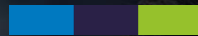


# TECHNOLOGY & THE GUEST EXPERIENCE

AT ZOOS AND AQUARIUMS:

Threat, Distraction or Opportunity



Hosted by Rod Findley – President CEO, Immotion

## IMMOTION

# Participants.



## **Rod Findley**

President & CEO, Immotion

## **Colby Sellers**

Director of Ancillary Operation & Guest Relations, Shedd Aquarium

## **Kristen Lukas, PhD**

Director of Conservation & Science, Cleveland Metroparks Zoo;  
Board Member, Dian Fossey Gorilla Fund

## **Chadrack Umunezero**

Conservationist, Botanist, Scientist, University of Rwanda  
Dian Fossey Gorilla Fund



# Immersive Experience.

IMM ITION



- Live Action 360° documentaries
- Synced with motion-based seat
- Placed in aquariums & zoos

# Immersive Content.

IMMOTION

TAKE FLIGHT



**FLIGHT**  
OF THE  
**MANTAS**

Dive with the gentle giants of the deep  
in the turquoise waters of Mozambique.

A 360° FILM EXPERIENCE

 360° FIELD OF VISION  4K VIRTUAL REALITY  CINEMA MOTION SEATS

IMMOTION PRESENTS AN EXCLUSIVE 360° PICTURE • FILMED IN SPECTACULAR VIRTUAL REALITY ON LOCATION IN AFRICA  
IN PARTNERSHIP WITH THE MARINE MEGAFUNA FOUNDATION

BRAVE THE ICE




**POLAR**  
ODYSSEY

A VR EXPERIENCE

 IMMERSIVE VIDEO  4K VIRTUAL REALITY  CINEMA MOTION SEATS




IMMOTION PRESENTS AN EXCLUSIVE PICTURE  
FILMED IN SPECTACULAR VIRTUAL REALITY ON LOCATION IN THE ARCTIC CIRCLE




FEEL THE WONDER



**DOLPHINS**  
*of the* **REEF**

A VR EXPERIENCE

WINNER  LAF A  POPPY JASPER  
LOS ANGELES FILM AWARDS 2015 INTERNATIONAL FILM FESTIVAL 2016 BIRTHDAY  
WINNER  LUMIERE  
The Associated Emerging Society

 IMMERSIVE VIDEO  4K VIRTUAL REALITY  CINEMA MOTION SEATS

IMMOTION PRESENTS AN EXCLUSIVE 4K VIRTUAL REALITY ADVENTURE  
FILMED ON LOCATION IN THE RED SEA

# Global Partners.

IMMOTION

Zoos, Aquariums, Museums & Other locations.



# Our Partners.

IMMOTION



Over **155** Partners Worldwide, including:

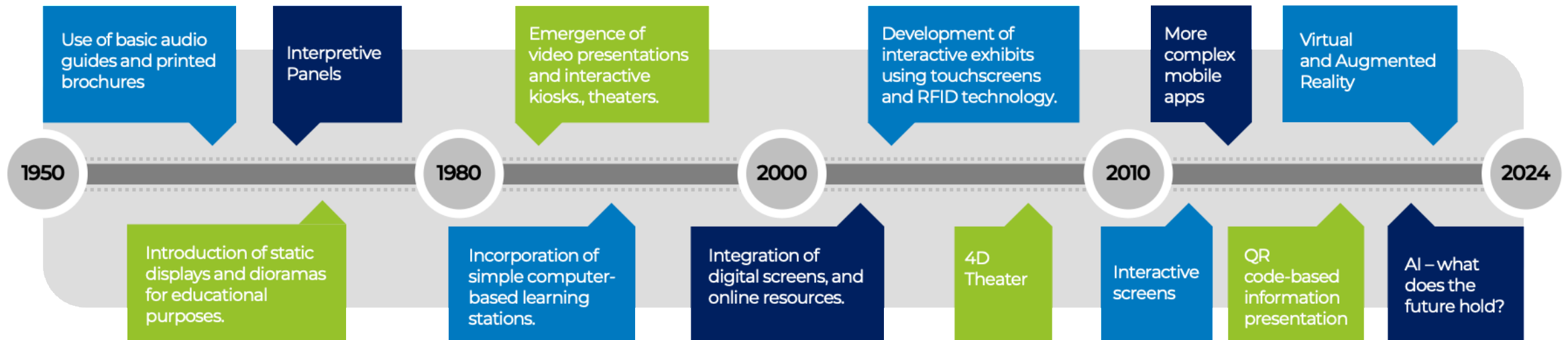


**Threat? Distraction? Tool?**

# Threat? Distraction? Tool?

- All three
- Like it or not, technology is here to stay
- How do we tame the beast?
- Can emerging technologies such as virtual reality (VR), augmented reality (AR), and AI-driven tools amplify the **educational mission** of the institution?

# Timeline Breakdown.



# Perception of Threat.

- Zoos and aquariums around the world under fire re: animals in human care
- It has been suggested that technology could entirely replace zoos and aquariums with a digital aquarium or a holographic zoo.
- How real is the threat?

# Digital Experiences.

National Geographic Encounter “Ocean Odyssey”. Digital aquarium (2019, NYC). Didn’t survive the pandemic and has not reappeared.



# Digital Experiences.

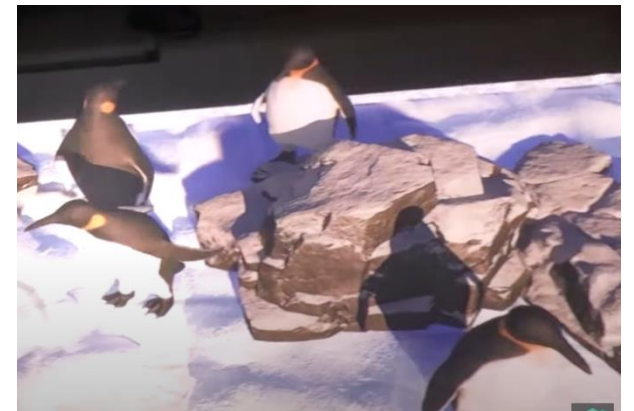
Zoo of the Future (2023 and 2025) Brussels

CG animals in a free roam environment. 30-minute experience.



# Digital Experiences.

Hologram Zoo (multiple locations) 30-minute experience using standard video projection with 3D glasses, paired with an arcade.



# Existential Threat?

- A virtual experience—no matter how well designed— rarely sustaining attention beyond 30 to 60 minutes.
- 1- to 4-hour immersive adventure.
- Zoos and aquariums are places of wonder, community, and connection to the natural world.
- If technology is presented as a gimmick there is no lasting value

# Or Opportunity?

- Threat? No
- Opportunity? Absolutely
- Careful analysis of guest experience and the mission of the institution
- Use of technology as tool to engage, not as gimmick.

# Unexpected consequences.

- Technology can have drawbacks.
- Often in ways we could not have predicted.
- Even innocuous AI fun can have an impact on the way people understand animal behavior.



# Guest Expectations.

- If guests now think this is real and natural
- Do we become inured to real experience?
- Does it make our job harder or spark interest that wasn't there?



Introduction of Immotion's Live Action Certification Seal



# On-Mission Engagement.

All institution's missions are different.

Engage and educate people about animals, the natural world,  
conservation.

# Guest Experience Pathway.

How are zoos and aquariums approaching guest engagement and education?

Can technology be employed effectively to deepen the guest experience?

## Traditional

### Conservation Action

Motivated, informed choices and support for conservation efforts

### Conservation Awareness

Understanding the impact and importance of protecting wildlife

### Context and Facts

Identification and contextual within environment

### Exposure to Animals

Seeing the animal in zoo/aquarium

# Emerging Technologies.

There are three tracks of emerging technology.

All are different, can be utilized together or separately:

- 1. Overlay Technology**
- 2. Personalized Technology (AI)**
- 3. Immersive Technology**

# Shedd Aquarium.

## **Colby Sellers**

Director of Ancillary Operation & Guest Relations, Shedd Aquarium

# Shedd Aquarium.



## How Our Virtual Field Trips Operate

Live from Behind the Scenes virtual field trips are interactive digital experiences that bring animals and the staff members who care for them to a school classroom to inspire students with real examples with science.

# Shedd Aquarium.



4D Experiences in SimEx's brand new Immersion Theater

# Shedd Aquarium.



Augmented Reality Pre-show

# Shedd Aquarium.



Undersea Explorer VR Experience

# Shedd Aquarium.



QR Codes and Humans Side-by-side

# Overlay Technology

## AR

- Existing technology
- Has been limited to smart phones.

## Mixed Reality (MR)

- Apple Vision Pro or Meta's Orion project Incredible opportunity to add unlimited depth of information in an overlay form to any guest experience
- Headset technology is still the bottle neck.

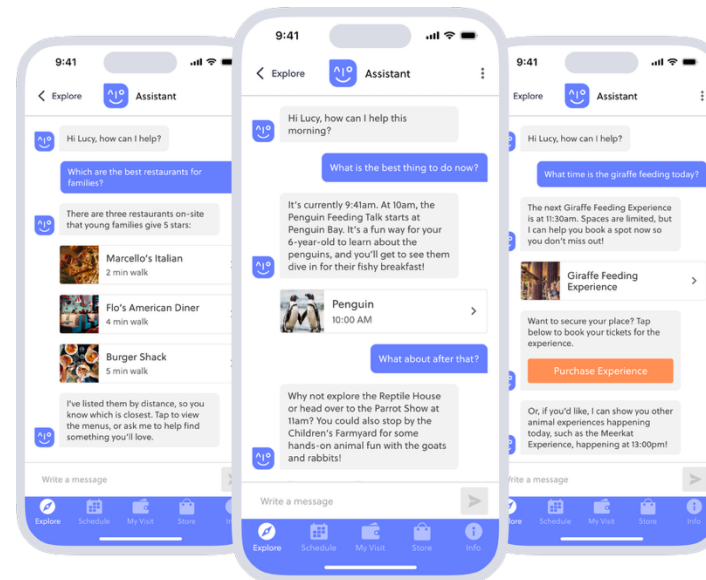


# Personalized Technology.

AI in animal care and conservation setting

## Guest Experience

AI-based guided assistant  
Answering questions

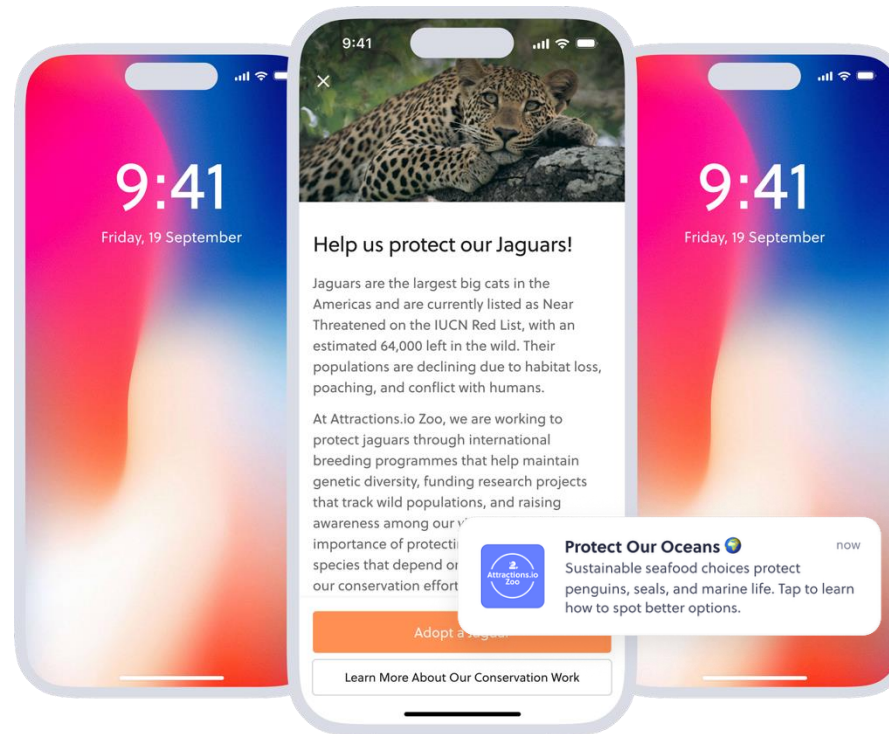


# Personalized Technology.

AI itinerary planning  
Location tracking / geofencing  
Dynamic crowd routing

Conversational AI guides  
Adaptive storytelling

Technology arrives first  
Content is king



# Immersive.

- Transporting guests
- Closer than ever
- Increasing engagement and empathy

## **1. Projection**

## **2. Domed Experiences**

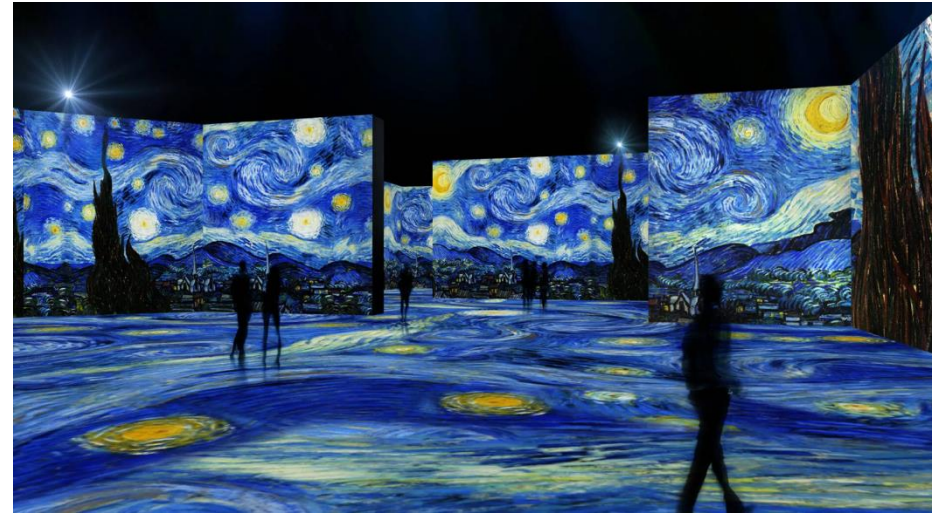
## **3. Virtual Reality**

# Immersive.

## Immersive Projection

Immersive Van Gogh

Native @ Chester Zoo

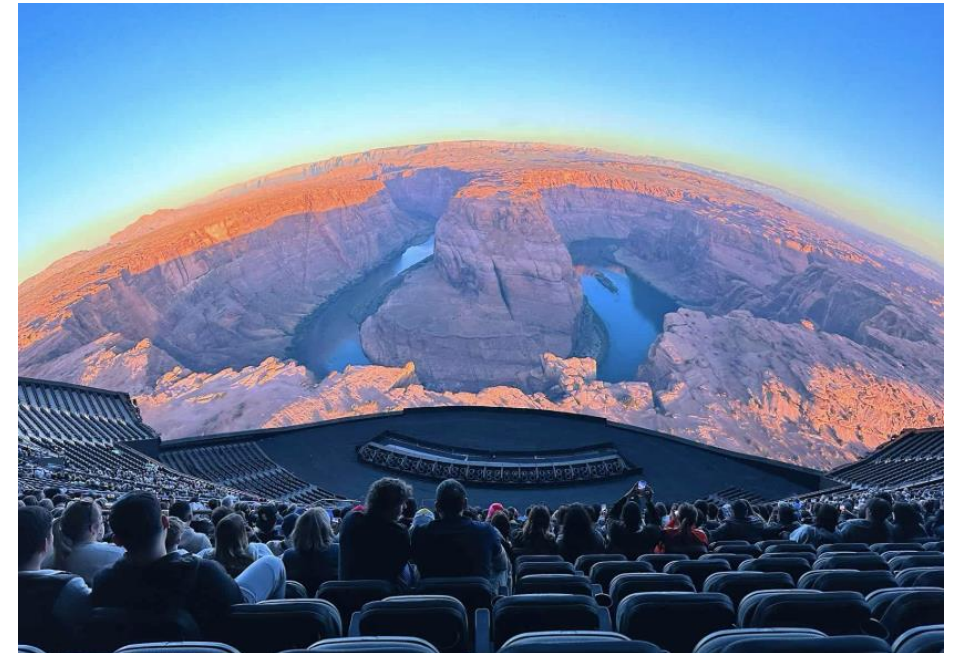


# Immersive.

## Domed Experiences

Sphere

LED domes (Cosm & others)



# Immersive.



## Virtual Reality



# **Dian Fossey Gorilla Fund.**

**Kristen Lukas, PhD**

Director of Conservation & Science, Cleveland Metroparks Zoo;  
Board Member, Dian Fossey Gorilla Fund

# Dian Fossey Gorilla Fund's



## Ellen DeGeneres Campus



- Established in 2022
- World class research & education center
- State-of-the-art exhibits telling the story of 55+ years of gorilla conservation





## Variety of presentation styles

- Combination of physical exhibits
- Recreation of Dian Fossey's cabin





**GORILLA CHAT**





**360° THEATER**





## GORILLA TREK VR



# University of Rwanda Study.

**Chadrack Umunezero**

Conservationist, Botanist, Scientist, University of Rwanda  
Dian Fossey Gorilla Fund



# ASSESSING THE IMPACT OF A VIRTUAL REALITY GORILLA TREKKING EXPERIENCE ON EMPATHY, CONNECTEDNESS TO GORILLA CONSERVATION, AND CONSERVATION ACTIONS



Authors:

-Chadrack Umunezero, Professional Intern at Dian Fossey Gorilla Fund

-Dr. Kristen E. Lukas, Director of Conservation and Science at Cleveland Metroparks Zoo

March 2026



## Gorilla conservation

- Success story
- There are still threats

## Conservation action

- **Empathy** to foster compassion for gorillas
- **Connection** to motivate active participation in conservation
  - Stimulated by seeing gorillas
    - In-person trek
    - Immersive Virtual Reality (IVR)



# BACKGROUND

## 1<sup>st</sup> IVR Gorilla Trek launched in 2023 by IMMOTION

- Partnership with Fossey Fund
- Features Dr. Tara Stoinski as guide
- Provides a 360-degree immersive experience
- Allows users to explore mountain gorillas in their natural environment, in Rwanda
- Features a close-up encounter with the Umubano gorilla group in their natural habitat



*Adding Gorilla Trek to our campus provided a great opportunity to highlight how technology can advance conservation education.*

Dr. Tara Stoinski, Fossey Fund President and CEO

# SPECIFIC OBJECTIVES OF OUR RESEARCH

1. Assess changes in empathy, connectedness, and action before and after:
  - ⑩ IVR
  - ⑩ In-person trek
  - ⑩ Both
2. Compare IVR vs. in-person trek
3. Compare Rwandan vs. international tourists



# METHODS

## Study area description

- **Ellen DeGeneres Campus of the Fossey Fund**
  - Near Volcanoes National Park in Rwanda
  - IVR in the Cindy Broder Conservation Gallery

## Data collection

- Intercepted guests as they approached IVR
  - IVR gorilla trek only
  - In-person gorilla trek only
  - Both
  - Neither
- Rwandan and international



# METHODS

## Survey

A **retrospective pre-then-post survey** method was used with a Likert-scaled questionnaire to survey guests at the Ellen Campus Conservation Gallery.

<b>Before the experience(s), how <u>did</u> you feel?</b>	<b>My insights before and after doing VR Gorilla Trek and/or the In person Gorilla Trek</b>	<b>After the experience(s), how do you feel <u>now</u>?</b>
1 2 3 4 5	1. I understand and appreciate the intelligence of mountain gorillas.	1 2 3 4 5
1 2 3 4 5	2. I can imagine what it's like to be a mountain gorilla living in the forest.	1 2 3 4 5
1 2 3 4 5	3. It is easy for me to understand how a mountain gorilla might feel living in the forest.	1 2 3 4 5

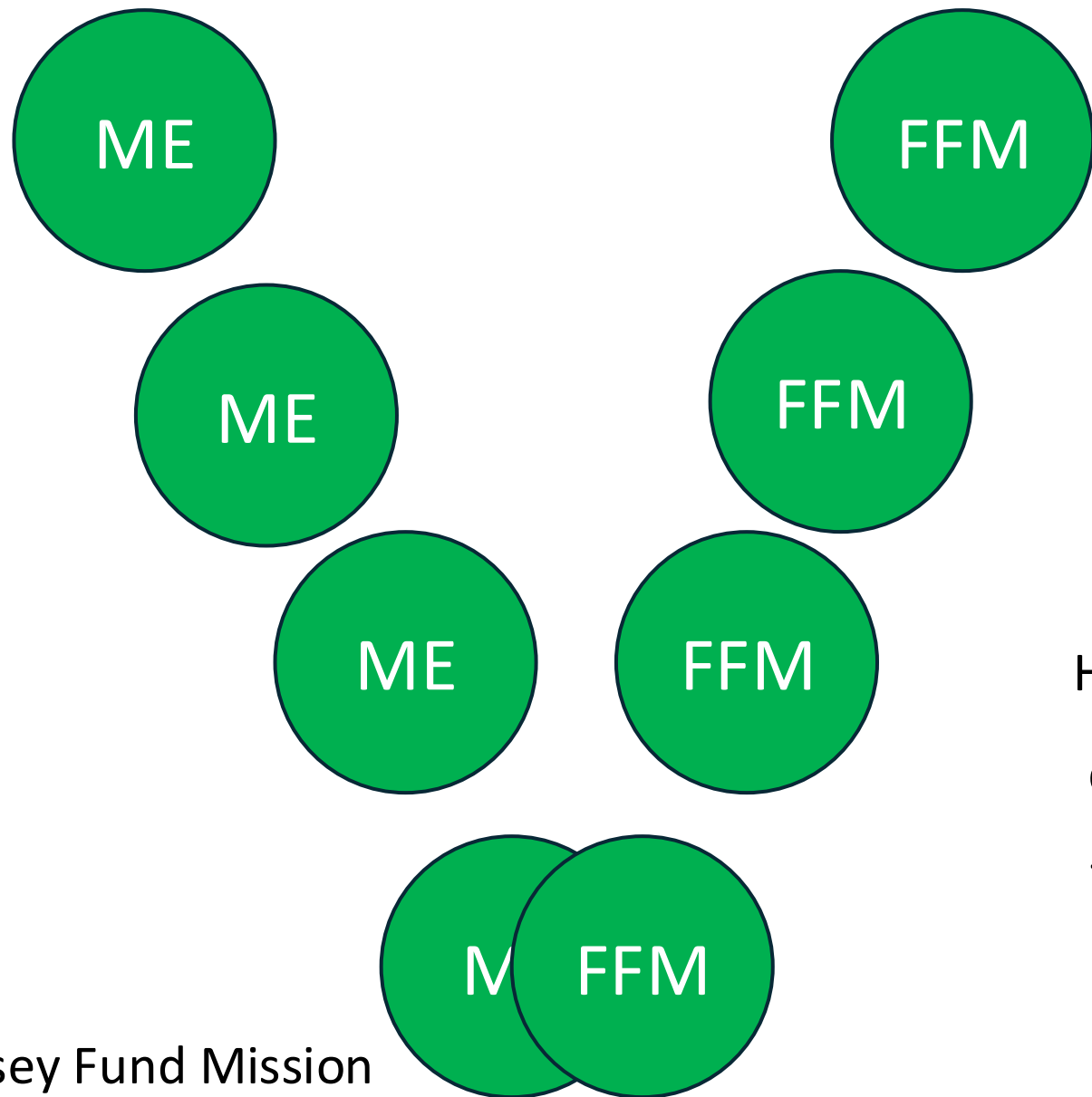
# METHODS

EMPATHY	CONNECTION	ACTION
I understand and appreciate the intelligence of mountain gorillas.	I feel connected to mountain gorillas as a part of the broader web of life.	I am motivated to support the conservation of mountain gorillas and their natural habitats.
I can imagine what it's like to be a mountain gorilla living in the forest.	I understand how my actions affect mountain gorillas.	I am willing to participate in activities that protect nature, such as volunteering or community clean-ups.
It is easy for me to understand how a mountain gorilla might feel living in the forest.	I believe my life is interconnected with the survival and well-being of mountain gorillas.	I would dedicate my personal time and/or resources to help preserve mountain gorillas and their forest home.
I feel compassion for mountain gorillas.	Protecting mountain gorillas feels personally meaningful to me.	I want to share what I know about mountain gorillas with others.

# METHODS

## MISSION

The Dian Fossey Gorilla Fund is dedicated to the conservation, protection, and study of gorillas and their habitats in Africa. Our successful, integrated approach includes close collaboration with local governments and communities as well as partners from around the world.



FFM: Fossey Fund Mission  
ME= Participant

How connected  
did you feel to  
the mission of  
the Fossey  
Fund?

# METHODS

## Subjects

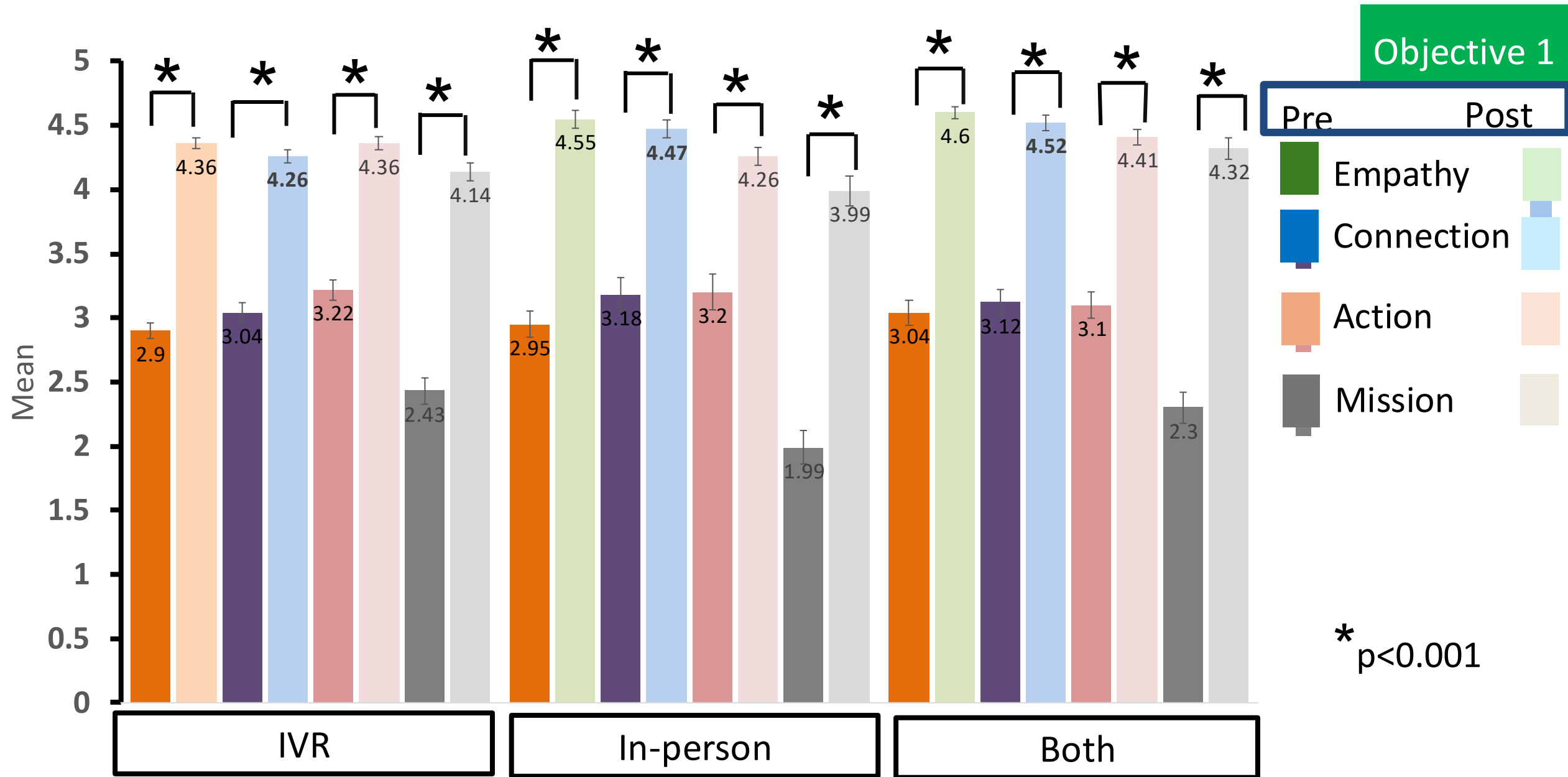
❖ Approached before or after participating in IVR Gorilla Trek

Nationality	IVR GT	In-person GT	Both	Neither	Total
International	152	159	167	129	605
Rwandan	203	39	44	119	405
Grand Total	355	182	211	246	1010

IVR= Immersive Virtual Reality, GT=Gorilla trek



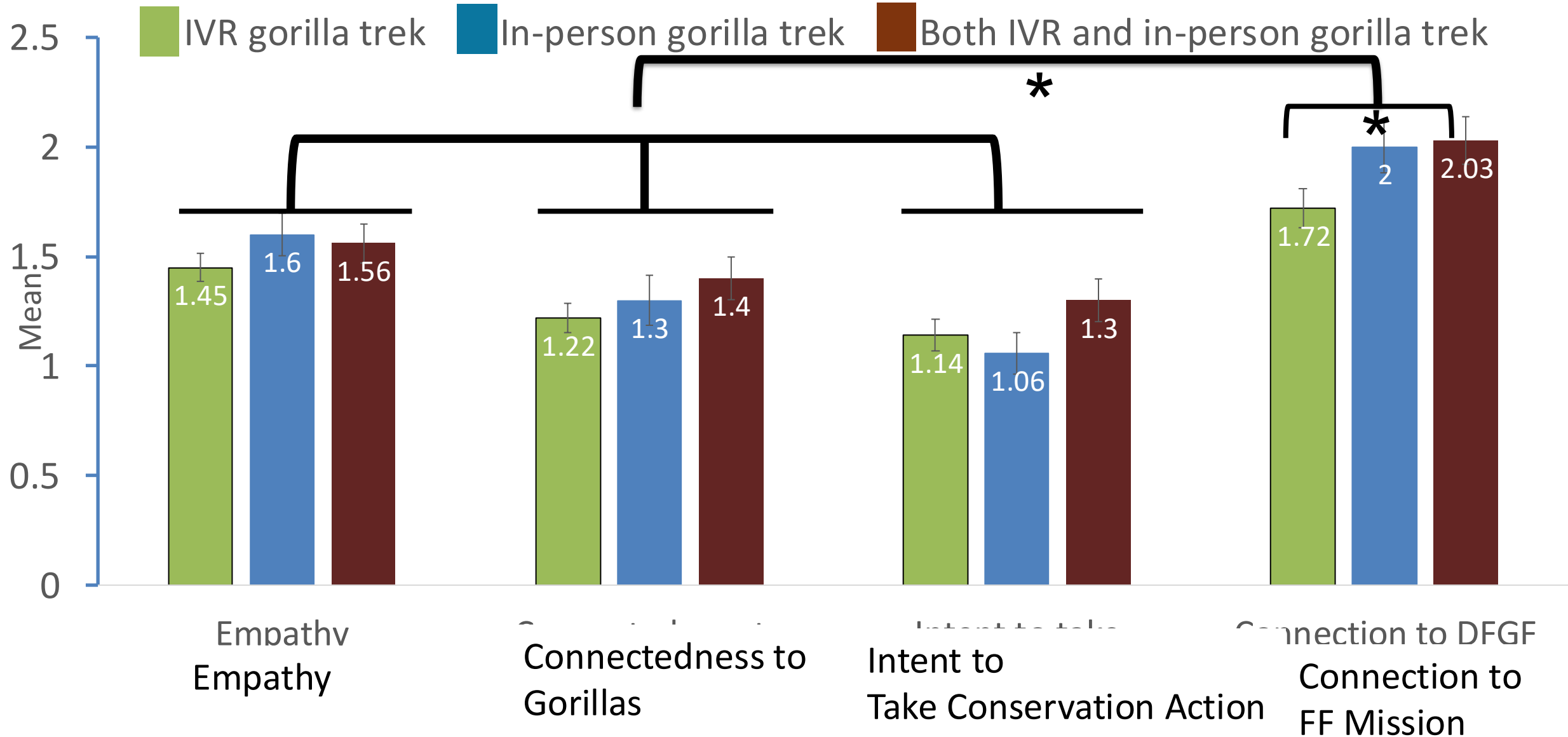
# RESULTS



# RESULT

\*:  $p < 0.05$  (both had higher impact than either experience alone)

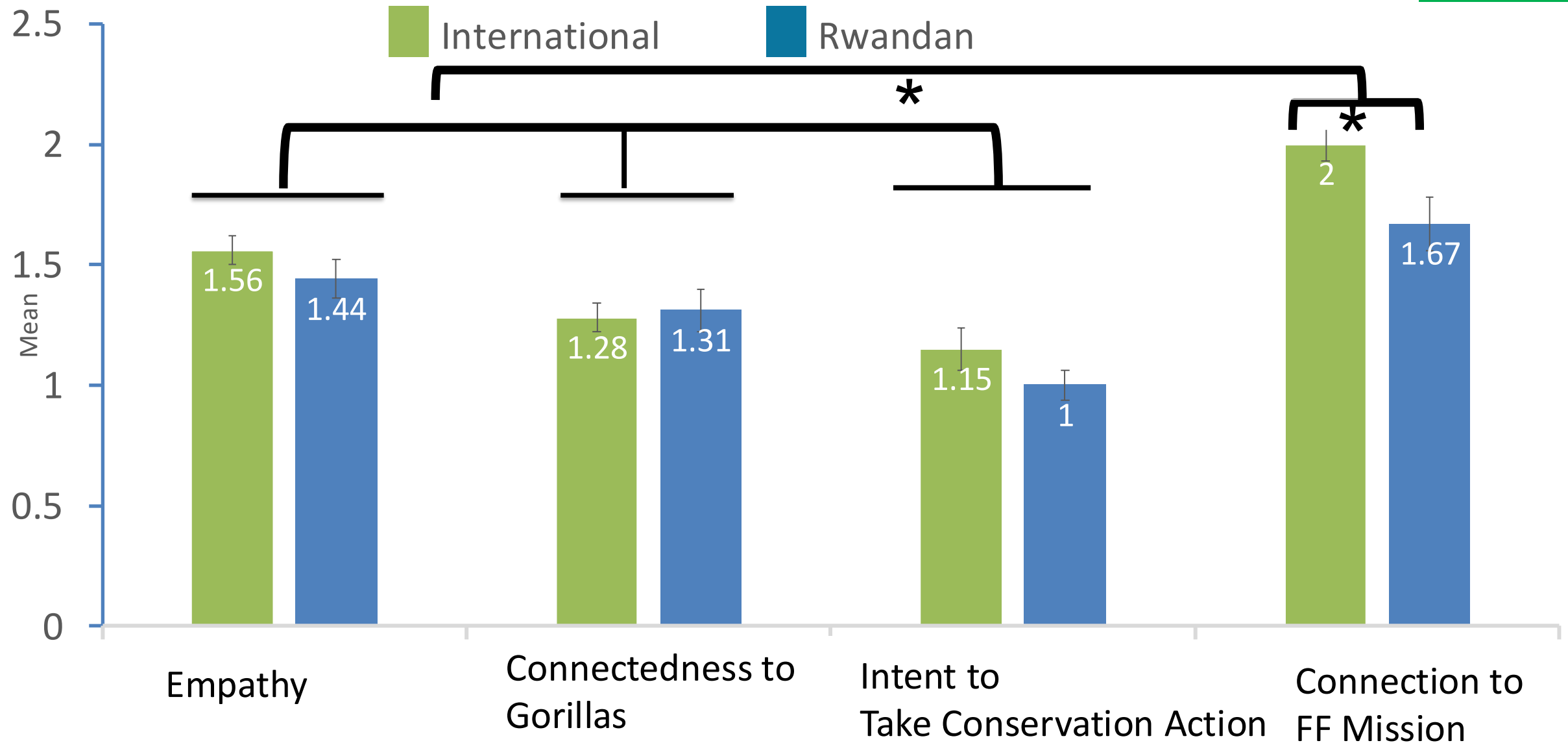
Objective 2



# RESULTS

*\*:  $p < 0.05$  international show higher connection than Rwandan*

Objective 3



# RESULTS: What do you think about IVR gorilla trekking at the Ellen Campus of the Dian Fossey Gorilla Fund?

<p>Awareness or Education, 12%</p>	<p>Experience increased their knowledge or understanding of gorillas, conservation issues, or the natural environment.</p>	<p><i>I was very impressed because it allowed me to see how mountain gorillas live, something I didn't know before. This experience made me love them even more.</i></p>
<p>Empathy for Gorillas, 2%</p>	<p>Participants express emotional understanding, compassion, or concern for gorillas after the virtual reality experience.</p>	<p><i>It was very engaging and incredible to delve into the world and life of mountain gorillas and feel part of them.</i></p>
<p>Connection to Conservation, 3%</p>	<p>Participants describe a stronger sense of personal relevance or attachment to wildlife conservation.</p>	<p><i>This virtual helps to connect with gorillas, even if you have not yet done that in person.</i></p>
<p>Intent to Take Action, 1%</p>	<p>Participants describe a stronger sense of personal relevance or attachment to wildlife conservation</p>	<p><i>I have learned more that will help me to teach other about how gorillas are good and how we are supposed to protect them.</i></p>

# RESULTS: If you have participated in both IVR and an in-person gorilla trekking experiences, please provide a comparison

<p>In-person is better 16%</p>	<p><i>Very different, virtual shows close, but in-person gives full experience, and nothing compares to see them in the forest.</i></p> <p><i>Virtual Reality experience was impressive, but it does not compare to experiencing an in-person gorillas trek experience. Being in the forest, is incredible</i></p>
<p>IVR is better 2%</p>	<p><i>Virtual reality is safer compared to in-person gorillas trekking</i></p> <p><i>Virtual Reality was far better than in-person as I could feel them, being with them and observe their behavior, activities which can't be seen in-person within one hour.</i></p>
<p>Both complement each other 3%</p>	<p><i>Both were amazing! In-person was life-changing. The virtual reality was very fun too.</i></p> <p><i>Thank you</i></p> <p><i>Very similar, however in real gorillas trek you smell the air, you see plants and smell of gorillas</i></p>
<p>Both are similar; VR is a good substitute 9%</p>	<p><i>This Virtual reality is very good and is very important to the people who can't afford in-person gorillas trek or have no time to go in the forest.</i></p> <p><i>I think for some one who does not have means its educational. Also seeing this in treks is even more of details of life class. Its digital and it makes you feel connected unlikely with a tourist there is no hiking no danger of animals it is good in both ways, but VR is still virtual</i></p>

# CONCLUSION

- ❖ The study suggest **that IVR can be effective as real-life experiences** as tool that can help to enhance empathy, understanding, raising awareness, and inspiring conservation action.
- ❖ Moreover, study has shown that IVR, an in-person gorilla trek, and the combination of both experience may improve **empathy, connection** and **action** at the same magnitude.
- ❖ Additionally, the study found that IVR had a **similar effect on both Rwandan and international tourists**, highlighting its ability to transcend cultural and geographic boundaries.
- ❖ This shows that IVR may be an **alternative** or **complement** to in-person gorilla trek.

# RECOMMENDATIONS



- ❖ Future research should investigate longitudinal effects to determine whether these attitudinal changes translate into sustained real-world behaviors.
- ❖ Increase the number of IVR pods, include stories of different gorilla families and Kinyarwanda narration to be more inclusive to local communities.
- ❖ This research can also be conducted at AZA facilities with similar pods for comparison.

# State of Engagement.

Opportunity to increase guest engagement through technology

**Engagement Gap**

## Traditional

### Conservation Action

Motivated, informed choices and support for conservation efforts

### Conservation Awareness

Understanding the impact and importance of protecting wildlife

### Context and Facts

Identification and contextual within environment

### Exposure to Animals

Seeing the animal in zoo/aquarium

## Engaged

### Conservation Action

Motivated, informed choices and support for conservation efforts

### Conservation Awareness

Understanding the impact and importance of protecting wildlife

### Effective Education

Contextual understanding, not just facts; fostering empathy

### Guest Engagement

Emotional and cognitive connection to animals and environments

### Resonant Interaction

Emotive, layered, and deeply-contextual

### Presentation of Facts

Simple identification and presentation of basic facts

### Exposure to Animals

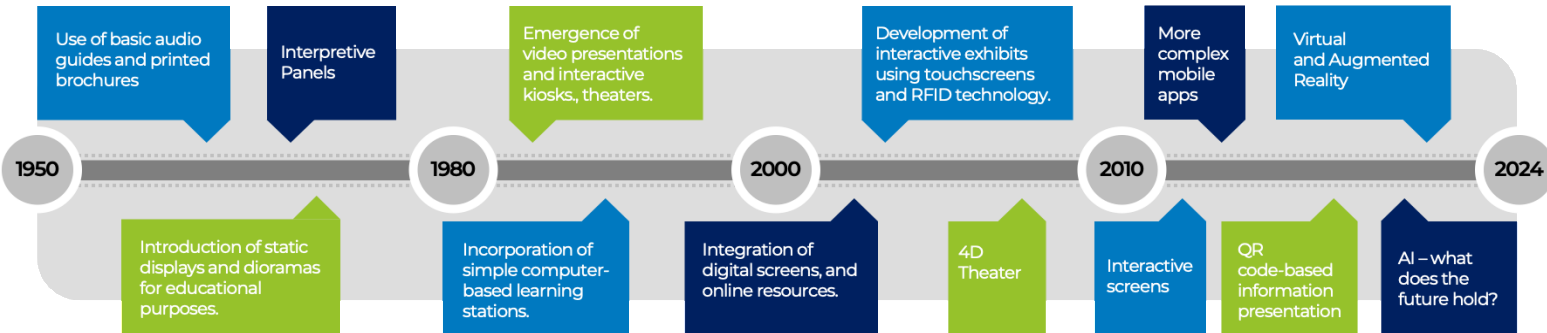
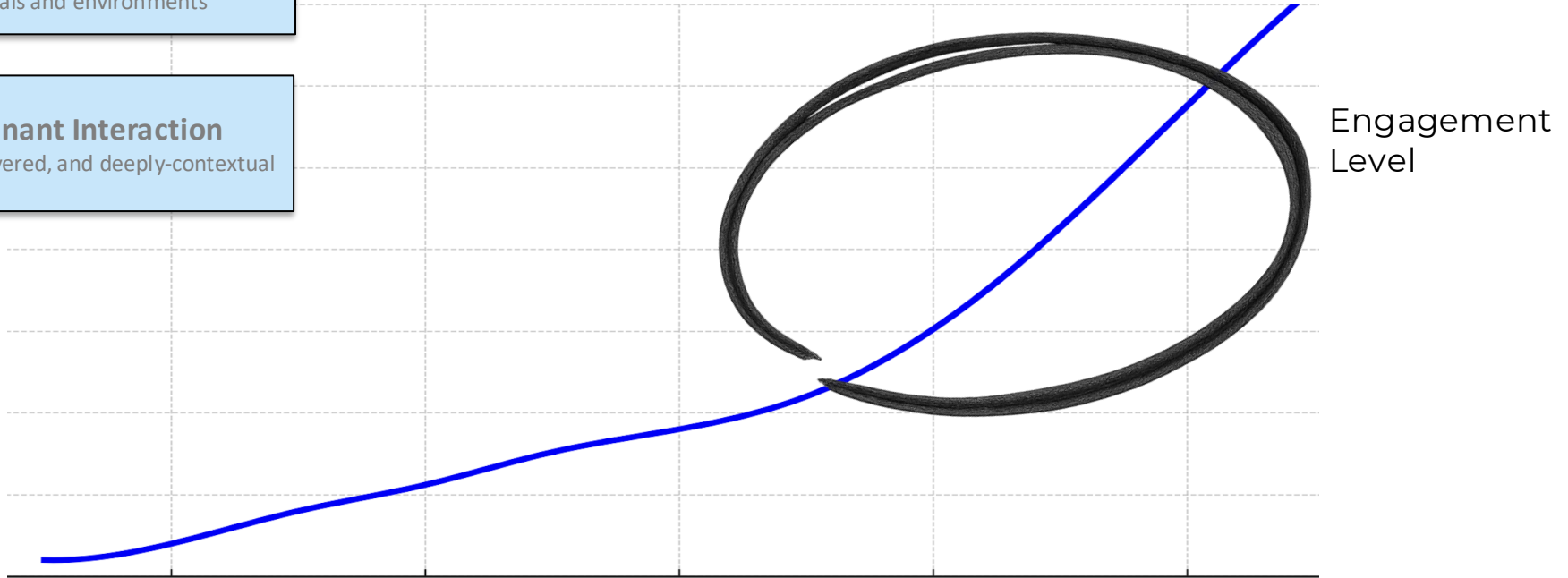
Seeing the animal in zoo / aquarium



**Effective Education**  
Contextual understanding, not just facts;  
fostering empathy

**Guest Engagement**  
Emotional and cognitive connection to  
animals and environments

**Resonant Interaction**  
Emotive, layered, and deeply-contextual



# Summary.

- Surprisingly resonant engagement
- Risk of distraction and misapplication
- Opportunity if incorporated in a balanced way
- Very exciting path forward

**Thank you.**