swissnex brazil

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A historia dos plásticos no mar (*The lifetime of plastics at sea*)

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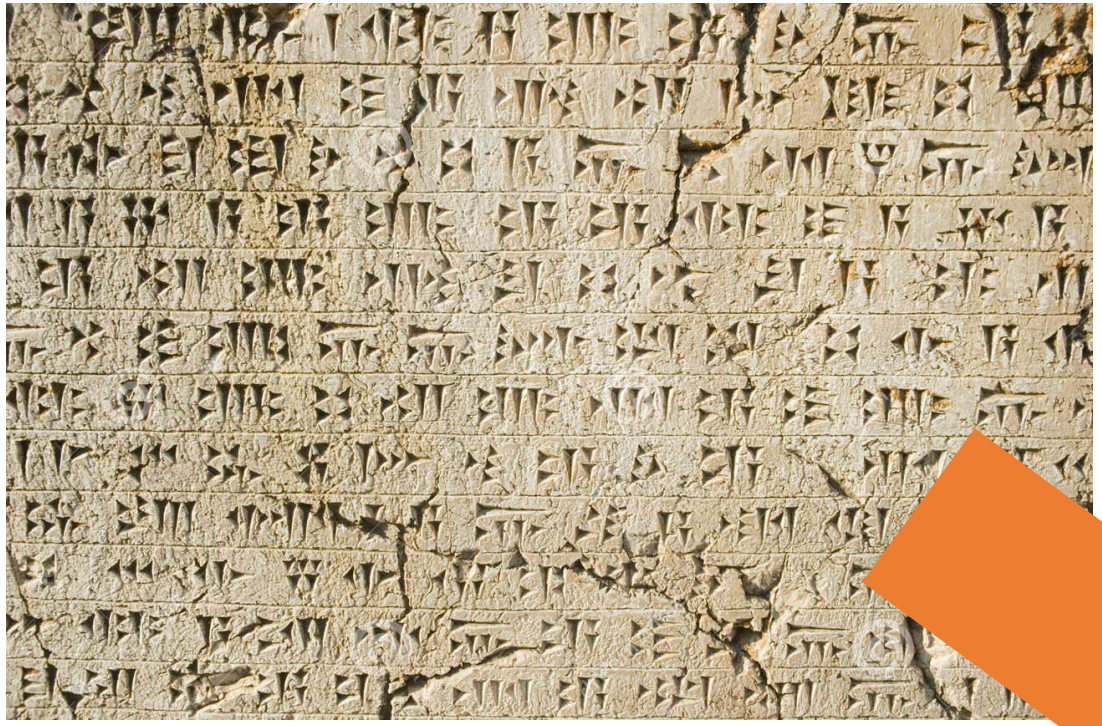
linhas do tempo (*timelines*)

The Stone Age did not end because humans ran out of stones. It ended because it was time for a re-think about how we live.

William McDonough



linhas do tempo (*timelines*)

- tempo cronológico (*chronological time*)

linhas do tempo (*timelines*)

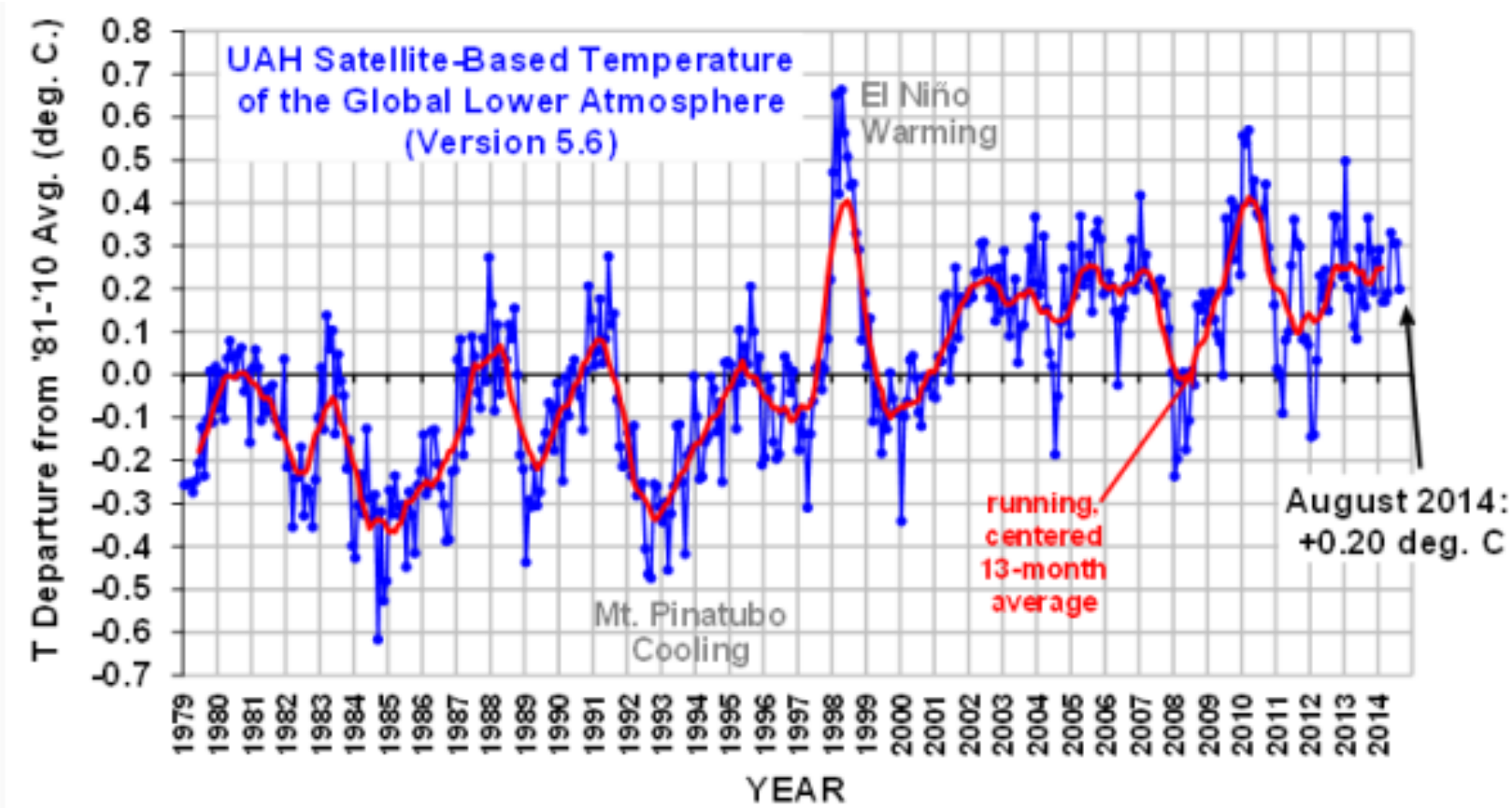
- tempo histórico (*historical time*)

linhas do tempo (*timelines*)

- tempo químico (*chemical time*)

linhas do tempo (*timelines*)

- tempo ecológico (*ecological time*)



linhas do tempo (*timelines*)

- Relatividade do tempo (*relativity of time*)

história dos plásticos (*the history of plastics*)

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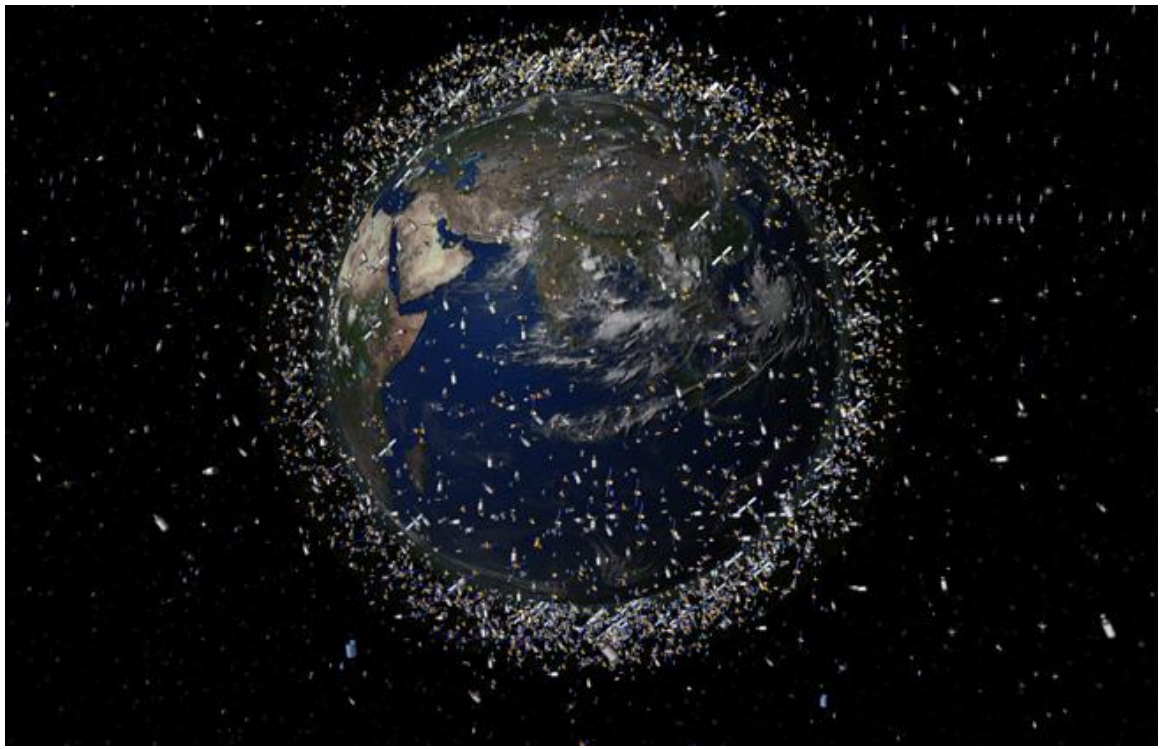
história dos plásticos (*the history of plastics*)

importância (*importance*)

His Holiness Pope Francis I at the UN

mudança de consciência (*change of conscience*)



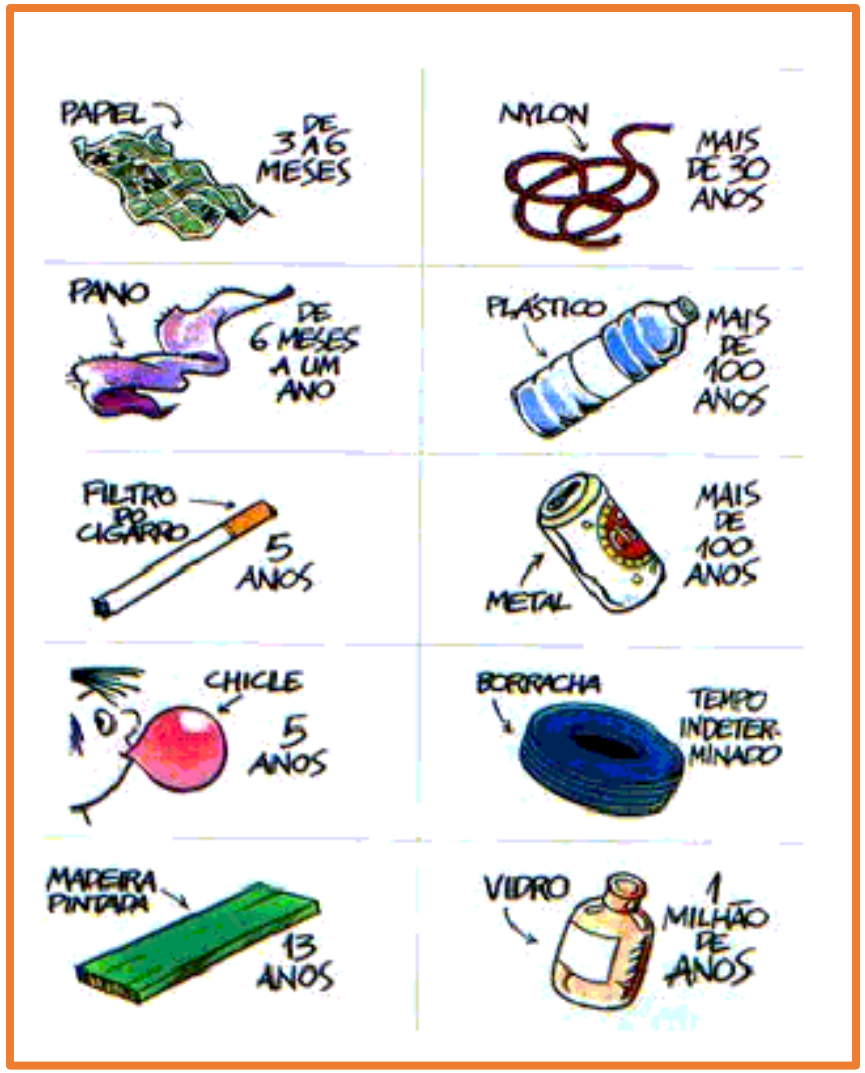
Plastisfera (*Plastisphere*)

mudança de valores
(*change of societal values*)

Durável
(*durable*)

Descartável
(*expendable*)

história de um lixo plástico – parte i (*the history of a plastic litter*) (*part i*)



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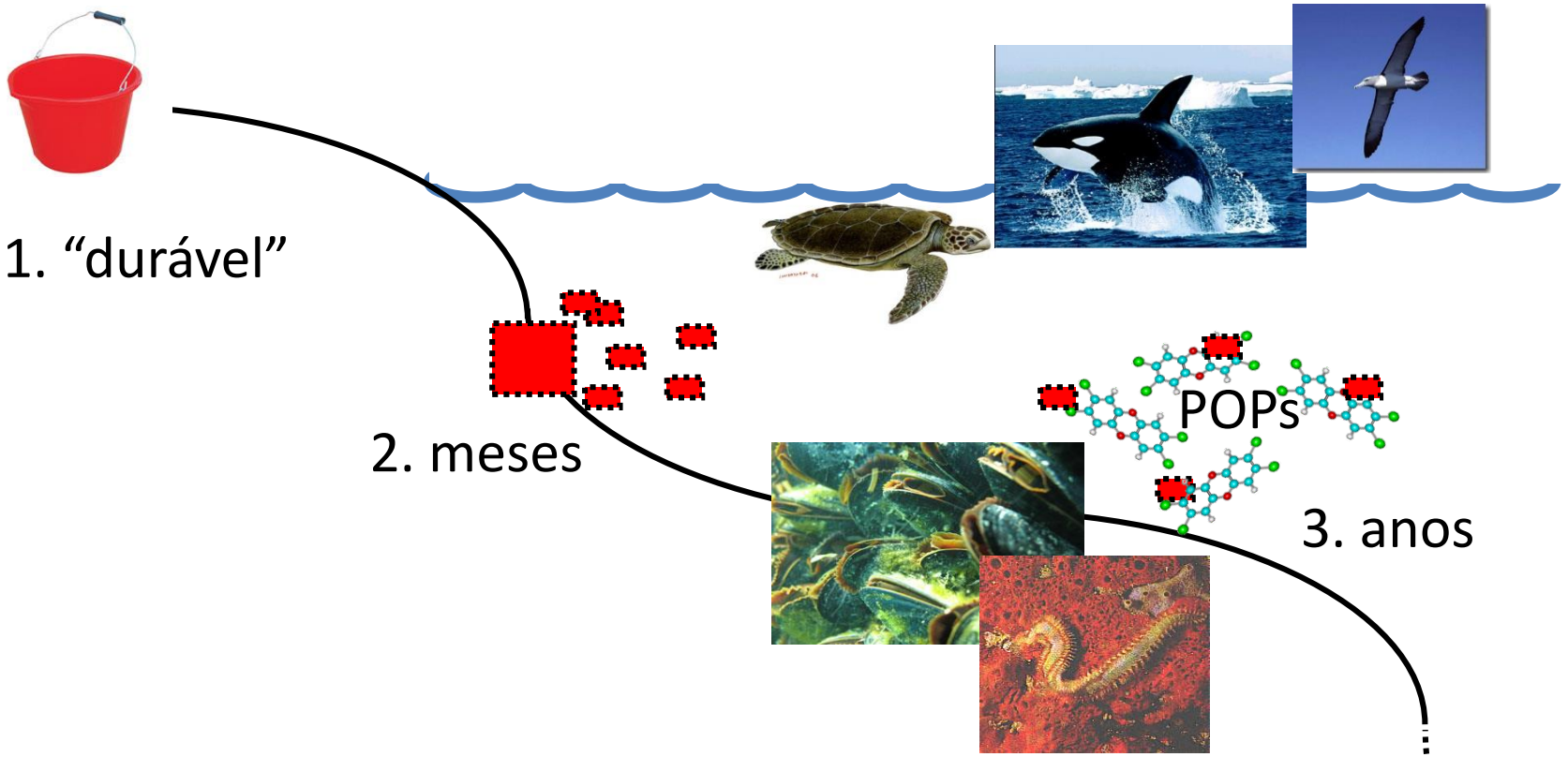
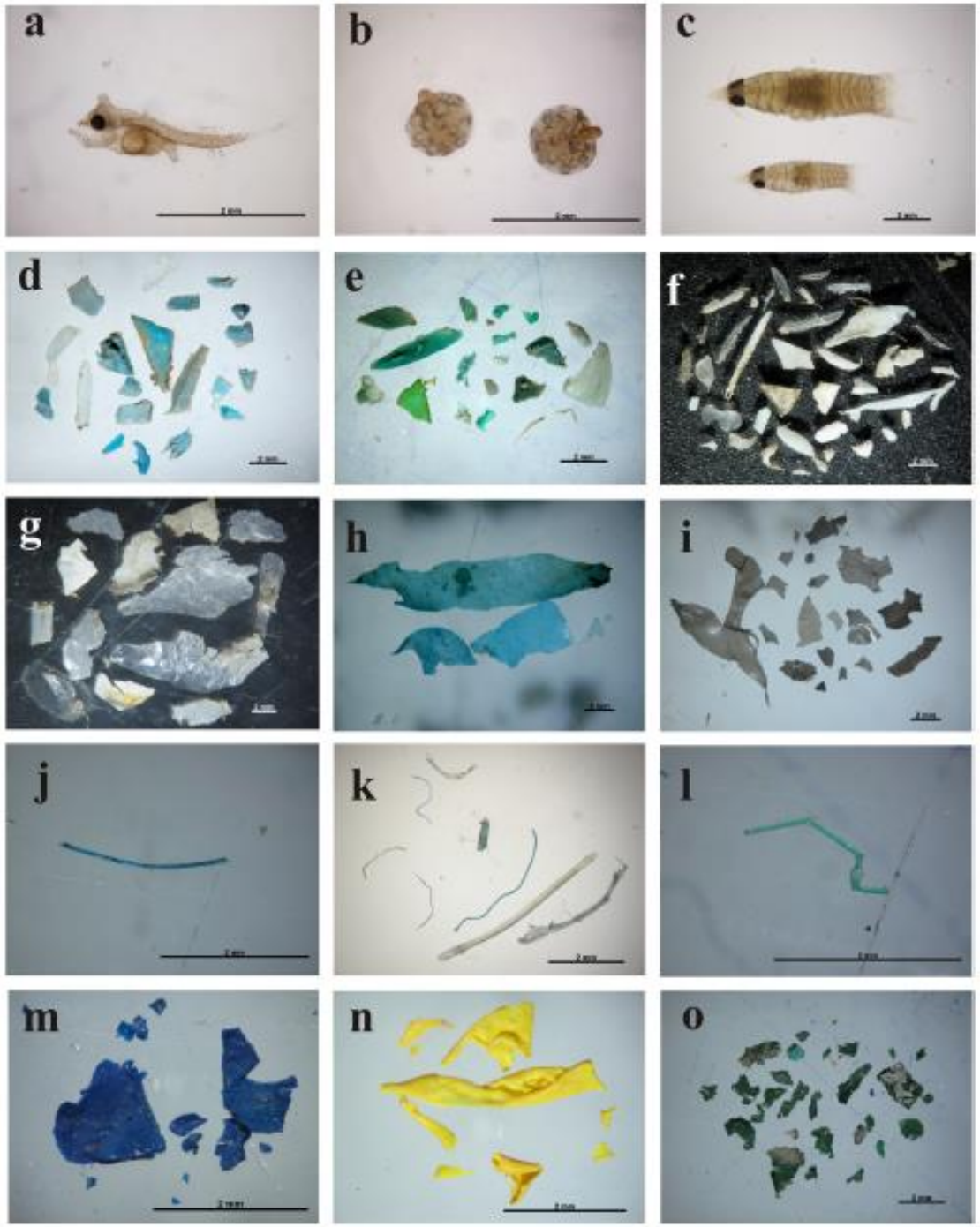
plásticos e microplásticos

história de um lixo plástico – parte ii (*the history of a plastic litter*) (*part ii*)

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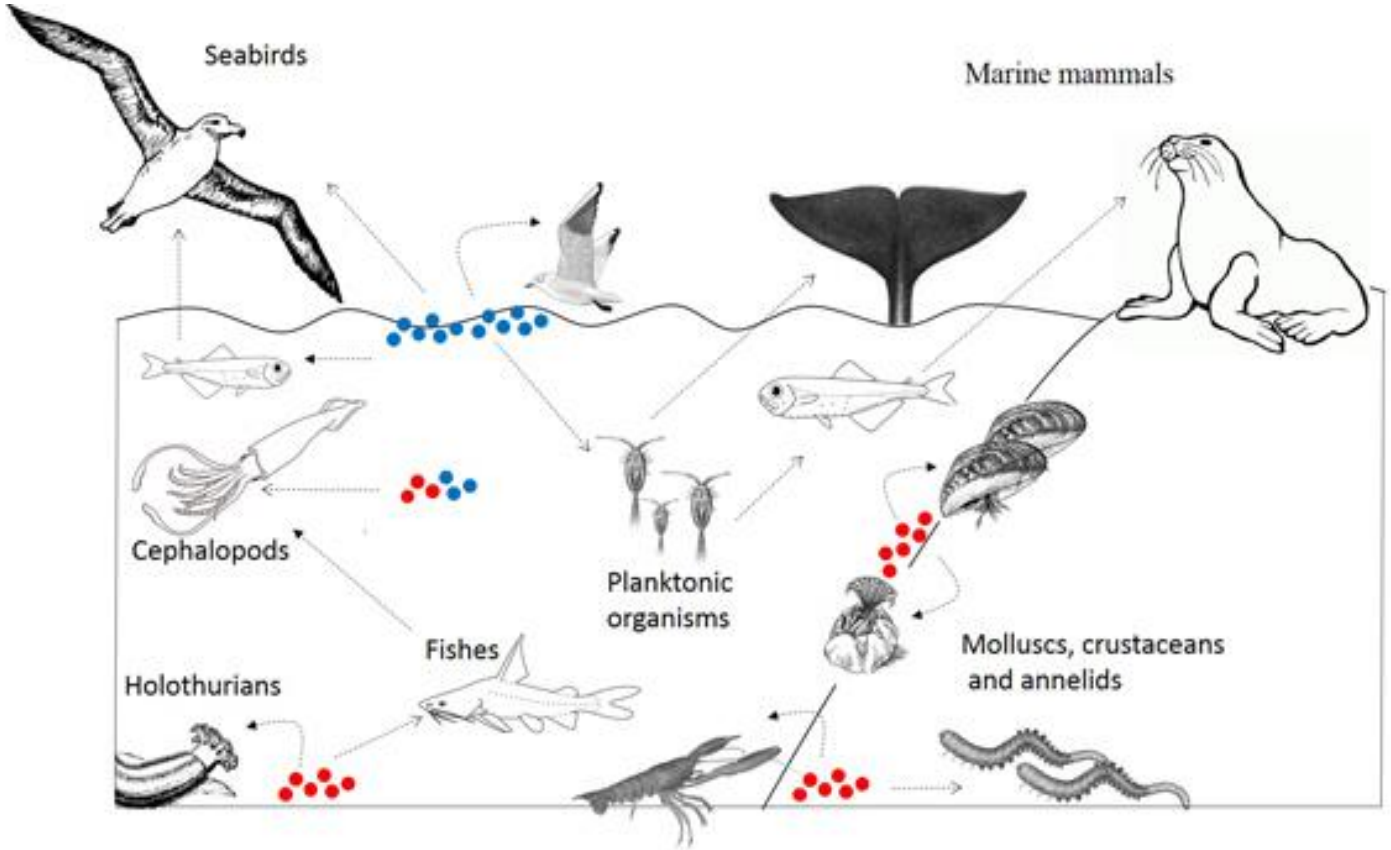
historia de uma ameaça (*history of a threat*)

- riscos e ameaças (*risks and threats*)
- contaminação e poluição (*contamination and pollution*)



Aumento da superfície de contato do plástico devido à fragmentação

20cm

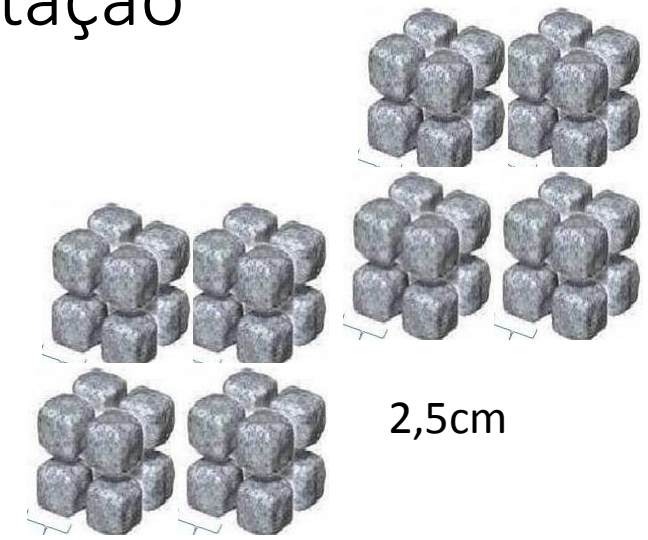
Área superficial:
20cmx20cm=400cm²
400cm²x 6 lados = 2400cm²
Volume: 20³= 8000cm³

Relação superfície:volume
2400/8000 = 0,3

10cm

Área superficial:
10cmx10cm=100cm²
100cm²x 6 lados = 600cm²
600cm²x 8 cubos = 4800cm²
Volume: 10³= 1000cm³

Relação superfície:volume
4800/1000= 4,8



2,5cm

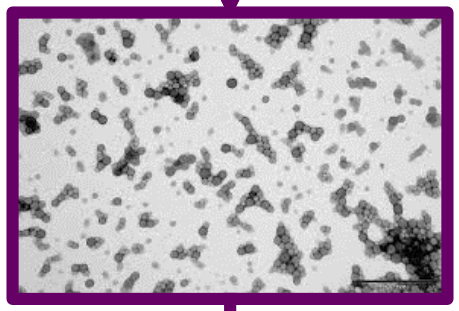
Área superficial:
2,5cmx2,5cm=6,25cm²
6,25cm²x 6 lados=37,5cm²
37,5cm²x 64 cubos = 2400cm²
Volume: 2,5³= 15,625cm³

Relação superfície:volume
2400/15,625= 153,6

Quanto menor o tamanho das partículas, maior a superfície de contato!!!

Criação do slide: **Oc. Sara Cavalcanti Wanderley de Siqueira, 2015**

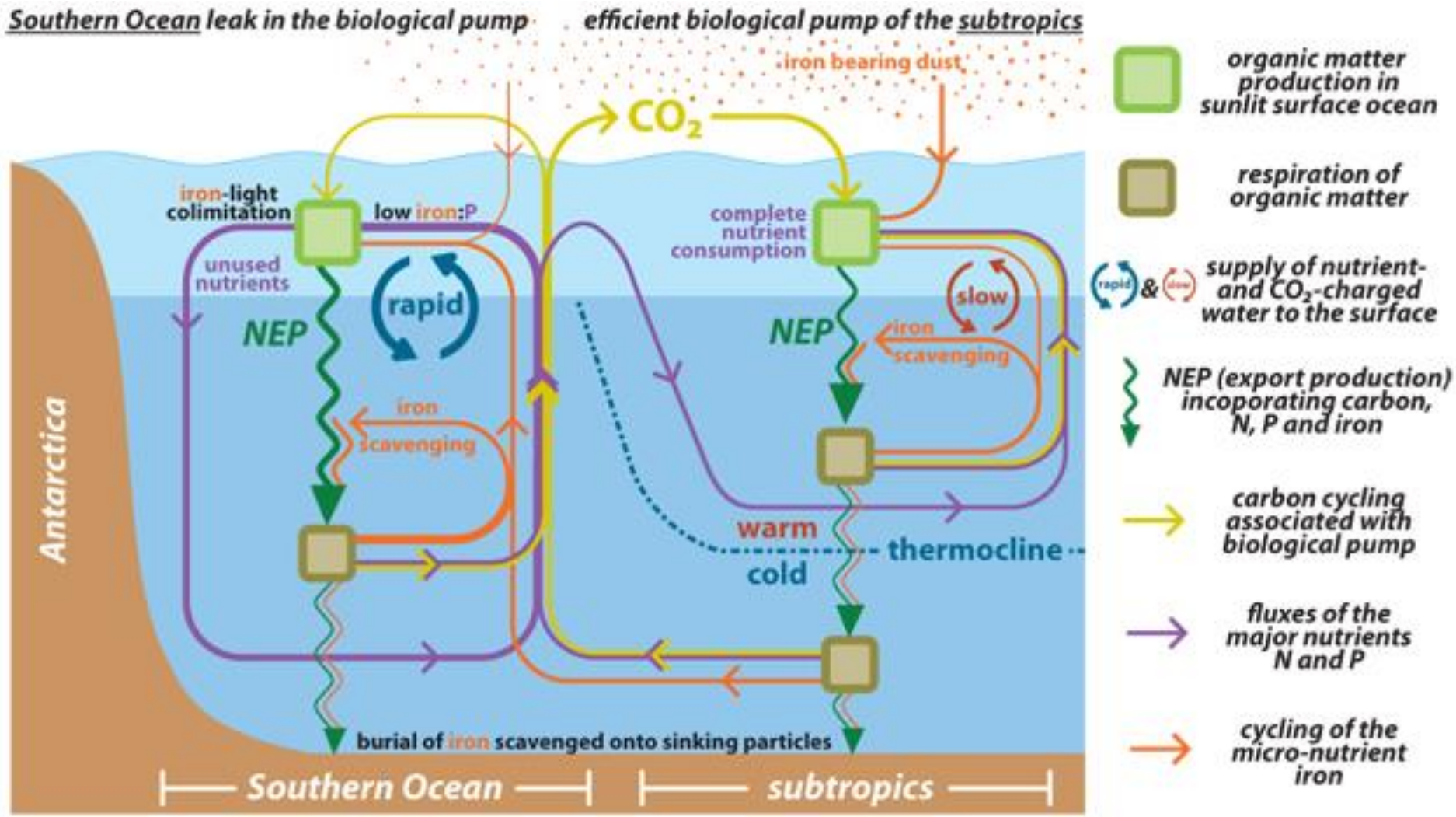
Microplásticos e nanoplasticos



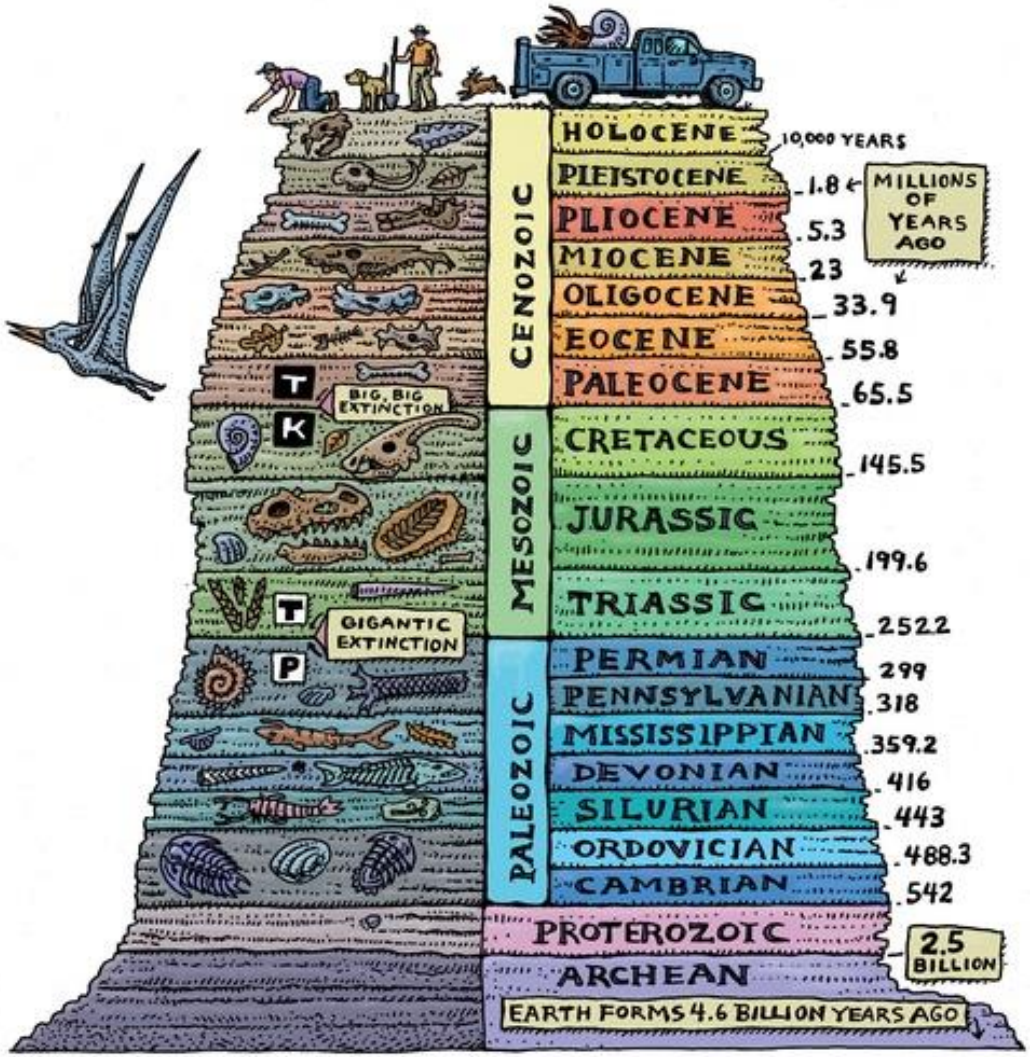
Bomba relógio (*Time bomb*)

Bert Koelmans

Fontes e destinos (*sources and sinks*)



Antropoceno (*Anthropocene*)



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Lee's emphasis

panel must generate and

"The real challenge is to raise public awareness about the risks of inaction."

Himalayan glacier melt

A shift in climate

The Intergovernmental Panel on Climate Change has done much to alert politicians to the effects of global warming. But to push climate change up the agenda, it will need to do the same for the public.

Hoesung Lee has laid out a vision for his tenure as the fourth chair of the Intergovernmental Panel on Climate Change (IPCC). The South Korean economist says that he wants to increase coordination between the working groups, work with more scientists from developing countries, boost interaction with the business and financial industries and expand the panel's influence by making its findings easier to digest. Above all, Lee says that he wants to be remembered as the man who shifted the panel's focus towards solutions. Those are all worthy goals, but the organization that assesses — and in some senses oversees — the world of climate science is well placed to do a lot more.

The basic science underlying climate change has been firmly established, and we now know much more about not only the threats posed by a rapidly warming world, but also the options humanity has for changing course. Even though the commitments that have been proffered going into the United Nations climate summit in Paris at the end of next month are generally tepid, the governments of the world by and large recognize the problem and know that they need to act. What else can the IPCC do? The answer is plenty, and Lee's emphasis on solutions is one piece of the puzzle.

Most of the world's major emitters — rich, poor and in between — have offered commitments and policies to move their countries in the right direction. Without concerted action in the decades to come, however, these commitments will fall well short of what the best science suggests is needed to achieve the formal goal of limiting the rise in global average temperatures to 2 °C. Political leaders are leaving the hard work for later, and could well be committing future generations to more warming than anybody wants to experience.

This is partly because of a lack of political leadership and of active opposition by entrenched industrial interests, as environmentalists argue. But it is also evidence of the vastness of the challenge. It is not easy to transform the global economy and industrial base for a large and growing population, much of which is still mired in poverty but wants access to the modern conveniences that so many on the planet take for granted. The world needs a full suite of technologies that are not only cost-effective but also socially and politically viable. Here, the IPCC has a particular part to play.

The weak commitments going into Paris are also evidence of a disconnect between scientists, who think that the evidence speaks for itself, and citizens and policymakers, who have a lot of other things on their minds. The IPCC is looking at bringing science writers and graphics experts on board in an effort to improve its reports. A linguistics study published earlier this month showed that the IPCC summaries for policymakers score low in terms of readability, and recommends that key panel members receive science-communication training (R. Barkemeyer *et al. Nature Clim. Change* http://doi.org/79f; 2015). All this makes sense, but communicating the science more clearly is just the first, and a relatively minor, step.

The IPCC's reports are aimed mainly at — and written in coordination with — governments, yet politicians at the very highest levels are already talking about climate change. The unfortunate truth is that taking steps to combat climate change is way down the political agenda, and that makes more aggressive action difficult. The real challenge is to raise public awareness about the risks of inaction — as well as the benefits of action — and to identify policies that can pass the political litmus test.

Here, as Lee himself has said, the IPCC has an important role. The panel must generate and incorporate knowledge about how information filters through society and about the kinds of policies that are most likely to work. This is the domain of sociologists, psychologists, anthropologists and political scientists, and they must be an integral part of the IPCC's sixth assessment.

"The real challenge is to raise public awareness about the risks of inaction."

The IPCC has had its controversies, including a glitch in its 2007 projection for Himalayan glacier melt and this year's resignation of former chairman Rajendra Pachauri, who faces — and denies — accusations of sexual harassment. But the challenges that face the panel today are in many ways a result of its success. Much ground has been covered; the challenge now, for both researchers and the IPCC, is to adapt and to identify research that will help policymakers to bridge the gap between what they say they want to do and what they are actually doing. ■

After Asilomar

Scientist-led conferences are no longer the best way to resolve debates on controversial research.

In 1975, some 140 scientists met at the Asilomar resort on California's rocky Monterey Peninsula to discuss the nascent science of mixing DNA from different organisms.

Until that point, researchers had deliberately not performed the final steps of such experiments, owing to concerns about safety and ethics. Over three days of discussions, the conference attendees agreed to voluntary restrictions on recombinant-DNA research, and drafted a document that listed the potential risks of such experiments and how to carry out the work safely.

The meeting is seen as the first time that science had regulated itself — effectively avoiding government intervention — and assuaged public fears by addressing biosafety concerns head-on.

Today, no scientific controversy is complete without calls for an

...obrigada.

... *thank you.*