in which pieces of plastic are melted and become part of an agglomerate with other natural material when they solidify after cooling.

Refers the specific subject of the text:
(plastiglomerates (or plasticrusts)

THE CONTENT

Each Section (e.g., the Introduction):

2. Supporting sentences

plastic items against rocks (Fig. 1A, B). These plastic debris were found encrusting the texture of the rocky intertidal (thickness: 0.77 ± 0.10 mm, mean ± SE; n = 10) and forming variable crusts (in size and color) of plastic debris, that we are here coining 'plasticrusts' (Fig. 1C). Since our first apparently circumstantial observations of 'plasticrusts' in Madeira in 2016, we have confirmed its persistence through time. In particular, we have confirmed its increased coverage through time in a recent sampling performed in January 2019. Abundance of 'plasticrusts' reached a percent cover of 9.46 ± 1.77 (mean ± SE; data obtained through random deployment of 20 × 20 cm quadrats in the area affected by 'plasticrusts', n = 10) per square meter of rocky surface in the mid intertidal shore. Two different colors, blue

Details

THE CONTENT

Each Section (e.g., the Introduction):

3. Concluding sentences (one or two paragraphs)

Preparing the conclusion paragraph of the section:

These 'plasticrusts' may have effects on the surrounding fauna, as is usually sharing space with several common benthic invertebrate species (e.g. patellid limpets, barnacles or snails). Particularly remarkable was the presence of the littorinid gastropod *Tectarius striatus* around and on top of 'plasticrusts' (Fig. 1D, E) reaching similar abundances (8.5 ± 2.5 individuals per square meter, $n = 10$) to those found in surrounding non-affected rocks (10.2 ± 1.6 individuals per square meter, $n = 10$). This grazer usually feeds on diatoms

Relates the present results with others…

Makes the study more appealing and opens the opportunity for further research…

THE CONTENT

Each Section (e.g., the Introduction):

3. Concluding sentences (one or two paragraphs)

Last paragraph of the section:

Here, we describe a novel phenomenon of plastic pollution found in the coast of the volcanic island of Madeira (NE Atlantic), showing evidence for a hitherto unknown repository of plastics. Since 2016, rocks

Content

THE CONTENT

Make the story interesting: #3: be creative – go beyond the trivial

"Transportation? What are you talking about? — I'm inventing roll-on deodorant."

THE CONTENT

Make the story interesting: #3:

For instance, Piper Harron (Princeton U.) included sections for laymen:

Defining the Things

$$\boxed{\frac{N^{(i)}(X,W)}{N^{(i)}(X)} = \frac{N^{(i)}(U;X,W)}{N^{(i)}(U;X)}} = \frac{\lim_{Y\to\infty} N^{(i)}(\bigcap_{p<Y} U_p; X, W)}{\lim_{Y\to\infty} N^{(i)}(\bigcap_{p<Y} U_p; X)} \underset{X\to\infty}{\longrightarrow} \frac{\lim_{Y\to\infty} \prod_{p<Y} \mu_p(U_p)\cdot \mathrm{Vol}(\mathcal{R}_{1,W})}{\lim_{Y\to\infty} \prod_{p<Y} \mu_p(U_p)\cdot \mathrm{Vol}(\mathcal{R}_1)}$$

$$= \frac{\prod_p \mu_p(U_p)\cdot \mathrm{Vol}(\mathcal{R}_{1,W})}{\prod_p \mu_p(U_p)\cdot \mathrm{Vol}(\mathcal{R}_1)} = \frac{\mathrm{Vol}(\mathcal{R}_{1,W})}{\mathrm{Vol}(\mathcal{R}_1)} = \frac{\mu(W)}{\mu(\mathcal{S}_{n-1})}$$

2.1 The

Here's what I d

action which k

nant. Since we'

The serious stuff

The explanation for laymen

But Can You Make This Ridiculous and Feature Unicycles??

Alright, let's get ridiculous. You live in a town where there's an annual Cycling Clown-Capades Rally. From all around the region, troupes of cycling clowns show up to put on a cycling show using bicycles, tricycles, bicycles with training wheels, and unicycles. When the clowns are not performing, their velocipedes are kept in a high-tech warehouse with useful sensors and a computer that keeps track of data. Of course. The night before the big event you enter the warehouse to get the final numbers and everything is an absolute mess and your computer has crashed and is generally unhappy.

http://www.theliberatedmathematician.com/wp-content/uploads/2015/11/PiperThesisPostPrint.pdf

THE CONTENT

Make the story interesting: #3:

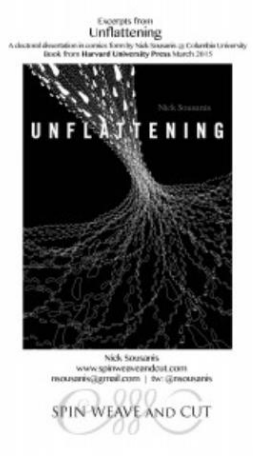
Anne Harris (Victoria U.) used video to complement her PhD thesis

Harris, Anne (2010) Cross-marked : Sudanese-Australian young women talk education. PhD thesis, Victoria University

THE CONTENT

Make the story interesting: #3:

Walter Sousanis (Columbia U.) made a graphic novel for his PhD…



http://spinweaveandcut.com/unflattening-excerpt/

Now that we went through some generalities, lets review the parts of the document

The title

THE TITLE

Short and objective:

- Max 2 lines
- Use key-words specific to the subject of the work
- Key-words facilitate the detection of our work in bibliographic searches
- The title is not the abstract – make it short!
- Must be appealing
- Use nouns instead of adjectives – facilitates the search
- Is made at the beginning of the work – so make it sufficiently general to allow some alterations…

The parts

THE PARTS

1. Objectives and scope of the work
2. Introduction (revision of the state of the art)
3. Methods
4. Case study
5. Results and Discussion
6. Conclusions
7. Bibliographic References
8. Other Annexes (if any)

Objective and scope

THE OBJECTIVE AND SCOPE

May be put in a devoted chapter or at the beginning of the introduction.

Should reflect clearly the objectives and the framework of the work:

- Identify clearly the objectives and the framework of the work
- Limit the objectives to 3 (if possible)
- The objectives are guidelines of the work, and if many, lead to great dispersion, or else repeat themselves
- Do not confound objectives with methods
- Use key-words related with the topic of your work

Introduction

(revision of the state of the art)

INTRODUCTION

The review of the state of the (RSA) art is for many the most difficulty part of a dissertations, mainly because:

- It is still unclear where to start it – in some areas the amount of literature is daunting…

- There are many questions about what you will find (if there are few works on the topic, if there are many, what keywords to use, etc.)

- The planned work has only some stated objectives, but the road to achieve them is still unclear – the RSA may help here!

- We hope to find many tips on how best to do our work, but we still do not know if we will

INTRODUCTION

What is it?

- It is a critical and organized discussion of the works carried out in a certain topic, with the aim of substantiating the work carried out by the author.
- It should frame the topic within the scope of the science where it is inserted, and in the evolution in time.

- It should answer the following questions:

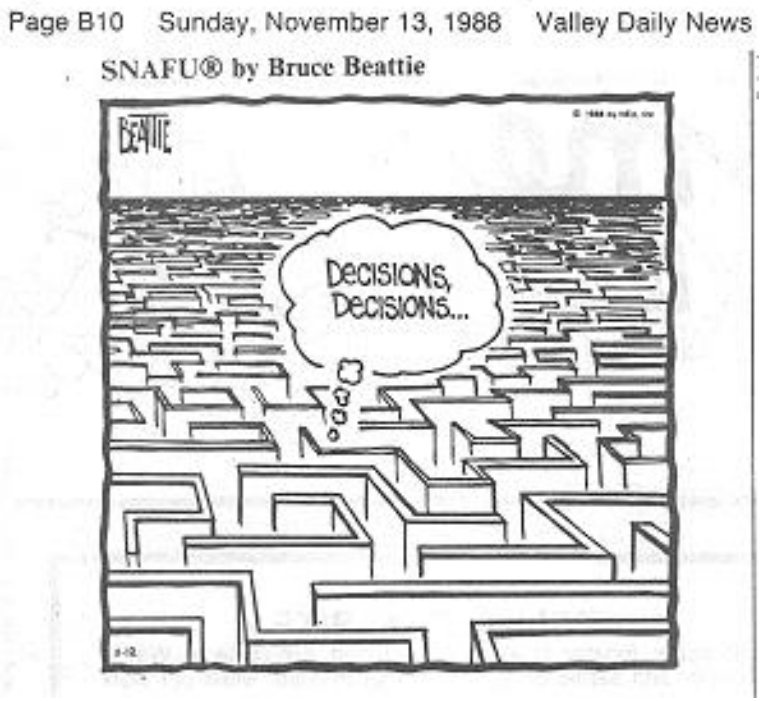
  - What is the origin of the first reflections on the topic and what are its fundamental works
  - How did thinking about the topic evolved over time?
  - What are the main issues raised by previous work?
  - What are the main results of previous works?
  - Where were they more successful and where are the main difficulties ?(opportunities for innovation)
  - What methods were used (key to choosing the best method)
  - What are the advantages and disadvantages of the methods used

The structure is that of a scientific text.

INTRODUCTION

How is it done?

How to begin?
What to look for?
How to read?
How to organize?
How do we know when to stop?
How to write?



INTRODUCTION

Getting Started: A Few Tips

- Make a list of keywords (start with the most relevant, three or four) - include "**review“**

- Enter these words into the bibliographic search platforms (e.g., Science direct; ISI Web of Knowledge, b-on, Scopus, Scielo, Google Schoolar)

  If you find a recent review on the state of the art on the subject, then the the work much easier – it sets the framework from where to begin; in this case the papers cited in the review should be read; then search for new papers published after this review.

If no review is available, or if it is outdated, then you will have to do the review from the beginning…

INTRODUCTION

How is it done?

1. What to look for?

- **The framing and history**

- If there is no review article, this can be done using a set of recent articles and read the **first part of the Introduction**

- I always read the articles in chronological order because it helps to understand how the subject evolved and what has already been tested and when. My reviews are very frequently also made chronologically.

- **The methods**

- There may also be review articles on methods, which makes it easier to revise and choose which one to use (if it has not already been chosen) - requires reading the Method section

INTRODUCTION

- **The results**

- Here you should seek information to compare with your results, so they must be objectively comparable - it requires **reading the Results** section.

  As you probably do not now yet what results you will get, the best is to do a ***Reading table*** containing: case-study type, methodology, measured parameters, some indicative values, authors, and name and whereabouts of the article.

- **The conclusions**

- Here we seek information to compare with our results, so they must be objectively comparable - it **requires reading the Conclusions section**

  See note above

INTRODUCTION

2. How to read?

- Revision is time consuming!

I recommend the following:

- During the search **the title** should be read, and based on this decide if the article should be downloaded to a specified directory

  Naming the files consistently is important to facilitate finding them later:

  I use: [First_author_name et al] [Journal_acronym] [date]

INTRODUCTION

How is it done?

2. How to read?

- Efficient Reading:
  - **Read the abstract**
    1. If this has relevant information **continue reading the article**;
    2. Underline and copy relevant parts into the *Reading Table*

INTRODUCTION

How is it done?

3. How to write?

- Although creative freedom is a fundamental principle of scientific thought, the way how scientific results are reported is relatively less free!

- **Adjectives** (e.g., significant, very, little, large, etc.) **should be avoided**;

- The author's *opinion must always be substantiated* - which is moreover the main objective of the review of the state of the art

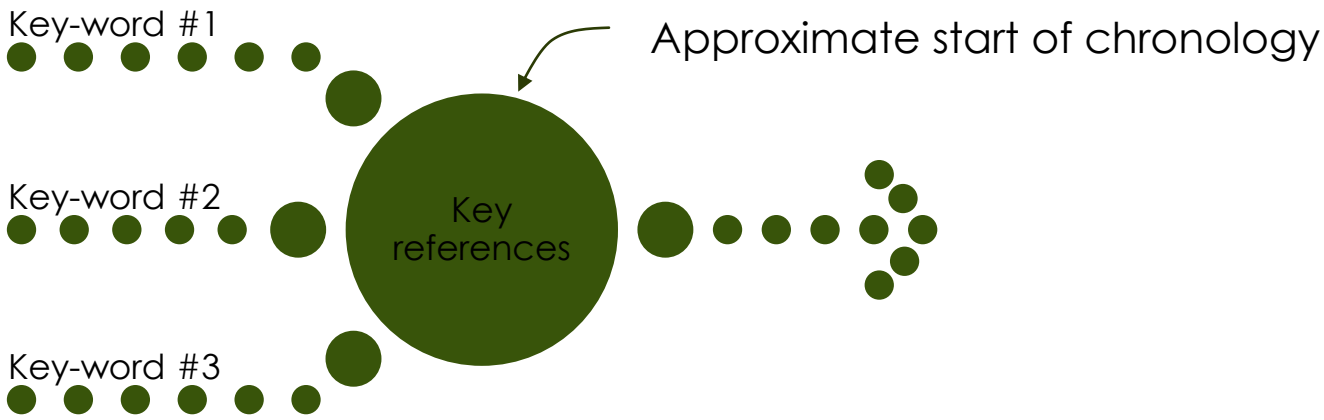
- Reading **texts written by others** helps you understand how to write the RSA as well as the other parts of the text.

INTRODUCTION

How is it done?

3. How to write?

- **Begin** with introducing the theme using the **oldest (and possibly earliest) references** as long as they make sense (they will be the ones with the highest number of citations)



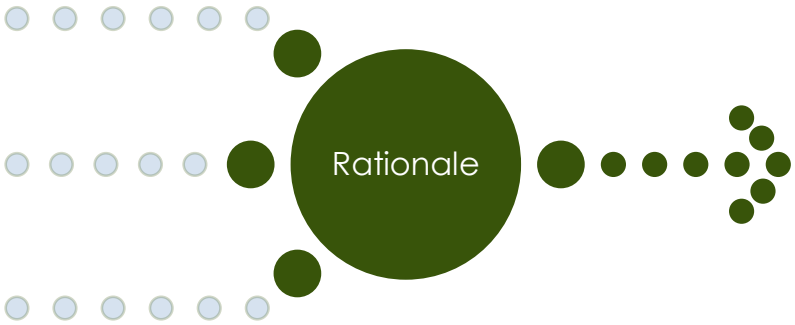
INTRODUCTION

3. How to write

- Rationale for the topic:

- How does the theme **fit** into science
- What is the **origin** of the first reflections on it and what are the fundamental works
- How did thinking about the theme **evolve** over time?
- What are the **main issues** raised by previous work
- What are the main **results** of previous work
- Where they were **successful** and where they were not (opportunities for innovation)
- What **methods** were used (key to choosing the best method)
- What are the **advantages** and disadvantages of the methods used

Use cronological order



Methods

METHOD

The Method must meet the following requirements:

- The **purpose** of this section is to allow **reproduction** of the work done in **exactly the same way** at any other time and / or by another author
- If it is innovative, then its necessity must be justified, framed in the context of the existing ones
- It must be **explained exhaustively**, or if it has already been published, that should be indicated, in which case the method can be presented in a shorter form
- Being intended to be **generic**, it should not contain data pertaining to the **Case Study**, unless it has been purposefully designed to treat a specific case
- If alternative **scenarios are compared,** they should be described here

Case Study

CASE-STUDY

The section describing the Case-Study should meet the following requirements:

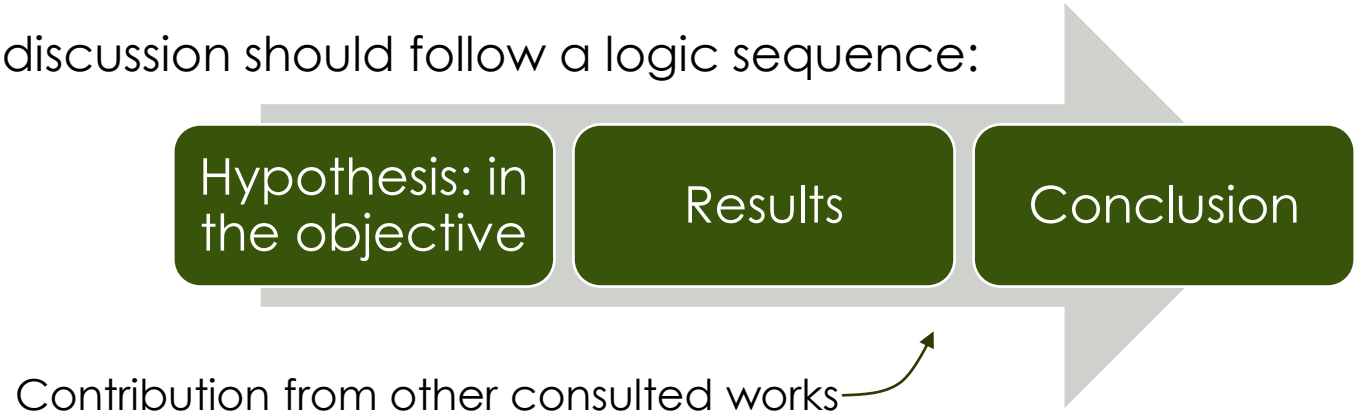
- Justification for its use;
- Describe in detail the object of the study, including a description and quantification of all parameters identified in the method with the required the level of detail.
- You can include exhaustive tables with information for the parameters, within reasonable limits (additional information should be included in Annex).
- Do not include information that is irrelevant to the study.

Results and Discussion

RESULTS AND DISCUSSION

The section describing the Results and Discussion should meet the following requirements:

- The results demonstrating achievement of the objectives should be highlighted through a more detailed discussion
- The discussion is made at the time of presenting the results, serving the figures and tables to illustrate and detail the discussion (do not show tables and figures before the discussion, nor replacing it)
- The discussion should follow a logic sequence:



Conclusions

CONCLUSIONS

The section describing the Conclusions should meet the following requirements:

- Show clearly that the **Goals** have been met

  I copy to this section the text that was written in the Objectives and then replace each one with the sentences showing its achievement - this guarantees that all the aspects foreseen in the work are contemplated in **the Conclusions**

- The **Objectives and Conclusions** are in many cases the only sections that are read from the work (see what is done in the Revision of the state o the art) and should therefore be very clear and complete

Annexes

ANNEXES

Annexes are not mandatory, except for the References

- Use a unique and complete style for making the list of References

  Consider using a reference manager, such as Mendeley or Zotero.

DISSERTATION PLAN

&

(MANY) NOTES ABOUT THE DISSERTATION

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