

Dive In!
Creating interpretation with intent
Lessons from an experiment in museum visitor behaviour change

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On behalf of University of St Andrews Libraries and Museums

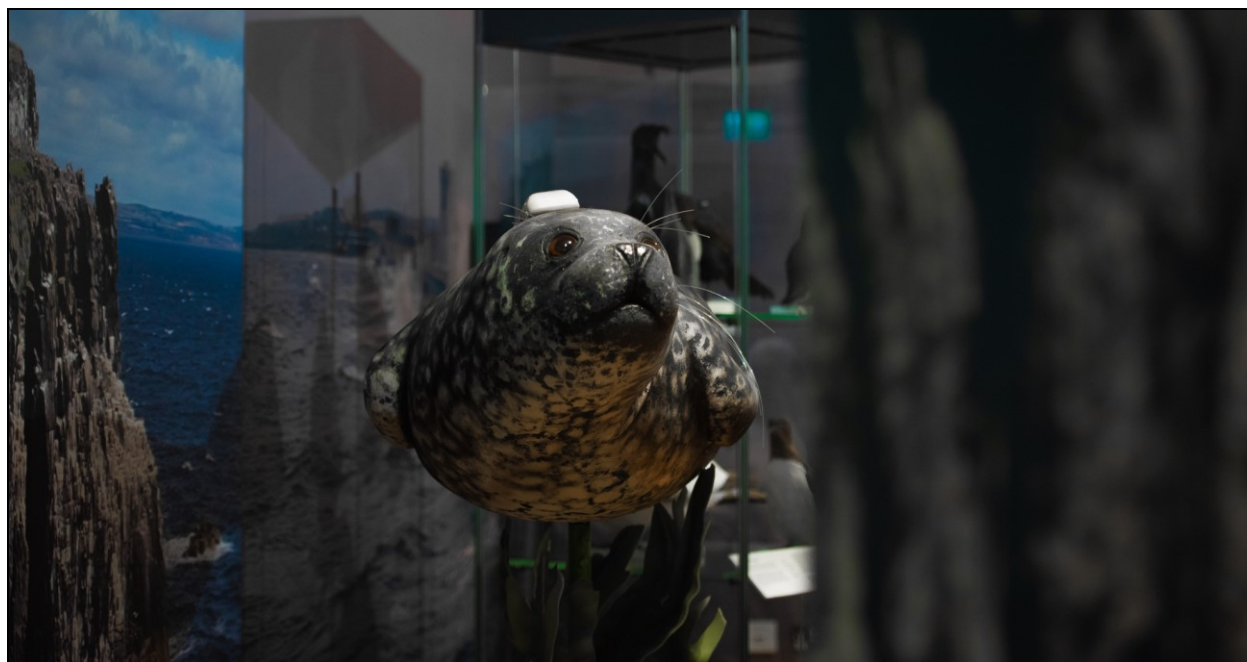


Image by Gayle E McIntyre © The University of St Andrews.

Introduction

Dive In! Protecting our Ocean was a temporary exhibition at the Wardlaw Museum at the University of St Andrews, Scotland. It was open from 8 October 2021 to 30 January 2022. Programmed to take place while Glasgow was hosting the COP26 international climate change conference, this display had an explicit and unusual aim – not only to influence what visitors *think* about the ocean and climate change, but also to influence what they might *do* as a result of visiting. The Museum intended for visitors to consider how their own behaviours and actions impact what happens in the ocean, and to appreciate that what happens in the ocean affects us all. Ultimately, the project aimed to create behaviour change in visitors. This 'normative' goal is relatively rare for museums, and therefore offered an opportunity to reflect on if and how exhibitions can be the right 'environment to engage' on the ocean, climate change and pro-environmental behaviours.

The exhibition was supported by [Museums Galleries Scotland](#) and the [Calouste Gulbenkian Foundation](#).

This case study summarises what the visitor evaluation of the exhibition revealed, in turn shedding light on how exhibitions can engage visitors around pro-environmental behaviours.

Executive summary of findings

Our experimental exhibition has shown that museums have the potential to act as sites for behaviour change that support environmental sustainability. Visitors see museums as having a role to play as positive agents of change, and not simply passive or 'neutral' conveyors of knowledge and information.

Despite there being uncertainty among museum teams about how to invite museum visitors to make changes in their own lives after visiting an exhibition – crossing the line between 'education' and 'activism' – there is certainly a will amongst both museum staff and visitors for museums to make bold suggestions to their audiences, especially in relation to climate change.

Specifically, from making the *Dive In!* exhibition, we learned:

- The exhibition was generally well received and there is **tentative evidence of behaviour change**. Looking across the different evaluation metrics, visitor responses were **generally positive**.
- There is evidence to suggest that some of the **'building blocks' of behavioural change were provoked by the exhibition** – specifically in terms of visitors' knowledge and their intentions. It's clear that it has provoked thoughts and conversations in visitors.
- A wide range of **emotional responses** were reported by visitors, some seeing it as provocative/challenging, but a generally hopeful feeling amongst visitors.
- Visitors understand that a museum exhibition can't change the world - and won't change everything they do, but that it is right that **museums should be part of a wider conversation/debate around climate change** and that they ought to be attempting to provoke visitors, rather than simply 'educate'. To this extent many of the behavioural asks appeared to act as **prompts** encouraging or making more salient existing intentions. Where

visitors had a practical avenue available to execute a behavioural change the exhibition helped to turn intention into action.

- **Not all of our exhibition techniques were as successful as we might have hoped.** In particular the idea of inviting visitors to choose one of four ‘personas’ and to follow that character through the exhibition didn’t work in practice as clearly as we had imagined it. People seemed to notice the personas, but didn’t invest in following their journey through the exhibition. We weren’t able to encourage people to move around the space in one direction, but the narrative could be experienced in either/any direction. And given some of the constraints of the space, sound wasn’t managed as well as it could be.
- We found evidence that the **museum team had reflected on their own behaviour** – personally, professionally and institutionally, but the project team’s emotional journey was perhaps not as positive as that of our visitors. On reflection, and listening to our visitors’ feedback, we could have been bolder and gone further. More creative exhibit ideas could have been developed and the tone could have been more provocative. We recognise that in the end the exhibition perhaps played it a bit safe.
- The **follow-on survey was a missed opportunity** – the data pointed towards positive engagement with the behavioural asks but was based on a very small sample. With a larger sample, we might have had some really striking evidence of how *Dive In!* influenced actual behaviours.

The rest of this case study explores how we created the exhibition and went about establishing the findings above.

Planning process

The Museum brought together a range of staff (curatorial, learning, collections and visitor services) along with representatives from the Scottish Oceans Institute; exhibition designers and two external consultants – one advising on museum interpretation and another on environmental psychology and behaviour change – to form the core exhibition working group.

We wanted to build environmental psychology perspectives into the *Dive In!* exhibition. So, while the exhibition’s objects, messages and interpretive content were being developed, we also spent time working out how best to actively involve visitors in protecting the ocean and taking action on climate change.

The team used a questions-based interpretation planning process (Why? Who? What? How?) and [Generic Learning Outcomes](#) (GLOs) model for defining messages while also reviewing examples of other museum and environmental communication. We explored interpretative and psychological change theories before arriving at our own approach to encouraging behaviour change – a broad and holistic view of what change might look like for both the Museum and its visitors.

Exhibition overview

The displays took the format of a journey from the deep ocean – dark and distant – through various water depths, getting shallower, until it reached the coastline and dry land. The intention was that visitors might feel the story getting closer to their own experiences, becoming more relevant to them as the exhibition progressed (although we also understood that visitors rarely follow a planned route in an open exhibition space.) Faced with dozens of potential threats to the ocean – and a similarly wide range of potential solutions and actions people might take in our daily lives in reaction to them – the team decided not to bombard visitors with everything that marine science and behavioural psychology has to offer. Instead, they chose to highlight just one main threat/concern at each depth and a range of potential ways in which people could make manageable-but-meaningful changes in their own lives in relation to that threat. The aim was to create an authentically positive exhibition, rather than one laden with negative messages.

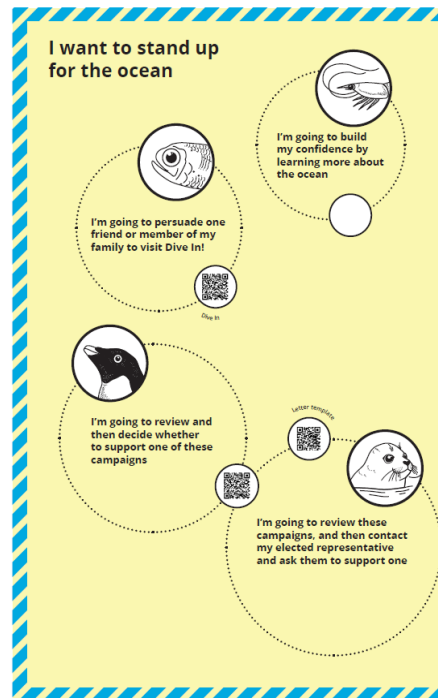
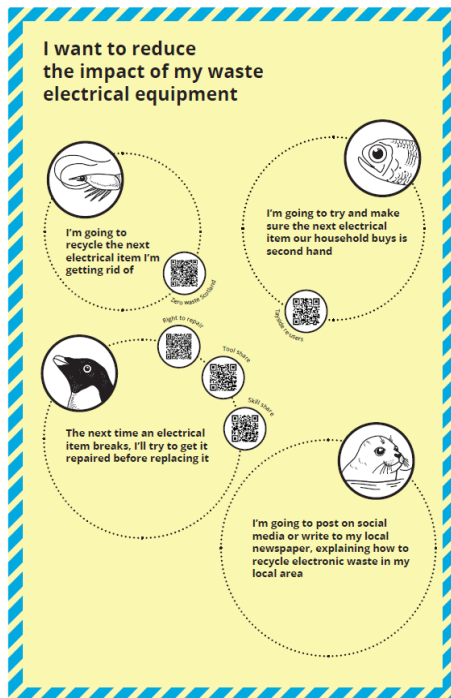
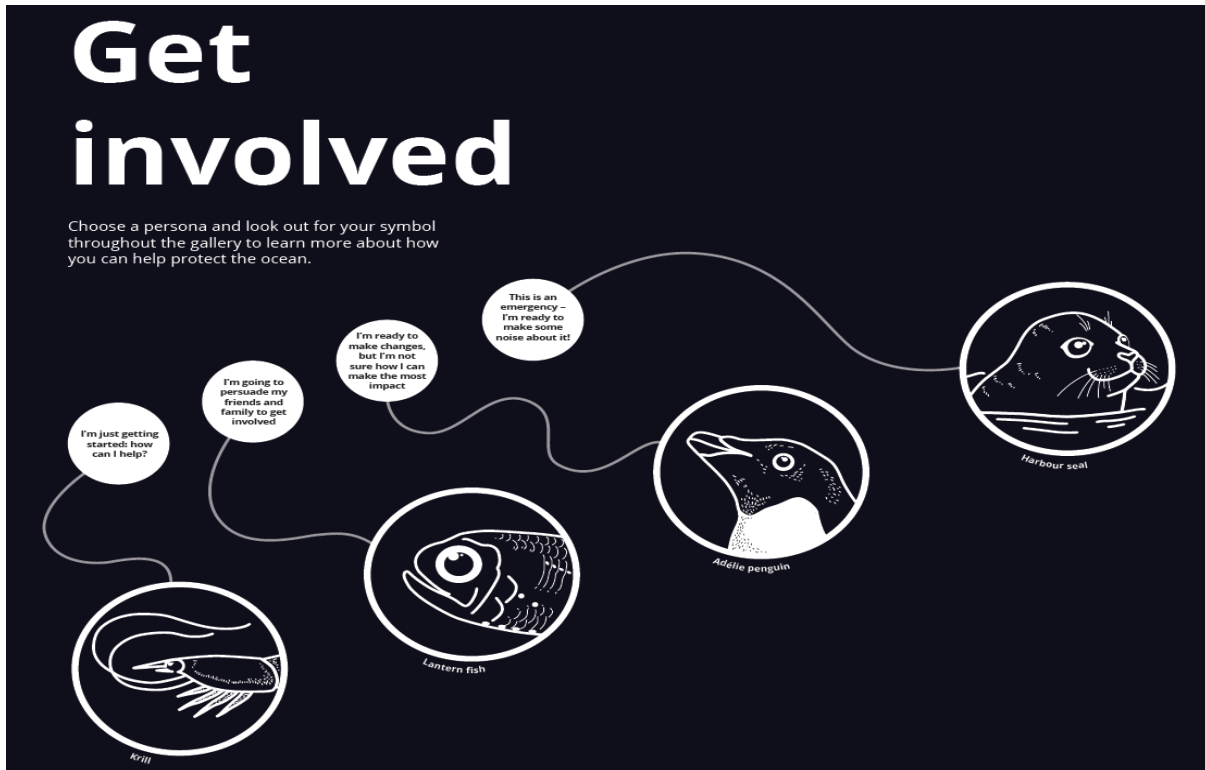
The exhibition contained a combination of museum collection items, graphics, digital and printed elements.



Exhibition installation images: Claire Robinson

Persona-led asks

To attempt a clean messaging structure, we developed an approach based on ‘personas’ and ‘asks’. The ‘personas’ – each sitting at a different point on a spectrum of engagement with climate change – were articulated as four different marine animals that visitors could follow through the exhibition. The seal icon, for example, was for people already doing a lot in relation to climate change in their own lives, but who wanted to do more and take it to the next level by connecting with their political representatives (we took a broad view of 'behaviours' that incorporated personal actions in the political sphere, not only 'behind closed doors' energy saving or recycling etc). The krill persona was for people who may be just getting started but who are keen to get involved in some way – the 'asks' associated with this persona were correspondingly less ambitious than those linked to the seal.



If visitors followed these personas through the exhibition, they could scan QR codes with bespoke behavioural asks at each stage. The idea was that the combination of engaging with the content about protecting the ocean in the exhibition, and also being provided with a set of 'tailored' behavioural asks to people with different levels of confidence and experience of action in relation to climate change, would create the right conditions to encourage behavioural change in visitors.

Behaviour change in museum visitors?

Beyond simply watching what people did (visitor observation) and measuring what people thought and felt (exit survey), we also wanted to attempt to measure what happened after visitors left the museum. Acknowledging that there are methodological challenges with attempting this, we chose to host some focus groups and also to run an online survey that would be promoted to exhibition visitors – both taking place a few weeks after their visit, with the intention of attempting to understand something of how people reacted to *Dive In!* We also undertook some internal reflection and noted anecdotal feedback about the exhibition.

Rather than simply asking visitors about what they did, or intended to do, we were also interested in what visitors thought and felt – their knowledge/the salience of certain behaviours, their attitudes, identity, sense of inclusion in the 'story' of *Dive In!*, their sense of agency/confidence, willingness to engage and perception of social norms around them. It is these constituent parts – what could be described as the 'building blocks' for behavioural change – that we were interested in interrogating as much as whether visitors acted on any of the asks in the exhibition (recognising that actual behavioural change is complex, and difficult to reliably monitor).



Image by Gayle E McIntyre © The University of St Andrews.

What we learned

The exhibition effectively showed how the ocean was connected to our lives

Visitors told us they were interested in microplastics and pollution as problems facing the ocean – which we expected, given the media attention plastics have received in recent years.

They also told us that even though some of the elements in the exhibition were new to them – in particular, how deep-sea mining and the raw materials in our mobile phones are connected – they also were able to make emotional connections with this content.

“What we now know about how we need to protect our environment, to then go and mine the deep seas seems incredibly shocking to me. I’d only heard a little about this before the exhibition.”

“I liked the fact the exhibition wanted to establish some sense of ownership of the ocean which is difficult to do”

Some exhibit elements were more successful than others

Visitor engagement with exhibition content tended to drift off as visitors moved through the exhibition, but we witnessed visitors engaging to a generally high level. Some people found the sonic elements included in the exhibition competed for their attention in a small space – looped videos and sound projections in the space. Visitors told us that they weren’t always clear about what they were hearing, which was a barrier to engaging with those sounds. The most successful element was a simple interactive based around a restaurant menu where visitors were invited to select items based on how much impact they might have on the oceans – visitors liked the fact that it was playful and thought-provoking.

The personas concept didn’t work as well as hoped

Our observations and conversations show that visitors didn’t stop and identify with one particular ‘persona’ at the start of the exhibition and follow it through the display – some noticed they were present, but didn’t then pursue them as a thread to their visit in the exhibition. In fact, people tended not to remember if they identified with any of the personas. For some the persona concept was a strong enough hook to engage their attention, but a few weeks later, there was little evidence of people remembering them.

The exhibition designer put effort into making the persona icons as attractive as possible. But these perhaps ended up being too ‘cute’. Visitors told us they thought the icons were aimed at children, not everyone.

That’s not to say that customising the behavioural asks we might make of visitors can’t work in an exhibition. Our personas concept was really a ‘means to an end’ – a way to try and tailor our behavioural ‘asks’ appropriately. But visitors simply didn’t engage with the asks through a matched persona in the way we imagined. On reflection, we feel we could have done more to draw visitors’ attention to the four personality types at the start of the exhibit – e.g. by inviting them to take something, scan something, say something, do something as they arrived, to engage them early on or be bolder with our articulation of how the persona idea might work for them. The persona invitation could have been stronger, more interactive and more engaging from the start.

The take home messages needed to be clearer

Visitors told us that they would have liked to have seen a simpler (more impactful) message coming through in the exhibition – something bolder, even provocative, that reflected the urgency of the environmental threats facing the ocean.

"I hoped to come away with the feeling 'this is what the oceans do for us and this is why I should look after it and do my bit'. To some extent I got that but I couldn't think of one item that told me this, it seemed to be such a huge subject."

"I was aware of lots of what the exhibition was trying to say. If it had gone one further, it could have had more impact."

In light of the challenges encountered around visitor engagement with the personas, perhaps a similar (i.e. simpler and bolder) approach could also have been applied to the personas.

The behavioural asks received a mixed response

We intended to create behavioural asks that we thought were reasonable and achievable for different types of visitors. But we knew that for some visitors, some of the 'asks' would have been pitched too low. Indeed, visitors told us that they were already quite aware of sustainability, environmental issues etc and that for some, there wasn't that much new in the exhibition.

"A lot of the things that were listed in the exhibition were the kinds of things I already knew about sustainability."

However, the asks to use electronics for longer and to eat a more sustainable diet were generally seen as realistic and, in some cases, outside of what visitors might have expected/were already doing.

This feedback serves as a reminder that a one-size-fits-all approach to making behavioural asks of visitors will rarely work – so future projects seeking behavioural change in visitors might focus on ways to tailor 'asks' that audiences engage with more intuitively than the person-based approach in *Dive In!* The personas concept we developed might have worked more successfully if we'd been clearer with audiences about what we were trying to achieve.



Image by Gayle E McIntyre © The University of St Andrews.

We did see, however, some credible evidence of behavioural change

In the exit interview, 78% of visitors thought they'd do something differently as a result of visiting, 16% definitely so. And when we asked visitors again, a few weeks after their visit, many said they had either thought about something and planned to do it or actually carried out a new behaviour – in particular intellectual and social behaviours such as learning more and talking with others. Whilst this is only indicative, we can at least view this as a tentative measure of success.

Indeed, from some audience groups there was appetite for the exhibition to have offered more and clearer takeaway messages from the exhibition – campaigns to join, petitions to sign, opportunity to join a beach clean etc. Students were particularly vocal about this. There's reason to suggest that opportunities to contribute content – perhaps a place they could make pledges or leave ideas – could have been a good addition.

There was also some evidence of positive changes in the 'building blocks' of behavioural change among visitors

When it came to actions in their lives, visitors told us that the exhibition positively reinforced their existing knowledge and/or intentions. Responses to our questions indicated that there had been some shift in their knowledge – people tended to move themselves up the scale from beginner to intermediate to expert as a result of visiting.

There is also evidence to show that a range of emotions were provoked as a result of visiting – from people feeling challenged, angry and worried to curious, hopeful, inspired and motivated. Exit interviews show that around a quarter of visitors were feeling generally positive after visiting, and around a third were left curious or wanting to learn more (important because leaving visitors feeling motivated to act on the threats they had learned about, rather than fatalistic, was one of the exhibition's goals).

“I don't think it was panicky or negative in tone. Personally, I was expecting to be a bit more so. So, I don't think the worry would be about having it too negative. If anything, I think can probably trust people not to be freaked out by pushing it a bit more. I guess that gives it a level of interest too.”

The project had impact on the organisation and its staff/associates

Two reflexivity surveys were completed by the project team – one during the planning process and another once the exhibition had closed. As the project was being developed, respondents were motivated by making the issues of ocean conservation and climate change accessible and most indicated that they had already been passionate/cared deeply about protecting the environment before joining the project. There was also a sense of excitement and positivity about focusing the attention of a university/museum exhibition on pro-environmental behaviour change. Although emotions such as frustration and sadness/anger were expressed (about the subject matter), most respondents indicated that the balance between hope and fear which the *Dive In!* exhibition aimed for had also given them a sense of cautious optimism and empowerment/agency.

As the project closed out, respondents indicated that they were pleased (and in some cases proud) to have been part of the *Dive In!* project team, because of their interest in the exhibition content but also as a prompt to consider their own environmental choices and decisions. The team experienced a mixture of emotions – not everyone felt as motivated at the end of the project as they had done at the start when team conversations had been focused on the possibilities for the exhibition (not all of which came to fruition) and ahead of COP26. However, one respondent said (in relation to their own motivation around climate change/environmental issues) “I think before working on the project I felt quite helpless in what I was actually able to achieve, but working on the exhibition has proved to me that all hope is not lost!”

A key challenge noted by several team members was around what might be termed the ‘naivety’ of some of the behavioural asks/actions – that they didn’t take account of how awkward/difficult it can be to start conversations with a shopkeeper or member of waiting staff about the provenance of seafood.

Visitors see museums as active agents of change

The visitors we spoke with strongly believed that museums can be centres for education and for promoting change in our world– that they are the right places for engaging people with environmental behaviours. The exit interviews also underscored that visitors are comfortable with – perhaps even expect – exhibitions will take a stance and ask something of their visitors.

“Museums should provoke and trigger thoughts and evaluation but also gives instructions/guidance on how to deal with the new thoughts and where to read more.”

“A museum is one of the places that has almost an obligation to raise the actions people can take. They are backed by research and when research backs up the claims there needs to be a clear message about what people can do.”

People recognise that while museums have a role in contributing to behaviour change, provoking and suggesting what visitors might do in their lives, they do not act alone.

“A museum is a good place to get this across, museums generally don’t raise people’s hackles, not political, so the right place to have this conversation...recognising the museum’s role in society.”

“One visit to a museum may not make the change in me. It’ll be accumulative.”

What's next?

The environmental threats facing the ocean – including, although not limited to, climate change – are serious and urgent. Museums, like every other forum for connecting and engaging with public audiences, are starting to step up to the challenge. We hope this case study gives other museums confidence to take the next step and also for organisations outside the heritage sector who might be considering working with museums on such a project.

We learned plenty from making *Dive In!* but as the project came to an end, we found that we still had plenty of questions still remaining. In particular, we are still thinking about

- What other techniques might be used by museum exhibition planners to tailor behavioural asks to people with different levels engagement with environmental subjects?
- What might have encouraged visitors to engage more deeply with our 'personas' concept?
- As climate and environmental subject become more and more mainstream, do we in the museum sector have the skills, the knowledge and confidence to talk boldly about this subject with public audiences?
- What's the next subject that the Museums at St Andrews might tackle that seeks to be an agent of change in our world?
- How else might we investigate the longer-term impacts of exhibitions on visitors?

In addition to this case study, we have produced an [interpretation guide](#) – a list of broad conversation points for museums interested in creating content that seeks to encourage behaviour change in visitors in relation to the ocean and climate change.

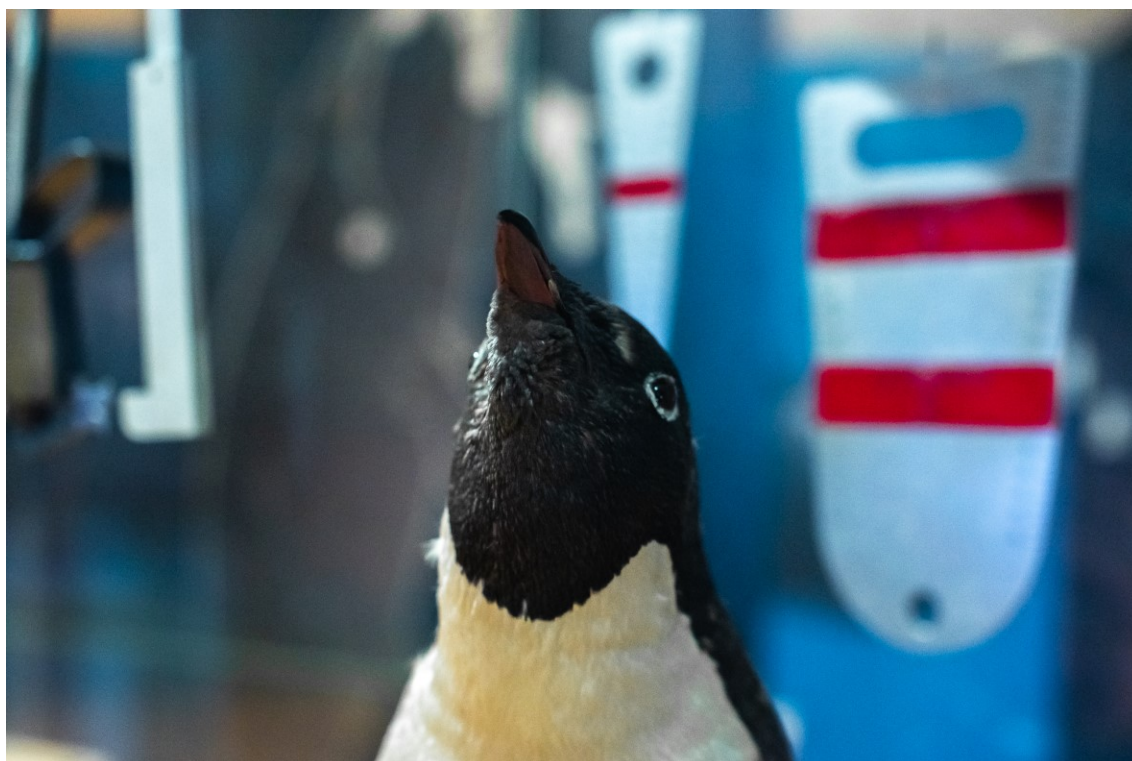


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