THE Shape OF Feeling

VISUALIZING EMOTIONS IN REAL TIME THROUGH SPEECH

By

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Abstract

The Shape of Feeling explores how real-time emotion visualization can strengthen emotional awareness and literacy. By translating dialogue into dynamic, digital sculptures, the project makes abstract feelings perceptible as they arise. Based on research in affective psychology and embodied cognition, it features a library of 35 symbolic shapes, each designed to reflect the physical and mental qualities of a specific emotion.

The process involved individually designing emotion-based sculptures and building a speech-to-visualization system that responds instantly to verbal input. This tool makes it possible to express and reflect on emotions at the same time, letting users see their feelings as they speak. In doing so, the project contributes to a growing discourse on how design and technology can support emotional literacy.

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01 _ Introduction

Concept Statement

The Shape of Feeling brings our emotions to life as we speak. Listening to the feelings behind our words, it transforms them into dynamic, digital sculptures that evolve in real time. Each of the 35 curated emotions is thoughtfully designed to mimic how feelings move through our minds and bodies. This reflective and educational tool makes our emotional experience visible, helping us develop a deeper understanding of your own feelings.

Impetus

Verbalizing our feelings functions as a cognitive process that strengthens emotional awareness (Lieberman et al., 2007). Embedded in the way we express ourselves are valuable emotional insights: the words we choose, the perspectives we adopt, and the shifts in our tone all reveal what we're feeling in the moment.

Traditionally, building emotional intelligence has relied on methods that prompt reflection after the experience or interrupt natural expression with guiding questions. These techniques can provide valuable insights but tend to focus on processing emotions after they've settled. *The Shape of Feeling,* however, introduces a new approach by capturing emotions as they emerge, making it possible to see and understand them in real time. This real-time visualization opens up new possibilities for strengthening emotional awareness as feelings are presently being felt.

Donald Schön's concept of reflection-in-action emphasizes the importance of reflecting while actively engaged in an experience (Schön, 1983). Though traditionally applied to professional practice and problem-solving, this principle is equally relevant when considering

emotional literacy. Analyzing our feelings as we vocalize them, without interruption, can be a powerful way to enhance emotional awareness. *The Shape of Feeling* builds on Schön's ideas by allowing people to reflect while actively expressing themselves. Through intimate, human-centered design, it opens an intuitive space for real-time emotional processing.

Significance

The Shape of Feeling is, at its core, an educational tool. It teaches people about emotions by turning verbal expression into something they can see and understand. What makes it so versatile is its universal visual language.

The 35 emotions come together to form a cohesive system, each intuitively representing a specific feeling. These intuitive designs make the tool accessible to diverse audiences, from young children to adults, across different cultural contexts. It's built on the simple, human premise that sentiments are embodied experiences. Whether used as a personal reflection tool, a therapeutic aid, or an academic resource, *The Shape of Feeling* can adapt to a multitude of settings.

As a personal tool, it acts as a visual diary, where people can vent, reflect, and track the evolution of their feelings over periods of time. There is significant potential for growth as a personal tool through features like independent user profiles. These profiles could store data on prominent or most recent emotions, giving users a clearer picture of their emotional patterns. Another possible feature could be folders dedicated to specific topics or life events, turning *The Shape of Feeling* into an emotional mapping tool that tracks how feelings change in relation to particular themes or situations.

In therapy, both clients and therapists can observe how emotions evolve throughout a session. Visualizing feelings as they are vocalized can make subtle emotional changes more apparent. This can help identify triggers, monitor changes, and recognize recurring patterns that might otherwise go unnoticed. Introducing user profiles within a therapeutic context could even further enhance this utility. By tracking emotional data over multiple sessions, both the client and therapist could observe long-term patterns and understand how specific topics or life events impact emotional states.

In academic settings, particularly with children aged 7 to 12, who are in the process of developing emotional self-awareness, *The Shape of Feeling* can be used as a gamified learning tool to teach emotional literacy. At this developmental stage, children are beginning to build their emotional vocabulary and develop a deeper understanding of their own feelings, but they may still struggle to articulate complex emotions. The tool could help students practice emotion labeling by "unlocking" emotions through speech. This approach encourages children to verbalize their feelings and experiment with different words and perspectives to better express their emotional states.

As an interactive exhibit, *The Shape of Feeling* becomes a communal experience that breaks down social barriers around vulnerability. Placing it in a public setting challenges the way we think about emotional expression. Discussing feelings is often considered private, but by introducing this tool as a soundproof booth where people can freely vocalize their emotions and see them, the exhibit creates a sense of collective human experience. It highlights how emotions are universal and shared, and can encourage more open dialog.

02 _ Context

Psychological Frameworks

Understanding emotions and accurately naming them is a core component in building emotional literacy. *The Shape of Feeling* explores how visualizing emotions in real time through speech can strengthen self-awareness by making abstract feelings perceptible. This project draws on multiple psychological frameworks to develop a system where verbal expression directly connects to visual representation.

Affect Labeling

Affect labeling, the practice of putting feelings into words, can reduce the intensity of negative emotions. Studies show that naming an emotion engages the brain's regulatory systems, shifting neural activity from the amygdala to the prefrontal cortex (Lieberman et al., 2007). This process makes emotions feel more manageable and less overwhelming. *The Shape of Feeling* extends this principle by creating a visual space where spoken words are transformed into shapes. This mirrored representation serves as a real-time form of affect labeling, and gives people a new way to process and understand their emotions as they speak.

Embodied Cognition

The theory of embodied cognition states that emotions manifest through bodily sensations, like tension, heaviness, or movement (Barsalou, 2008). I wanted to take this concept and use it to inform the design of each of the 35 "feeling sculptures" included in the library. With thorough research on how each emotion feels in our bodies, I applied these qualitative data points to the visualizations.

For example, joy is characterized by high arousal and positive activation. There is heightened activity in the dopaminergic reward system, including the ventral striatum, nucleus accumbens, and insula. Physiologically, it is associated with increased heart rate, smiling, warm skin, laughter, and a sense of lightness and openness. Joy also tends to be social and contagious, often co-activating mirror systems that make it naturally communal. The design created in response to these attributes is a bright yellow, glossy, reflective, asymmetrical sphere that bounces and pulses. These design choices are all direct symbolism for the aforementioned somatic traits associated with joy. The bouncing and pulsing motion reflects the increased heart rate and spontaneous movement impulses that come with joy. The glossy, reflective surface symbolizes the social and contagious nature of joy. The rounded, smooth shape represents the lack of tension typical of joyful states. While the bright yellow color reflects the warmth and vitality associated with joy. The shape is meant to feel alive and open, mimicking the feeling of joy itself. This translation from embodied cognition to visual design aims to let the viewer understand the emotion behind the visual intuitively.

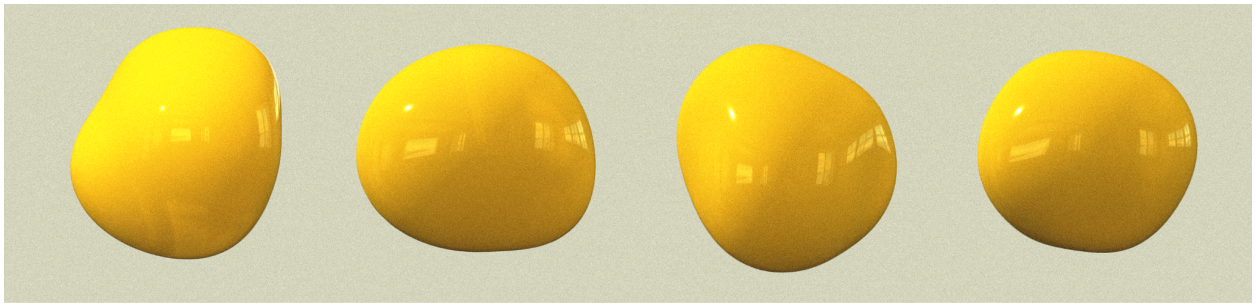

Figure 1_Joy Sequential States

Parallel Processing

Humans naturally process multiple streams of information at the same time. Combining what we hear, see, and feel is known as parallel processing. It helps us interpret complex experiences and blend cues to form a complete picture.

The Shape of Feeling uses parallel processing to help users reflect as they express. Verbal input (speech) and nonverbal output (shapes) happen simultaneously. The tool helps users make sense of their emotions in real time. It shows how changes in tone or word choice can shift the shape on screen in real-time, creating a visible link between verbal expression and emotional awareness. Instead of reflecting afterward, users can see their feelings evolve as they talk.

Nonverbal Communication

Humans have a natural ability to perceive emotions without verbalization. Research shows that up to 93% of emotional communication is nonverbal, with 55% conveyed through body language (Mehrabian, 1971). Nonverbal cues like facial expressions, body language, and visual signals play a significant role in how we perceive feelings.

The Shape of Feeling uses no words, only visualizations. Because of this, each shape needs to exist beyond a static design. It needs to use movement to express body language and other nonverbal cues. By giving the shapes a spatial presence I was able to maximize its actions on screen, creating human and expressive animations. Movements like pulsing into depth, floating around the screen, or jolting toward the viewer are intentionally chosen to make the emotion more intuitive and reflect certain gestures that emotions drive.

Visual Learning Theory

Visual learning theory suggests that seeing concepts can help people understand them more effectively. Emotions can be difficult to put into words, especially when they're complex or closely related. It's easy to label a feeling as joy when, in reality, it might be something more specific like contentment or gratitude. This tool is especially useful for visual learners, who may find it easier to grasp emotions when they are presented as tangible shapes. It lets people spot patterns by seeing recurring shapes and understand nuances in how the way they speak is tied to different emotions. This visual feedback loop shows instead of telling, and doesn't let subtle changes like tone go unnoticed.

03 _ Methodology

Scope

The Shape of Feelings consists of a database of 35 digital sculptures that each represent an emotion, feeling, or sentiment. These sculptures exist in a speech-to-visualization platform as the output of a user's emotional states in speech. This project combines natural language processing, emotion classification, and 3D rendering, drawing from both psychological theory and personal artistic interpretation. Overall, *the Shape of Feelings* was created in two parts.

1. Design and Development of Feelings Library

The first stage involved creating a library of "feeling sculptures." I started by examining well-researched emotion lists from psychological frameworks and studies, including Paul Ekman's model of basic emotions, Robert Plutchik's Wheel of Emotions, the Circumplex Model of Affect by James A. Russell, and Brené Brown's Atlas of the Heart. These models are widely recognized for categorizing and understanding human feelings.

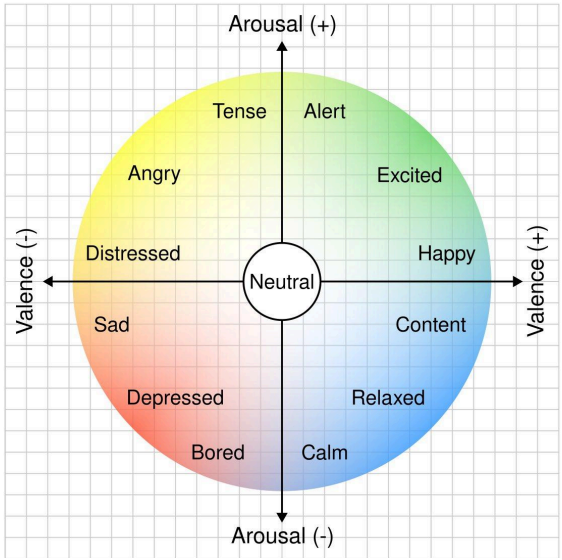

Figure 2_James A. Russell

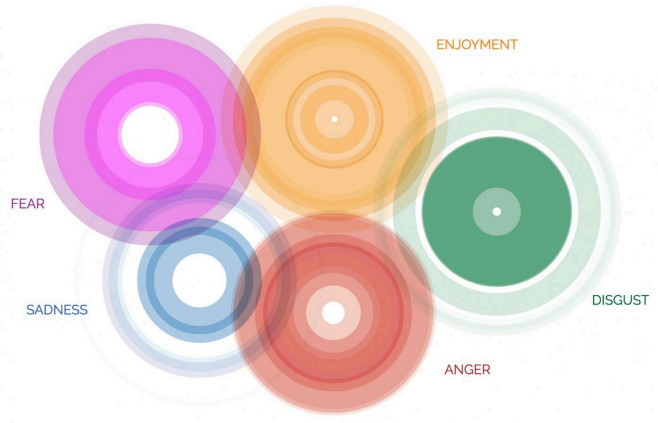

Figure 3_Paul Ekman

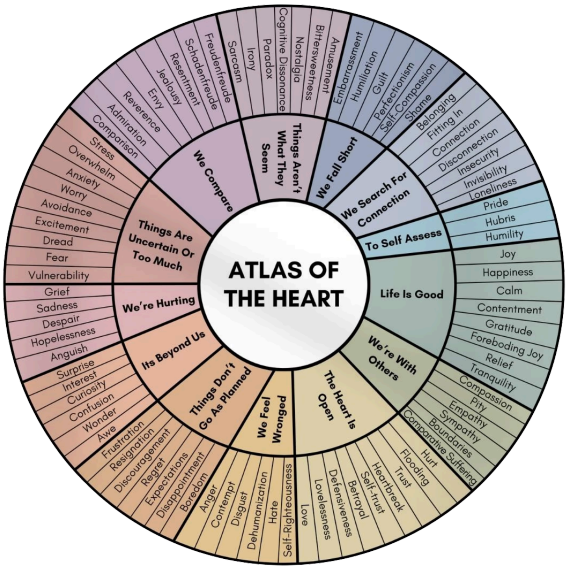

Figure 4_Brene Browne

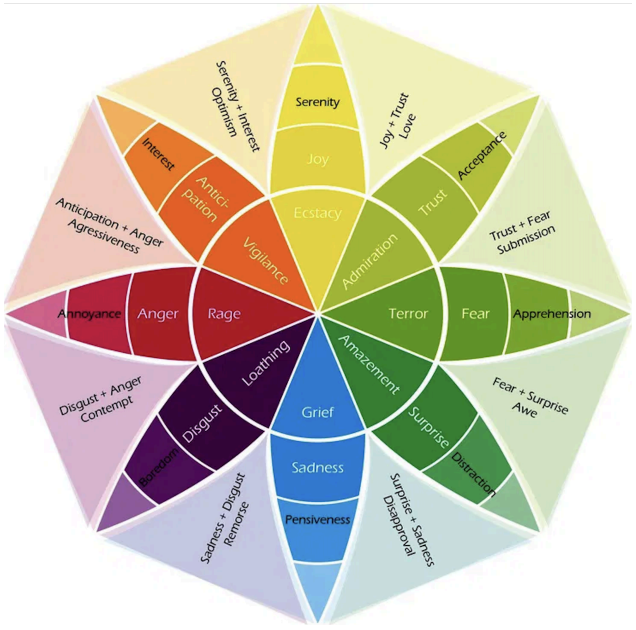

Figure 5_Robert Plutchik

From these sources, I curated a final list based on two main principles:

1. Relevance to Speech: The project specifically focuses on emotional states that naturally arise and are expressed verbally, particularly in monologues or private conversations. I prioritized sentiments that commonly appear in these contexts to cater to the most prominent use-cases for *The Shape of Feeling*. This way, the visualizations are more accurate and the tool itself is especially meaningful for verbal expression.
2. Clarity and Distinction: In real-time speech, closely related feelings can overlap, making it hard to distinguish between them. For example, emotions like "awe" and "reverence" can blur together when spoken. Therefore, I chose feelings that are different in how they manifest during verbal expression to maintain clarity. The Circumplex Model of Affect, which categorizes emotions based on arousal and valence, helped in selecting emotions that have high contrast in intensity and affective tone.

Final list of feelings, grouped into five main categories:

Core:

1. Joy
2. Sadness
3. Anger
4. Fear
5. Disgust
6. Surprise
7. Shame
8. Guilt
9. Love

Complex:

10. Nostalgia
11. Embarrassment
12. Vulnerability
13. Anxiety
14. Anticipation
15. Confusion
16. Contempt
17. Curiosity

Social:

18. Envy
19. Pride
20. Admiration
21. Gratitude
22. Compassion
23. Affection
24. Trust
25. Respect

Reflective/Introspective:

26. Contentment
27. Disappointment
28. Acceptance
29. Relief
30. Awe

Situational/State:

31. Worry
32. Stress
33. Frustration
34. Overwhelm
35. Despair

In designing the visualizations, my goal was to create a visual language that could be as universally interpreted and as intuitive to understand as possible. I wanted the viewer to look at an emotion and instinctively think, “This is exactly what I'm feeling, what is it?” To achieve this effect, I focused my research specifically on how each emotion feels in our mind and bodies, creating a neuropsychological profile for each one.

To build the designs, I first programmed a shape generator using Three.js that allowed me to manipulate various parameters, visual settings, and material properties. This generator gave me the freedom to prototype different shapes and motions, experimenting with how each variable influenced the shape’s dynamics and aesthetics.

The complete list of adjustable parameters included:

- Amplitude: Controls the size and expansion of the shape
- Frequency: Determines the speed of oscillation
- Bloom: Adjusts the light dispersion
- Noise Speed: Controls the rate of irregular motion or distortion
- Rotation Speed: Sets how quickly the shape rotates
- Rib Amplitude: Modifies the indentation of ribbing on the shape
- Rib Frequency: Determines how densely packed the ribbing is
- Color: Sets the primary color of the shape
- Point Mode: Toggles a point-based mesh instead of a solid surface
- Point Size: Controls the size of each point in point mode
- Use Texture: Enables uploading external textured surfaces
- Metalness: Determines the metallic quality of the surface

- Roughness: Adjusts the smoothness of the material
- Transmission: Controls the transparency of the shape
- Thickness: Affects the perceived depth of translucent areas
- Clearcoat: Adds an additional layer of reflective coating
- Clearcoat Roughness: Modifies the smoothness of the clear coat layer
- Environment Map Intensity: Controls the strength of reflections from the environment

With this tool, I could make informed visual decisions on which parameters best evoked specific feelings. For example, increasing amplitude and frequency produced more erratic, intense shapes, fit for emotions like anger or fear, while reducing frequency and adding smooth motion created calmer, more rounded forms, ideal for emotions like joy or respect.

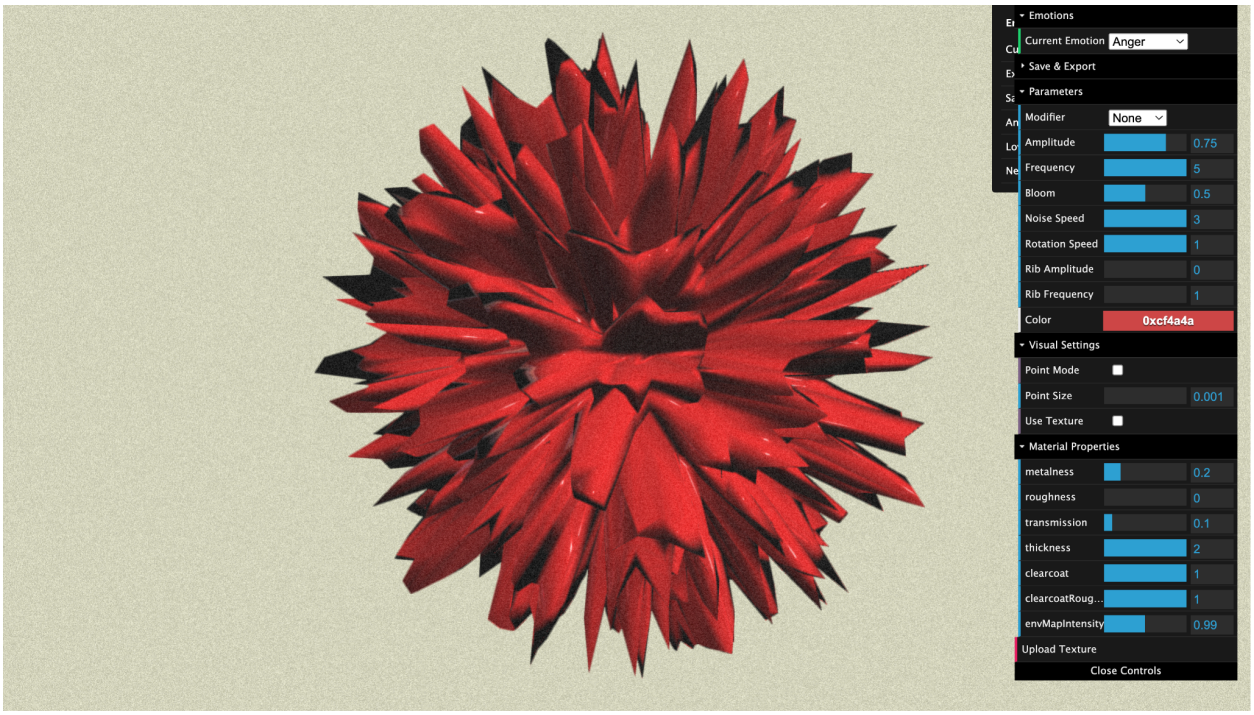

Figure 6_Shape Generator

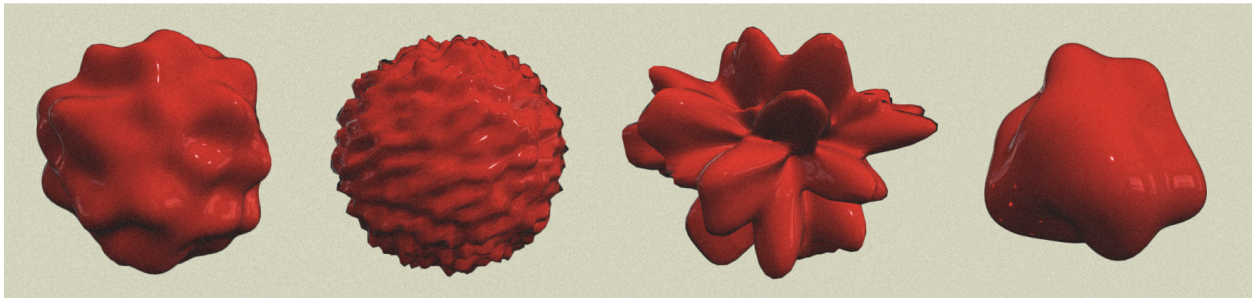

Figure 7_Shape Parameters

Once the generator was functional, I took each neuropsychological profile and mapped the qualitative properties to specific visual characteristics. These profiles were developed by researching traits like blood pressure, bodily temperature, tension, and behavioral inclinations or tendencies. By translating these psychological and physical states into data points, I created digital sculptures that accurately represent the feeling of each emotion.

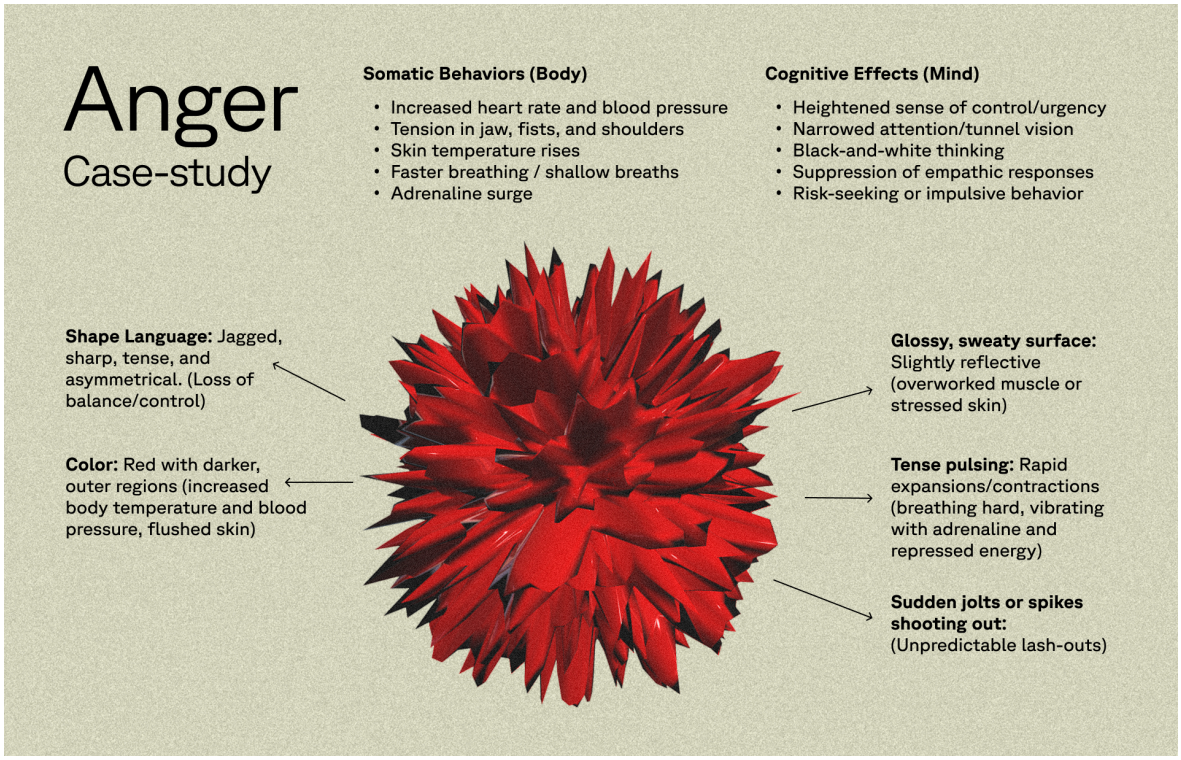

Figure 8_Anger Case Study

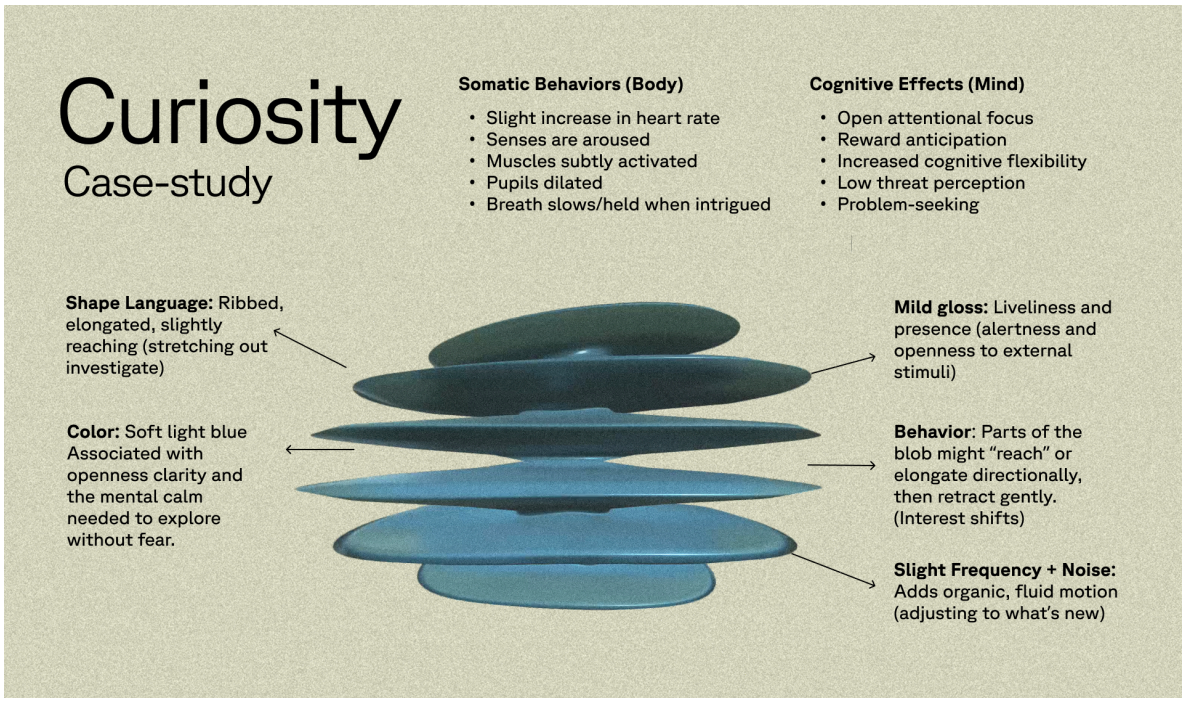

Figure 9_Curiosity Case Study

The result is a library of 35 dynamic digital sculptures that capture the physical and mental experience of feeling them. Each shape is designed to be unique and intuitive, creating a blend between data and the visceral human experience.

Figure 10_Emotion Library

2. . Real-Time Speech-to-Visualization System

Once the visual library was established, the next stage involved creating a system that could take real-time speech, understand the emotions that are showing up in the current dialog, and pull the corresponding visualizations from the library. This creates a smooth visual experience where the user's only needed interaction is to talk out loud.

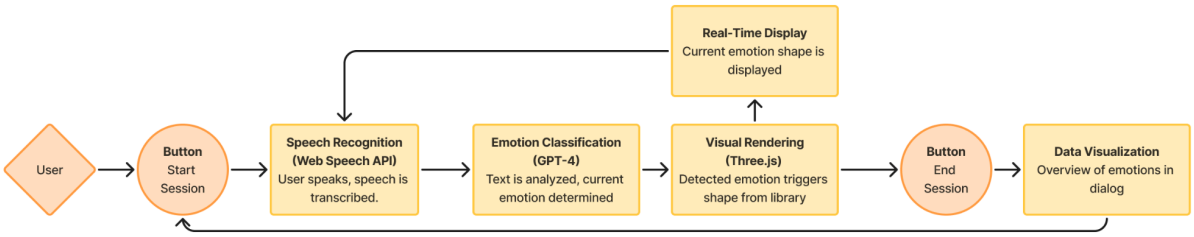

Figure 11_User Flow

User Experience Design

The Shape of Feeling was designed to be as seamless and intuitive as possible. The goal was to minimize user interaction, allowing users to focus only on verbalizing their emotions. Aside from speaking out loud, the user's only input is to click two buttons: Start Session and End Session. Once the session begins, the system automatically listens, analyzes, and visualizes without requiring any further manual input or navigation. This was intentionally decided so as to not interfere with the user's train of thought or emotional flow.

The system's architecture was built on three core technologies: speech recognition, emotion classification, and visualization rendering.

1. **Speech Recognition**

I used the Web Speech API to process verbal input in real time. This speech-to-text API continuously listens to the user and transcribes their words into text as they speak.

2. **Emotion Classification**

I then connected the transcribed text to a GPT-4-powered API (via OpenAI's endpoint) for emotional analysis. The model is specifically prompted to review the latest statements and determine the current emotion. To give the model the necessary context, I first provide it with the entire stream of dialog from start to finish, along with the currently visualized emotion. This setup makes sure that the model understands the ongoing conversation.

To keep the model responsive to recent changes, it pulls the latest statement every 7 words. This creates room for shifts in tone without looping on older parts of the conversation. The model then evaluates whether the current visualized state is still relevant or if it has shifted toward a new emotion from the curated list.

To avoid erratic changes, I added a two-step validation process. For an emotion to switch, the model needs to identify the new emotion twice consecutively. This double confirmation helps prevent switches based on brief or incomplete thoughts. For example, if the user says, "I'm feeling really anxious about this presentation," the model detects anxiety and visualizes it. If the user follows up with, "But I know I've prepared well," the system might momentarily detect calm. However, unless the model confirms calm twice in a row, the visualization remains in the anxiety state to maintain stability.

This entire approach ensures that the system has complete context of the conversation, avoids processing any statement in isolation, is immediately responsive to changes, and reflects switches between emotional states in a sustained way as opposed to quick fluctuations.

3. Visualization Rendering

Finally, the detected emotion is visualized as a 3D shape on the screen using Three.js. When the emotion changes, the system triggers a morphing animation that transitions one shape into the next. The aim was to create a very human switch between emotions, where they evolve into each other.

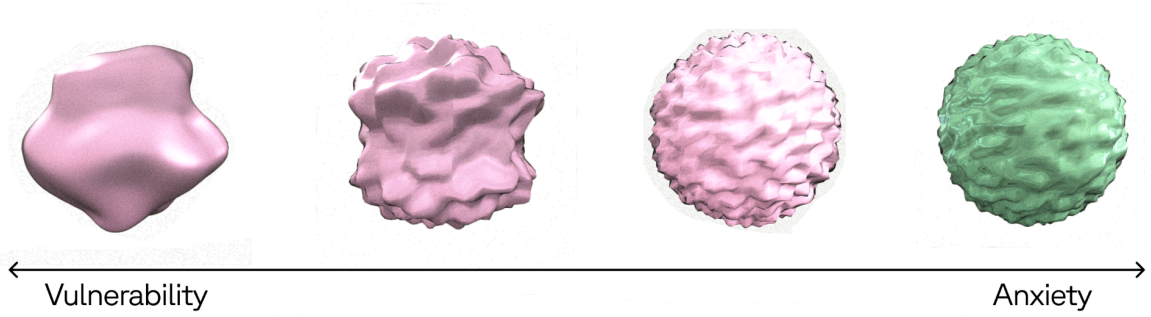

Figure 12_Emotion Morphing

04 _ Evaluation

The Shape of Feeling challenges how we think about emotional awareness. It makes something as abstract as a feeling, tangible, giving people the chance to see their emotions as they're being felt. This immediacy sets it apart from traditional reflection methods, which often happen after emotions have already settled. By combining real-time speech analysis with dynamic visual representation, it creates a space where verbal expression and emotional awareness coexist.

One of the most compelling aspects of the project is how it visualizes emotions without breaking the flow of expression. There's no need to stop and reflect mid-sentence or think too hard about what you're feeling. Instead, the visualization just happens, naturally and intuitively.

*The Shape of Feelin*g is also incredibly versatile. It adapts to different contexts without losing its core purpose: to make emotions visible. Whether it's used as a personal tool for reflection, a therapeutic aid, a teaching resource, or a public installation, it remains grounded in the same principle. Its universal visual language makes it accessible to people from different backgrounds, ages, and experiences.

There are still challenges to address. Capturing complex or mixed emotions can be tricky, especially when people express overlapping emotions. There is a lot of room to grow in exploring how to visualize multiple emotions at once, or variations of the same emotion. Another challenge is to capture non-verbal cues like body language and tone. Currently, the system relies on transcribing speech to text, so aspects beyond your word choice and time tracking are not accounted for.

But ultimately, *The Shape of Feeling* demonstrates the potential of design and technology to transform emotional literacy. Real-time connection between verbal expression and visual

representation encourages people to become more attuned to their feelings, and look deeper at how emotions manifest and shift in the moment.

The project highlights the role that interactive and dynamic visualization can play in emotional education. As emerging technologies continue to shape how we communicate and process information, *The Shape of Feeling* points to a future where design and technology actively support emotional awareness, making abstract experiences more tangible and accessible.

05 _ Reflection

Understanding and visualizing emotions has been central to my creative practice. I've commonly approached this challenge through fine arts, specifically trying to capture feelings through portraits. This exploration has given me insight into using gestures, forms, and colors to evoke emotions. Over the past two years, I have expanded this exploration into technological areas. These include but are not limited to code, data visualization, animation, and interaction design. My reasoning for shifting to technology as a method for capturing emotions was to overcome the limitations inherent in traditional human-centered design approaches. I wanted to explore how technology could offer new ways of visualizing and interacting with complex emotional states.

However, using computers to visualize something so inherently human and fluid comes with a multitude of challenges. This thesis addressed many of them, the first being the use of machine learning models to analyze sentiment. This approach felt almost contradictory to the nature of the project. I aimed to capture the unpredictable and nuanced ways that emotions manifest, yet the tools I used seemed determined to box them into predefined categories.

To work around this, I took an iterative approach. I experimented, tested, and refined to develop custom frameworks that would guide the AI's interpretation of emotion. Instead of relying solely on standard sentiment models, I created tailored prompting structures informed by extensive psychological research. These frameworks aimed to help guide the model in recognizing emotions as dynamic and multifaceted rather than fixed or one-dimensional.

Even with these efforts, there were inevitable limitations. Sometimes the AI would still produce overly simplistic outputs, reminding me of the fundamental gap between human

intuition and algorithmic processing. It made me question how much we can really rely on machines to understand something so complex and personal.

However, as much as I grappled with the limitations of AI, I also recognized that these tools fundamentally shaped the way this project came to life. Translating abstract feelings into visual forms in real time required a computational approach. I needed to use algorithms to create something dynamic and responsive in real-time. In that sense, the project became less about perfectly translating emotions through AI and more about finding ways to make the technology serve the exact, human-centered vision I was aiming for.

Another significant challenge was designing emotions within the constraints of programming. Digital interfaces driven by code tend to produce visuals that are overly structured, sterile, and generative. Their polish pushes away intimacy and authenticity. When it came to translating emotions into visual form without losing their essence, I needed to be very intentional with each design. I deliberately leaned into an analog-inspired design approach. The interface and emotion library was inspired by fine arts, thinking about how paintings and sculpture can convey presence and evoke emotions without being overly literal. This pushed me to think beyond flat visuals and create 3D shapes that looked like they were almost alive in their own way.

I incorporated textures like grain and subtle noise to break uniformity and give the shapes a tactile quality. I used the digital precision that comes with code, but I combined it with an analog aesthetic to create a more intimate and approachable digital space. My aim was to balance the technical with the human. To use computational tools without losing the raw qualities that makes emotions feel real.

Bibliography

Barrett, Lisa Feldman. 2017 a. How Emotions Are Made: The Secret Life of the Brain. Houghton Mifflin Harcourt. https://psycnet.apa.org/record/2017-26294-000

Barrett, a leading affective scientist, presents the theory of constructed emotion, arguing that emotions are not hard-wired but are actively made by the brain's interpretations of bodily sensations in context.

Barsalou, Lawrence W. 2008. "Grounded Cognition." Annual Review of Psychology 59: 617–645. https://pubmed.ncbi.nlm.nih.gov/17705682/

Barsalou's influential review introduces embodied (grounded) cognition, the idea that cognitive processes are deeply rooted in the body's interactions with the world. He proposes that mental representations are partly simulations of sensory, motor, and introspective states rather than abstract symbols.

Ekman, Paul. 1992. "An Argument for Basic Emotions." Cognition & Emotion 6(3–4): 169–200. https://psycnet.apa.org/record/1993-00392-001

Ekman argues that a limited number of core emotions (such as joy, anger, fear, disgust, sadness, and surprise) are biologically basic. He presents evidence of universal facial expressions and distinct physiological patterns for these emotions across cultures.

Halberstadt, Amy G., Alison E. Parker, and Vanessa L. Castro. 2013. "Nonverbal Communication: Developmental Perspectives." In Nonverbal Communication, edited by J. A. Hall and M. L. Knapp, 93–128. Berlin: De Gruyter Mouton.

https://www.researchgate.net/publication/257332909_Nonverbal_communication_Developmental_perspectives

This book chapter reviews how nonverbal emotional communication (facial expressions, voice tone, gestures) emerges and changes from infancy through adulthood. Guided by an Affective Social Competence model, it examines how children learn to send, receive, and understand emotional cues as they grow.

Kircanski, Katharina, Matthew D. Lieberman, and Michelle G. Craske. 2012. "Feelings into Words: Contributions of Affect Labeling to Exposure Therapy." Psychological Science 23(10): 1086–1091. https://pmc.ncbi.nlm.nih.gov/articles/PMC4721564/

Kircanski et al. explores affect labeling in a clinical context. In an exposure therapy study for phobic participants, they found that those instructed to put their feelings into words during exposure (literally labeling their anxiety) showed lower physiological fear responses and greater approach behavior at follow-up, compared to those who did exposure without labeling.

Lieberman, Matthew D., Naomi I. Eisenberger, Molly J. Crockett, Sabrina M. Tom, Jennifer H. Pfeifer, and Baldwin M. Way. 2007. "Putting Feelings Into Words: Affect Labeling Disrupts Amygdala Activity in Response to Affective Stimuli." Psychological Science 18(5): 421–428. https://pubmed.ncbi.nlm.nih.gov/17576282/

This neuroscience study used fMRI to show that when individuals labeled emotional images with emotion words, their brain's emotional center (the amygdala) became less active, while regions of the prefrontal cortex involved in verbal processing and control became more active.

Mehrabian, Albert. 1972. Nonverbal Communication. Chicago: Aldine-Atherton. https://archive.org/details/nonverbalcommuni0000mehr

Mehrabian's book summarizes his research on the relative impact of verbal and nonverbal channels in conveying feelings and attitudes. It famously reported that words account for only a small fraction of the emotional meaning in communication (around 7%).

Niedenthal, Paula M. 2007. "Embodying Emotion." Science 316(5827): 1002–1005. https://psycnet.apa.org/record/2007-07789-005

Niedenthal's review in Science explains how embodied simulation is integral to emotion. She notes that thinking about or perceiving an emotion activates the same somatic and motor systems involved in actually experiencing that emotion.

Picard, Rosalind W. 1997. Affective Computing. Cambridge, MA: MIT Press. https://archive.org/details/affectivecomputi0000pica/page/n3/mode/2up

Picard lays out the vision for computers that can recognize, interpret, and respond to human emotions. She provides the theoretical framework and early practical insights for giving machines emotional intelligence, effectively launching the field of affective computing.

Plutchik, Robert. 1980. "A General Psychoevolutionary Theory of Emotion." In Emotion: Theory, Research, and Experience, vol. 1, edited by Robert Plutchik and Henry Kellerman, 3–33. New York: Academic Press.

https://api.pageplace.de/preview/DT0400.9781483270012_A23871774/preview-9781483270012_A23871774.pdf

Plutchik's chapter presents his psychoevolutionary theory, famously including the Wheel of Emotions. He proposes eight primary emotions (joy, trust, fear, surprise, sadness, disgust, anger, anticipation) arranged in polar opposites, and shows how more complex emotions arise from combinations of these basic emotions.

Russell, James A. 1980. "A Circumplex Model of Affect." Journal of Personality and Social Psychology 39(6): 1161–1178. https://www.researchgate.net/publication/235361517_A_Circumplex_Model_of_Affect

Russell's paper introduces the circumplex model, which maps emotions onto a circular space defined by two axes: valence (pleasure–displeasure) and arousal (activation level). According to this model, any given affective state can be described as a blend of how positive/negative it is and how high/low arousal it is; for example, excitement is high arousal + positive valence, whereas sadness is low arousal + negative valence.

Schön, Donald A. 1983. The Reflective Practitioner: How Professionals Think in Action. New York: Basic Books. https://archive.org/details/reflectivepracti0000scho

Donald Schön's seminal work explores how professionals develop knowledge through practice, emphasizing the concept of "reflection-in-action," the process of thinking critically and adaptively while engaged in a task.

Torre, Jared B., and Matthew D. Lieberman. 2018. “Putting Feelings Into Words: Affect Labeling as Implicit Emotion Regulation.” Emotion Review 10(2): 116–124. https://journals.sagepub.com/doi/full/10.1177/1754073917742706

This article is a contemporary review of affect labeling research. Torre and Lieberman survey behavioral and neuroimaging studies (including Lieberman 2007 and others) to explain how simply naming one’s emotions can serve as an implicit form of emotion regulation.