



:) **Affectiva**


Emotion AI: **A New Frontier**

Boisy Pitre

Emotion AI Evangelist

Affectiva

@boisypitre

 @affectiva

Emotions influence **every**
aspect of our lives



From our health
and **wellbeing**

To what we **purchase**

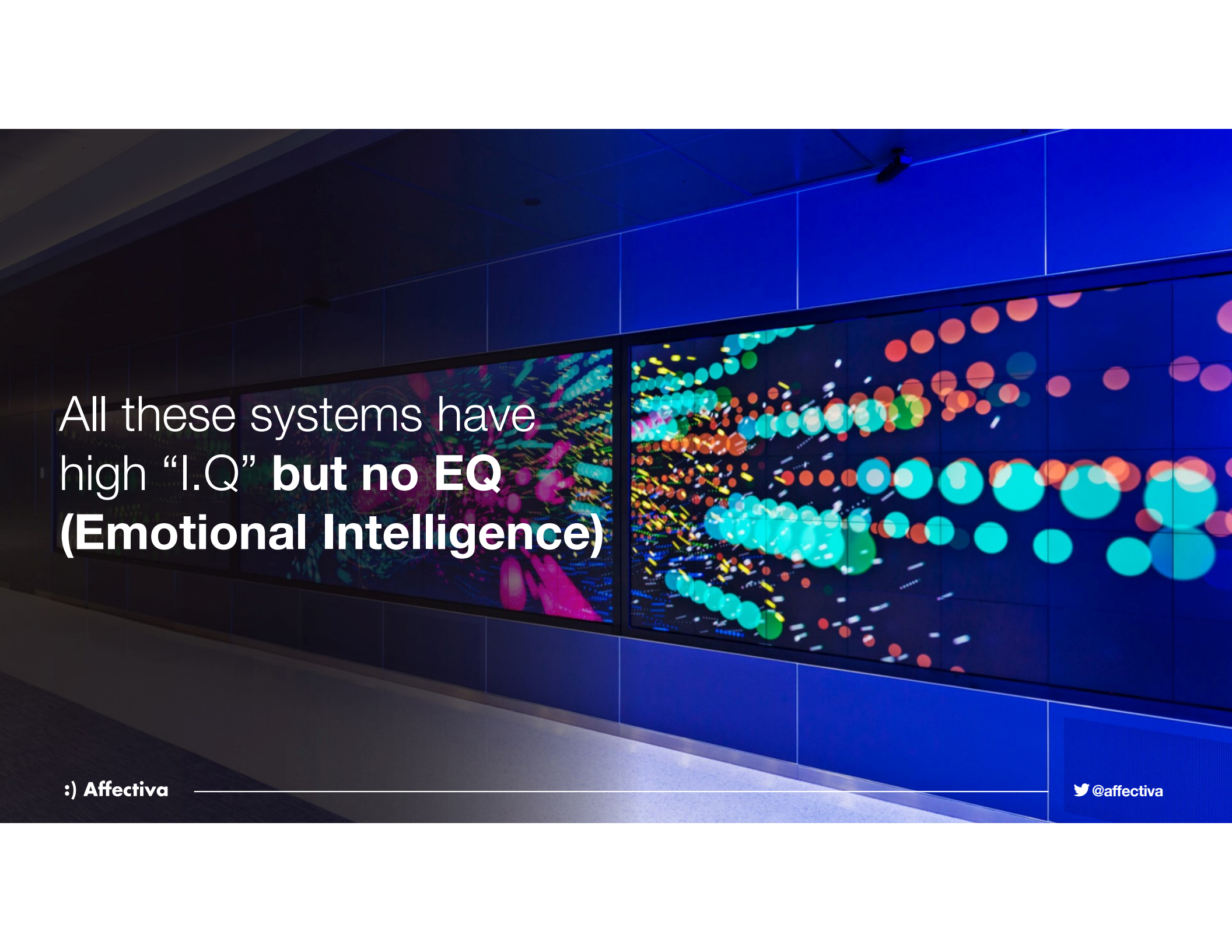
How we **learn**

To the **decisions**
we make

And how we connect
with each other

We are surrounded by **hyper-intelligent technologies** with massive cognitive and **autonomous capabilities**





All these systems have
high “I.Q” **but no EQ**
(Emotional Intelligence)

Yet our interactions
with technology are rapidly
becoming...

more conversational

Can I book a room tonight?

Hi James. We have a room
available tonight- room rate
\$219+tax.

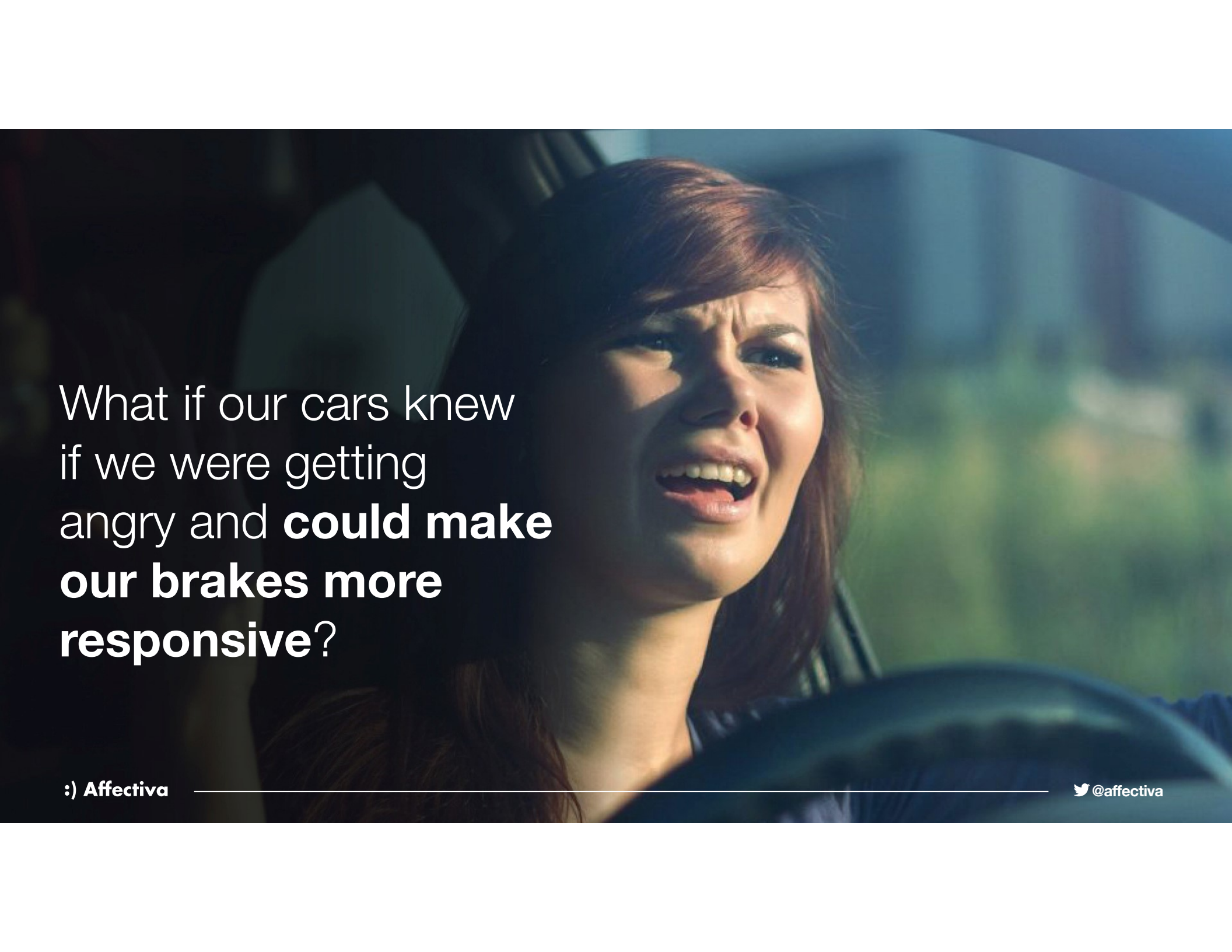


Hyatt Regency Hotel
San Francisco

HYATT



More
relational



What if our cars knew
if we were getting
angry and **could make
our brakes more
responsive?**

What if doctors could objectively measure how you are **feeling the way they measure our other vital signs?**



A woman with short grey hair and glasses is in a kitchen, wearing a green long-sleeved shirt and a white apron with a red cherry pattern and a red and white striped pocket. She is looking down at a small metal bowl in her hands. The background shows a window with pink orchids and a kitchen sink with a large pot.

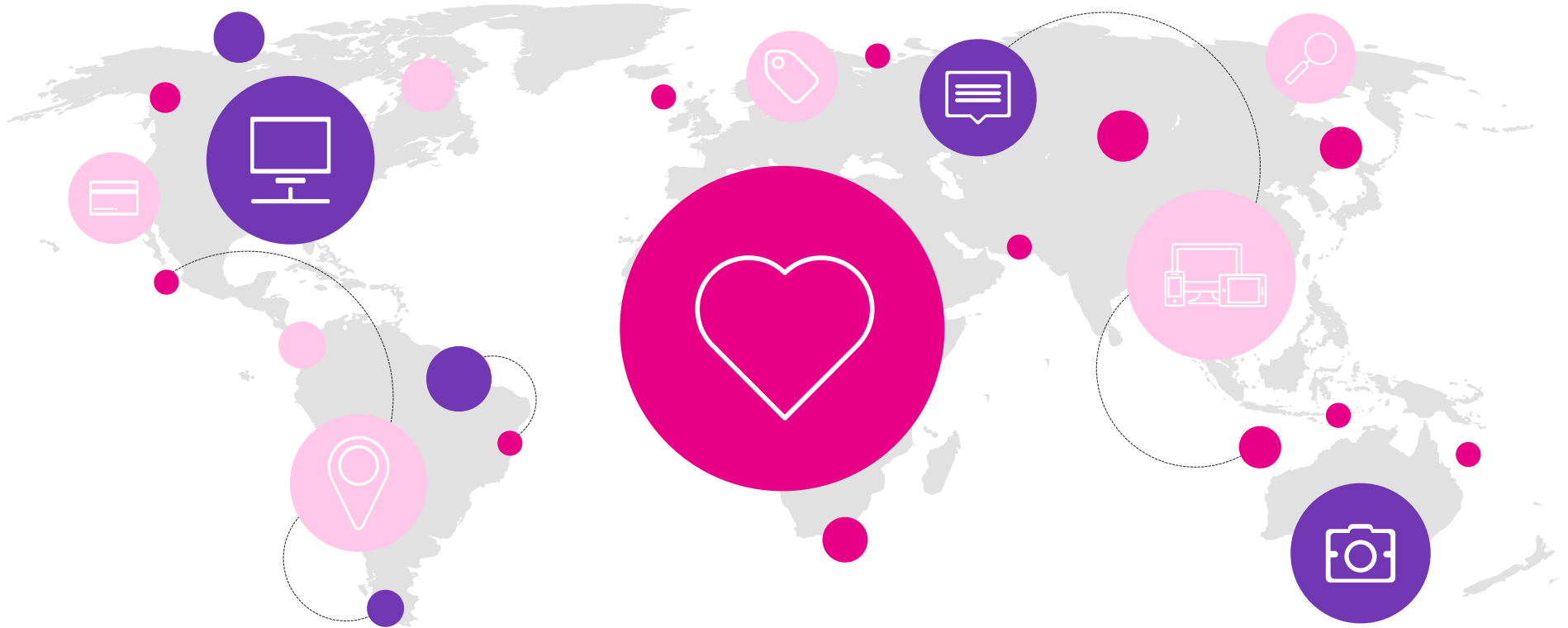
What if social robots,
could **actually**
be “social”?

What if every device in the internet of things had an emotion chip and **could make personalized suggestions based on your mood?**

Your smart refrigerator could identify how you felt and **suggest a food that matched your emotion.**

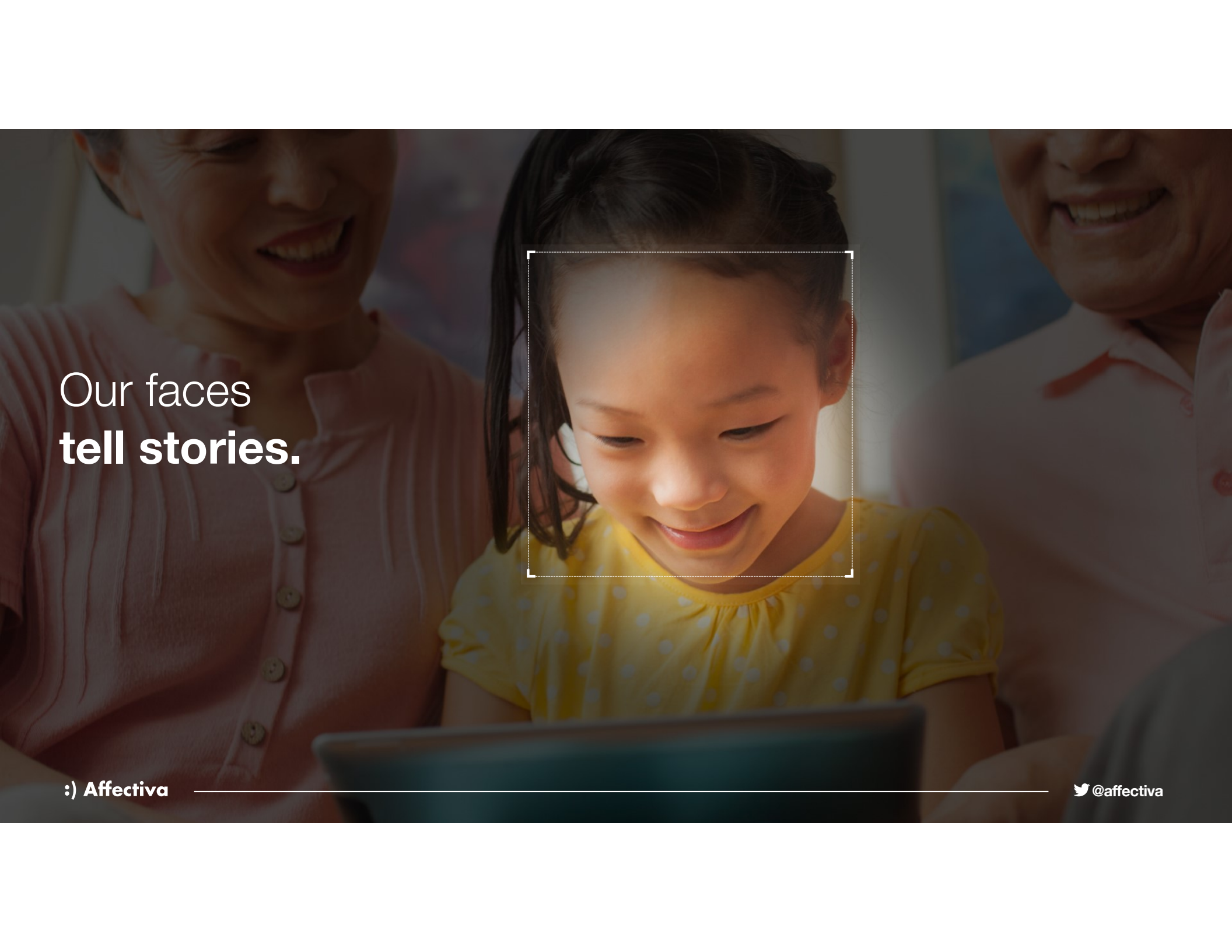


Our vision is **to humanize technology with Emotion Intelligence** by enabling machines to be emotion-aware and by allowing businesses to get emotion analytics.
This is **Emotion AI.**

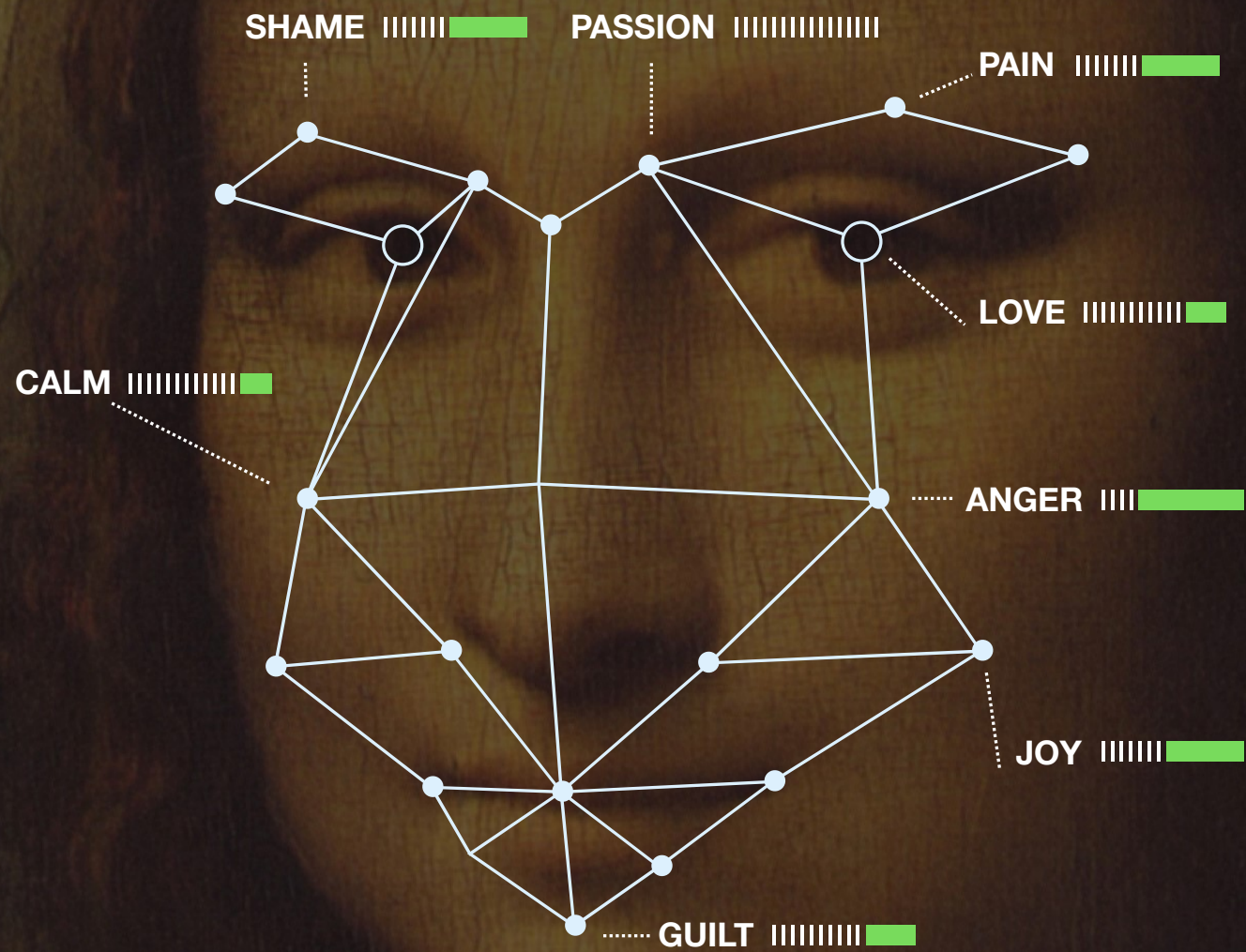


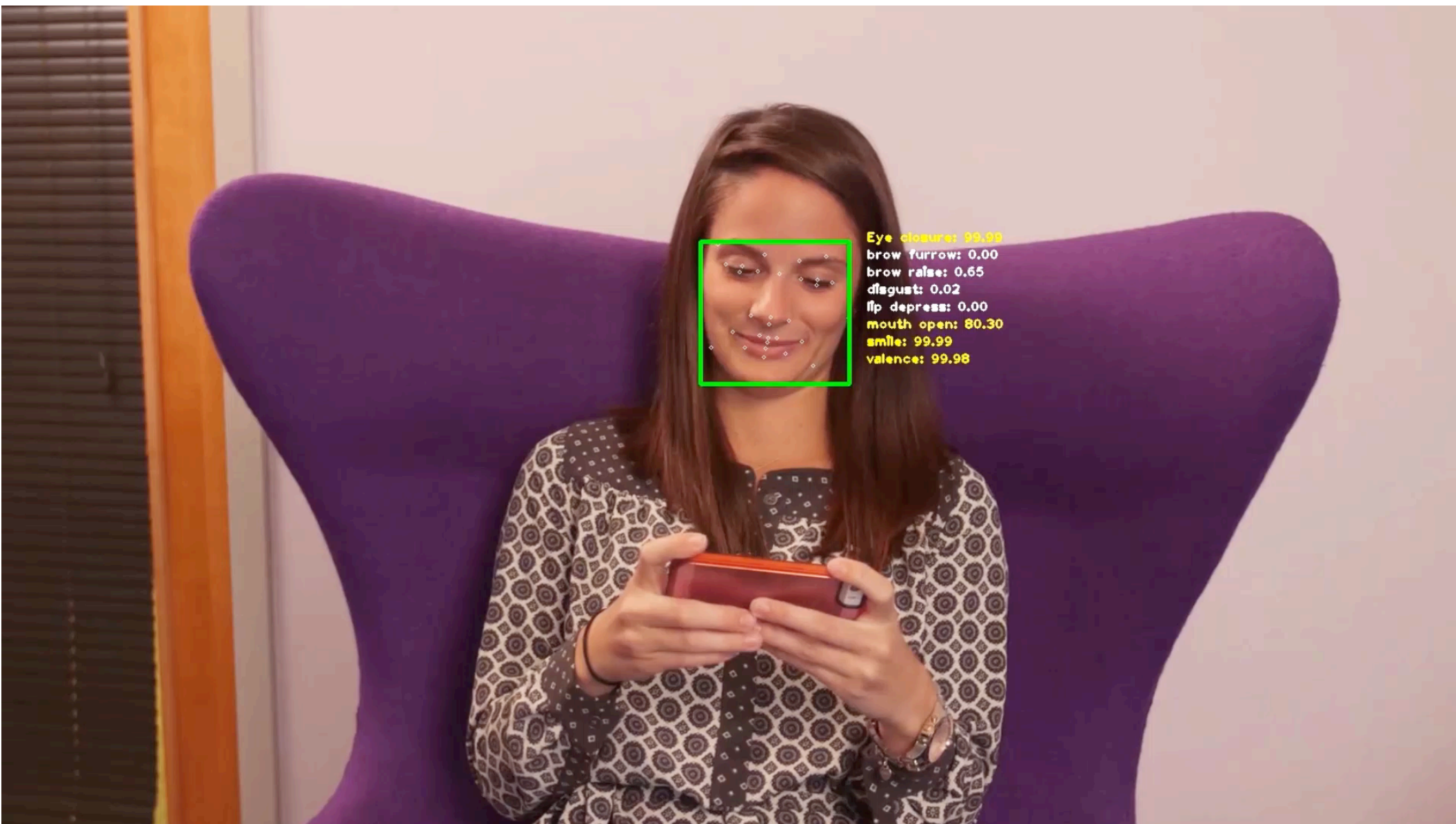
Emotion AI

How it **works**


A photograph of a family of three—a woman, a young girl, and a man—looking at a tablet together. The woman is on the left, the girl is in the center, and the man is on the right. They are all smiling. The girl's face is highlighted with a dashed white rectangular box. The background is slightly blurred, showing an indoor setting.

Our faces
tell stories.





Eye closure: 99.99
brow furrow: 0.00
brow raise: 0.65
disgust: 0.02
lip depress: 0.00
mouth open: 80.30
smile: 99.99
valence: 99.98

The background of the slide is a photograph of a large, curved wall composed of many digital screens. The screens display various colorful, abstract visualizations that represent emotion data. On the left, one screen shows a complex network of nodes and lines in shades of purple, pink, and blue. To its right, another screen displays a dense cluster of small, multi-colored dots. Further right, a screen shows a series of larger, overlapping circles in cyan, green, and orange, arranged in a somewhat horizontal line. The overall lighting is dim, with the screens providing the primary light source, creating a futuristic and data-driven atmosphere.

What does emotion data
look like?

Telling the difference between...



a **Smile**



a **Smirk**

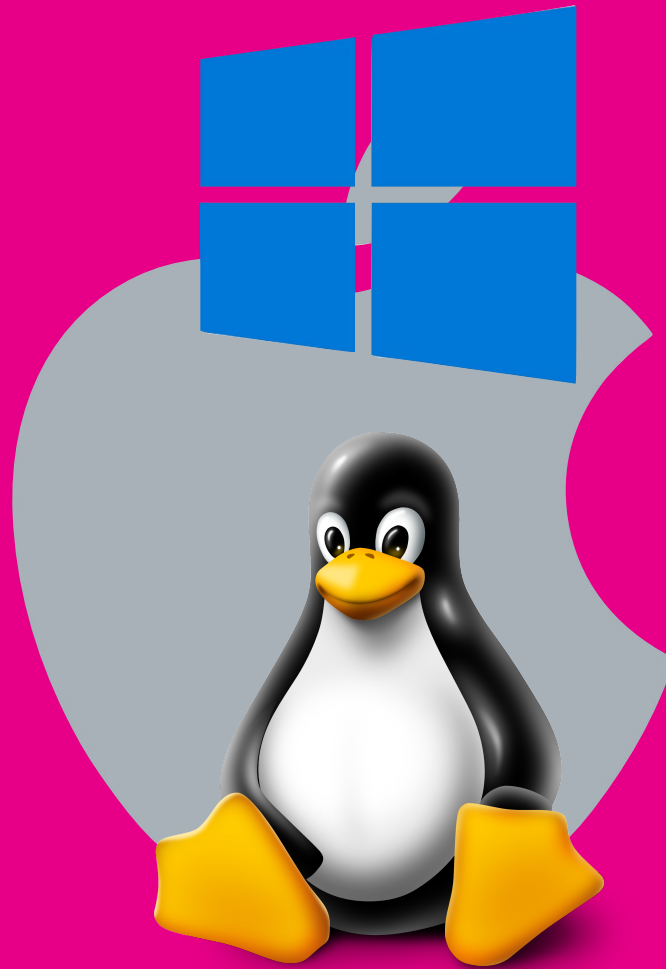


Emotion Analysis in **the Cloud**

Limitations of a **Cloud-based API**

The case for a Real-Time API





```

    function(b, c) {
    var d = a(c.form.querySelectorAll('input[type=checkbox][name="' + b.el.name + '"']));
    if (0 == d.index(b.el)) {
    var e = d.filter(":checked").length;
    return e >= b.arg || g.minChecked.replace("{count}", b.arg)
    }
    },
    maxSelected: function(a) {
    return null != a.val ? a.val.length <= a.arg || g.maxSelected.replace("{count}", a.arg) : null;
    },
    minSelected: function(a) {
    return null != a.val && a.val.length >= a.arg || g.minSelected.replace("{count}", a.arg) : null;
    },
    radio: function(b) {
    var c = a(this.form.querySelectorAll('input[type=radio][name="' + b.name + '"')).filter(":checked").length;
    return 1 == c
    },
    custom: function(a, b) {
    var c = b.options.custom[a.arg],
    d = new RegExp(c.pattern);
    return d.test(a.val) || c.errorMessage
    },
    remote: function(a) {
    a.remote = a.arg
    }
    };
    b = function(b, c) {
    this.handler = !1, this.options = a.extend(10, {}, h, c), this.form = b, this.str = {}, this.valid = {}
    };
    b.prototype = {
    constructor: b,
    init: function(a) {
    this.init(a)
    }
    };

```








Just two seconds of...

VIDEO

496MB

1920x1080 32-bit frames at 30
frames per second

AUDIO

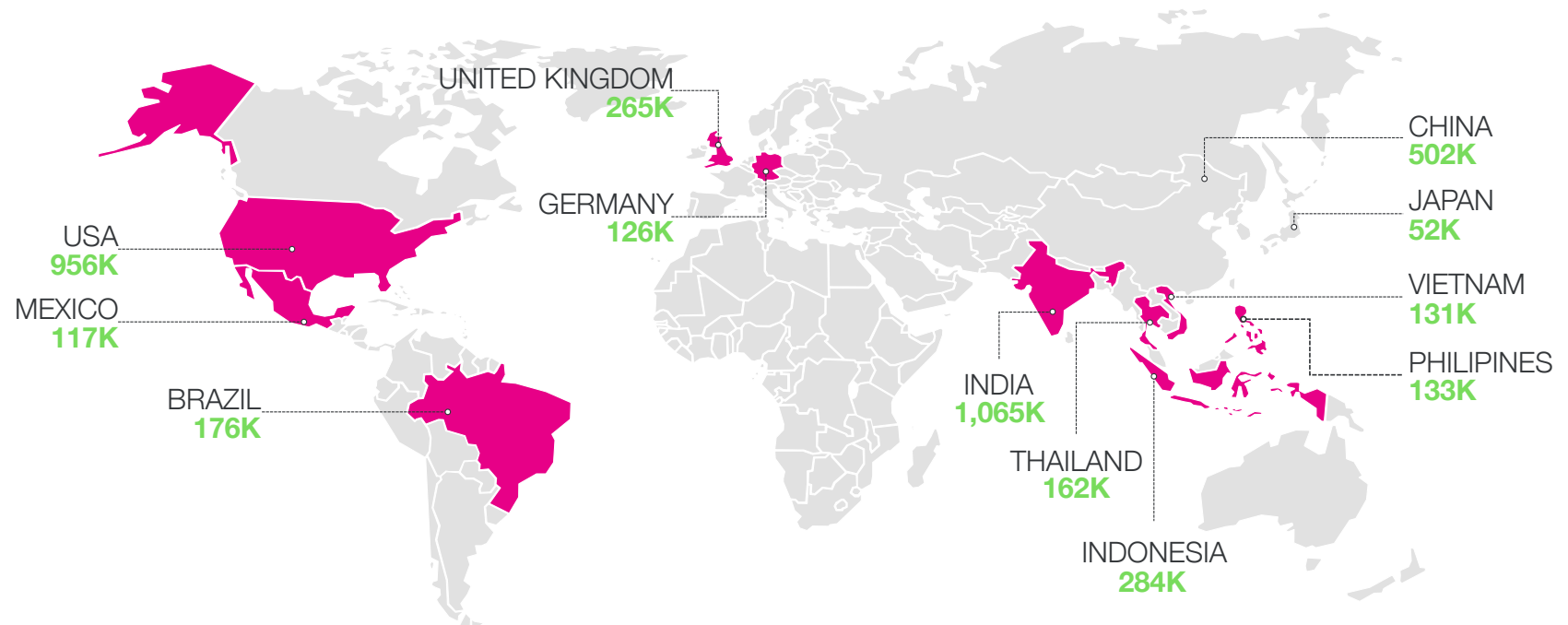
32KB

16KHz 8-bit mono audio

World's largest **emotion repository**

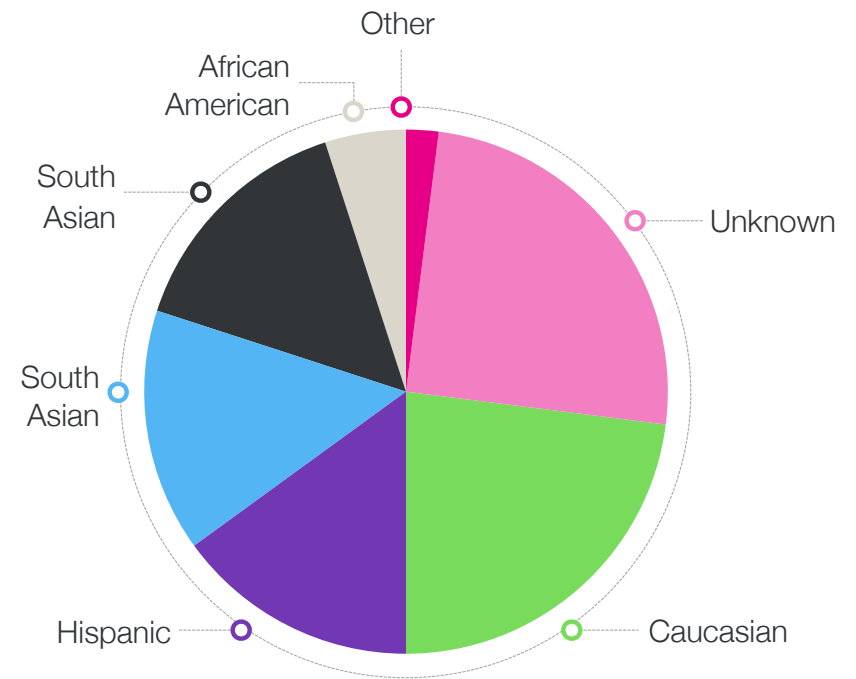
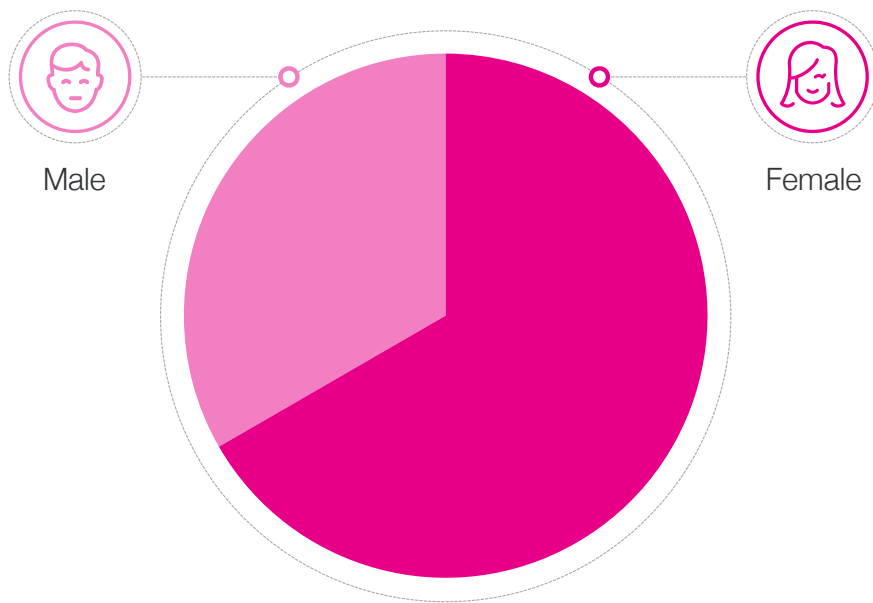
75 countries, 5.3M faces analyzed, 2B facial frames

Top Countries for Emotion Data



Guarding **against biases**

Ensuring ethnicity, gender and age diversity in our training data

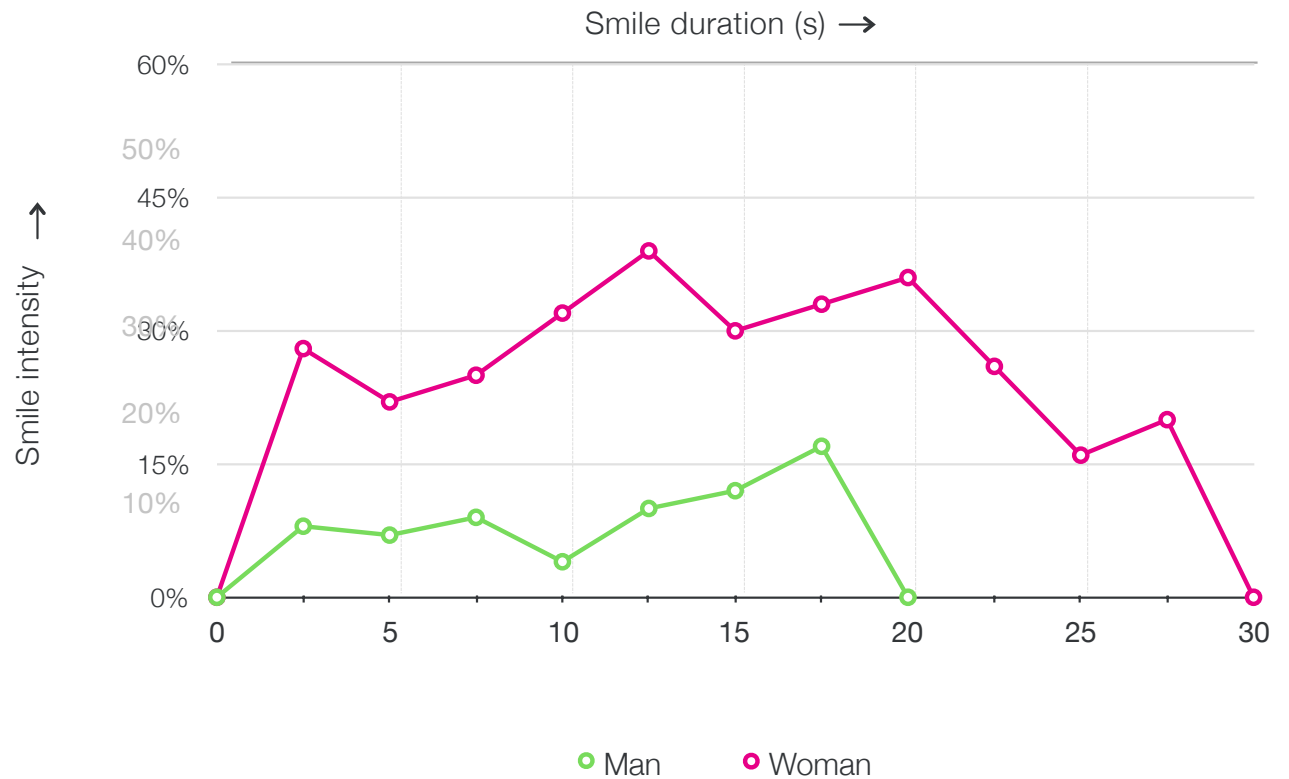


What have we
learned from the data?

Women **more expressive** than men!



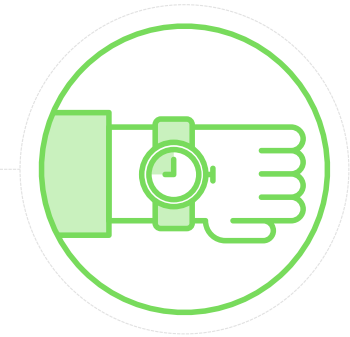
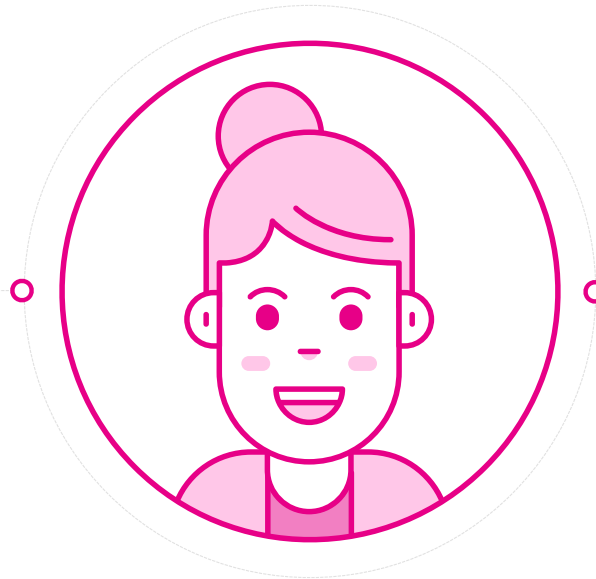
Females express more
than men



Women smiled **32% more** than men



Women smiled in just over a quarter of the facial video responses, smiling **32% more** than men.

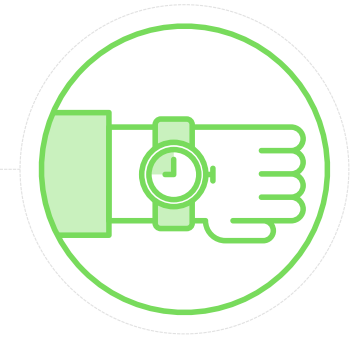


Women smiled more than men and **their smiles were longer** in duration.

Men showed more “**brow furrowing**” compared to women



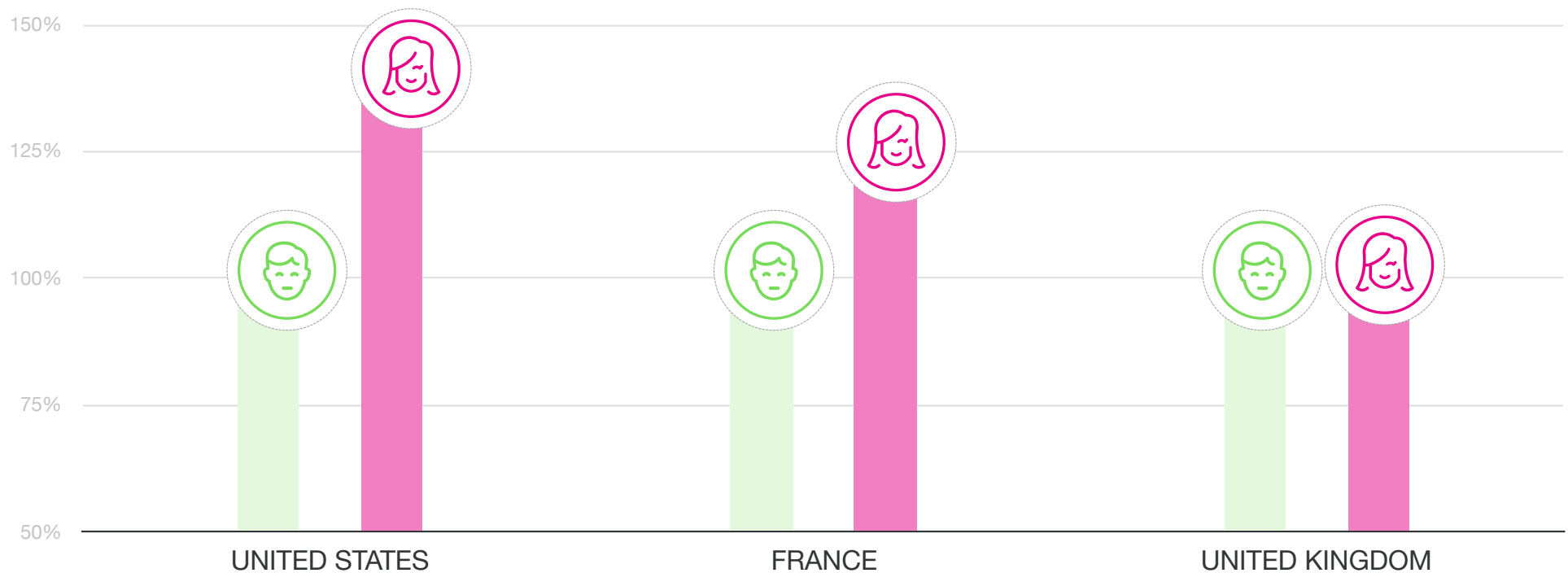
Women furrowed
in only **20% of the videos**,
and they actually furrow
12% less than men



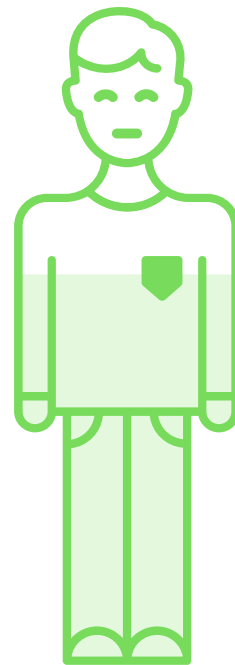
Brow furrows from women were
significantly shorter in duration
than those from men.

Gender **differences vary** by culture

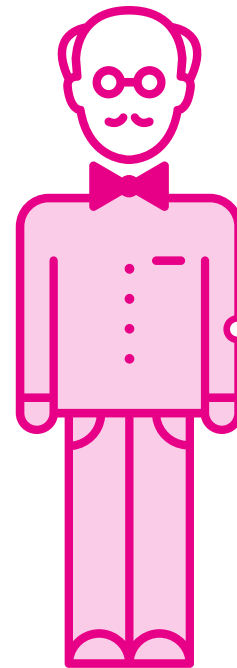
In the US women smile 40% more than men, in France it's 25%, but in the UK it's the same



Older people
more emotive
than younger people



50 years below



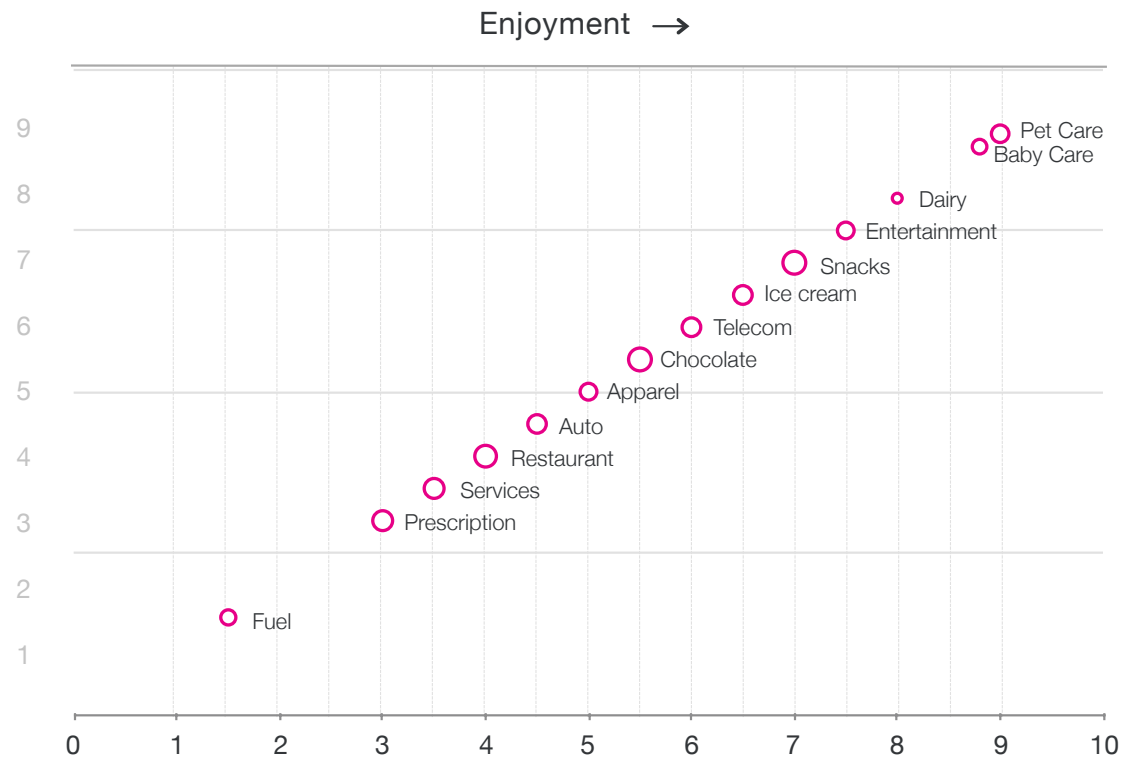
50+ years

+25%
more

In the US, **pet care and baby care ads** elicit the most enjoyment!



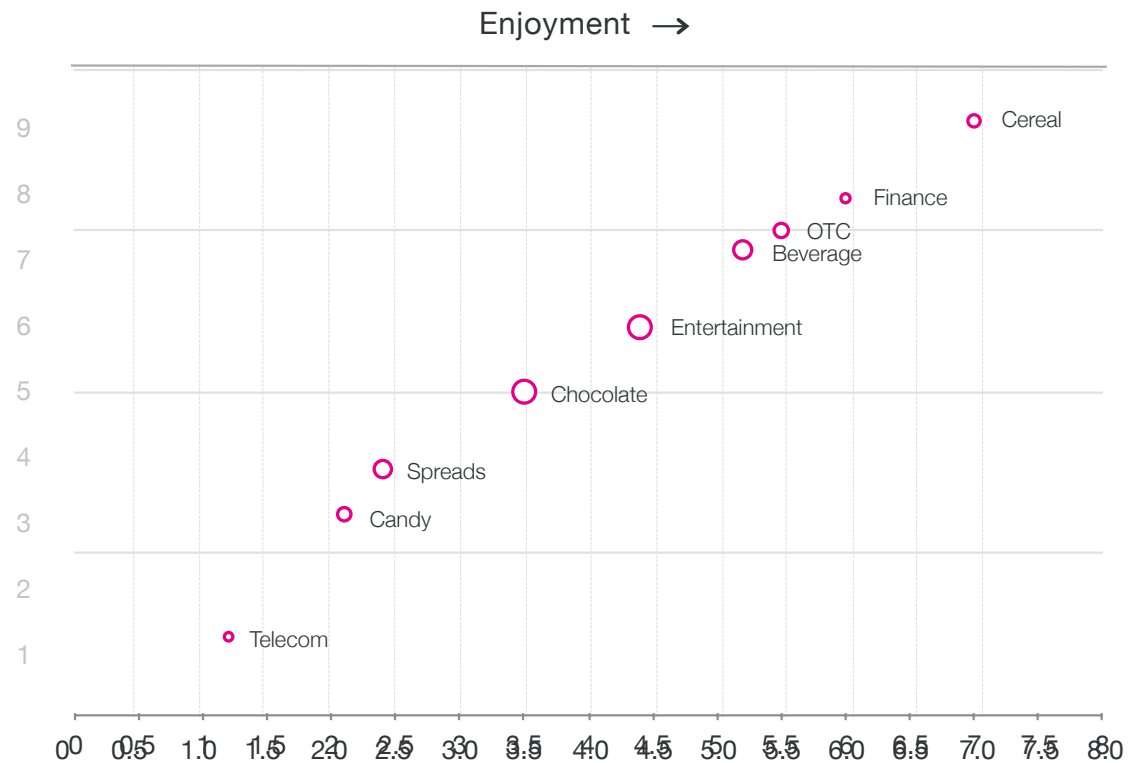
Enjoyment ↑



In Canada, its the **Cereal ads** that elicit the most enjoyment!



Enjoyment ↑



Emotion AI

How it **is used**

How Emotion AI is used



Insights & Analytics

Understand how people engage emotionally in the digital world



Real Time Interaction

Apps and digital experiences adapt to our emotions in real time

Gaming

Nevermind

Psychological thriller game becomes more challenging when sensing player distress

NEVERMIND

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Video Recruitment

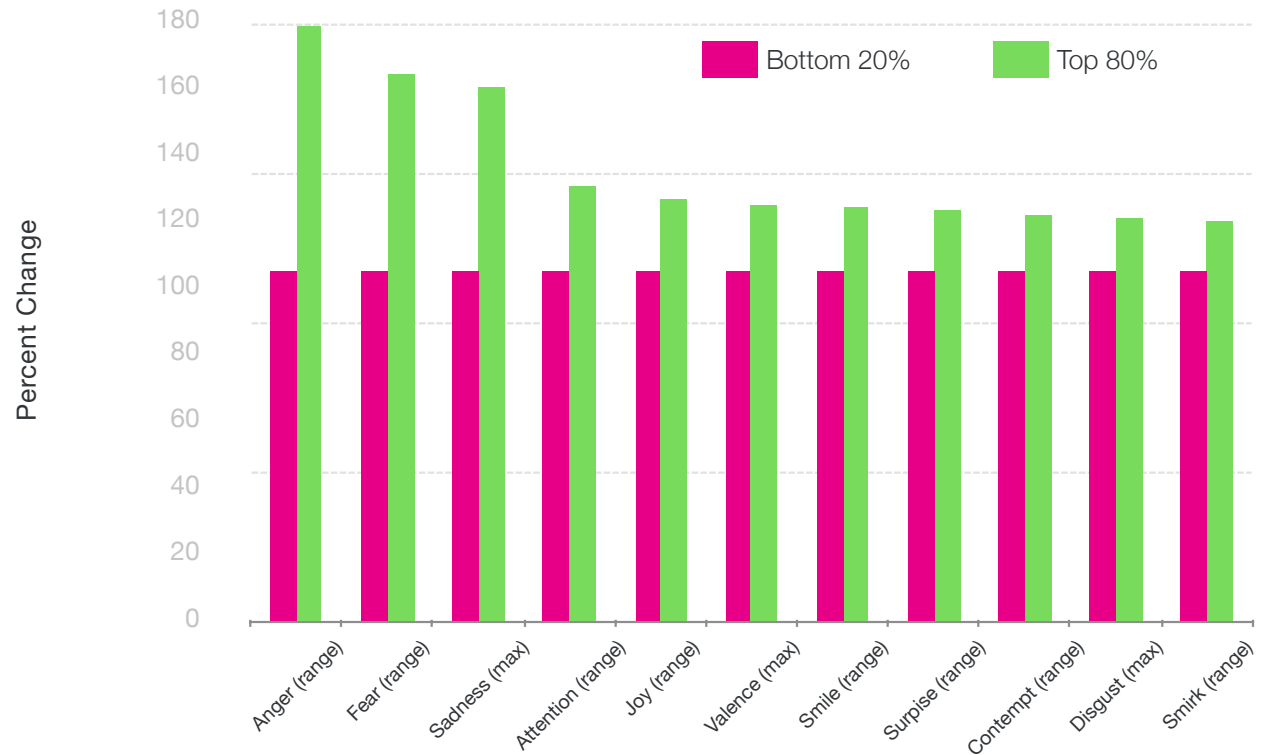
Top performers are **more expressive**

They smile more, but its not just that. They show a wider range of emotion compared to bottom performers – maybe they are more authentic?

Data pulled from **13,356 interviews** that also had performance model scores.

Hire★Vue

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Health and Wellbeing

Brain Power: helping individuals on
the autism spectrum

World's First **Augmented Reality**
Smart-Glass-System empowers children
and adults with autism to teach themselves
crucial social and cognitive skills using Affectiva
emotion recognition tech.



GLASS

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We've spent the past 50 years interacting
with computers with their language.

**The time has come where computers can
interact with us using our language.**

Combining **Face and Voice Metrics**



Facing the Road Ahead

Learn more at
affectiva.com

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