

User interface design

**Week7: Emotional Interactions: Emotions and user experience,
anthropomorphism**

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Outline

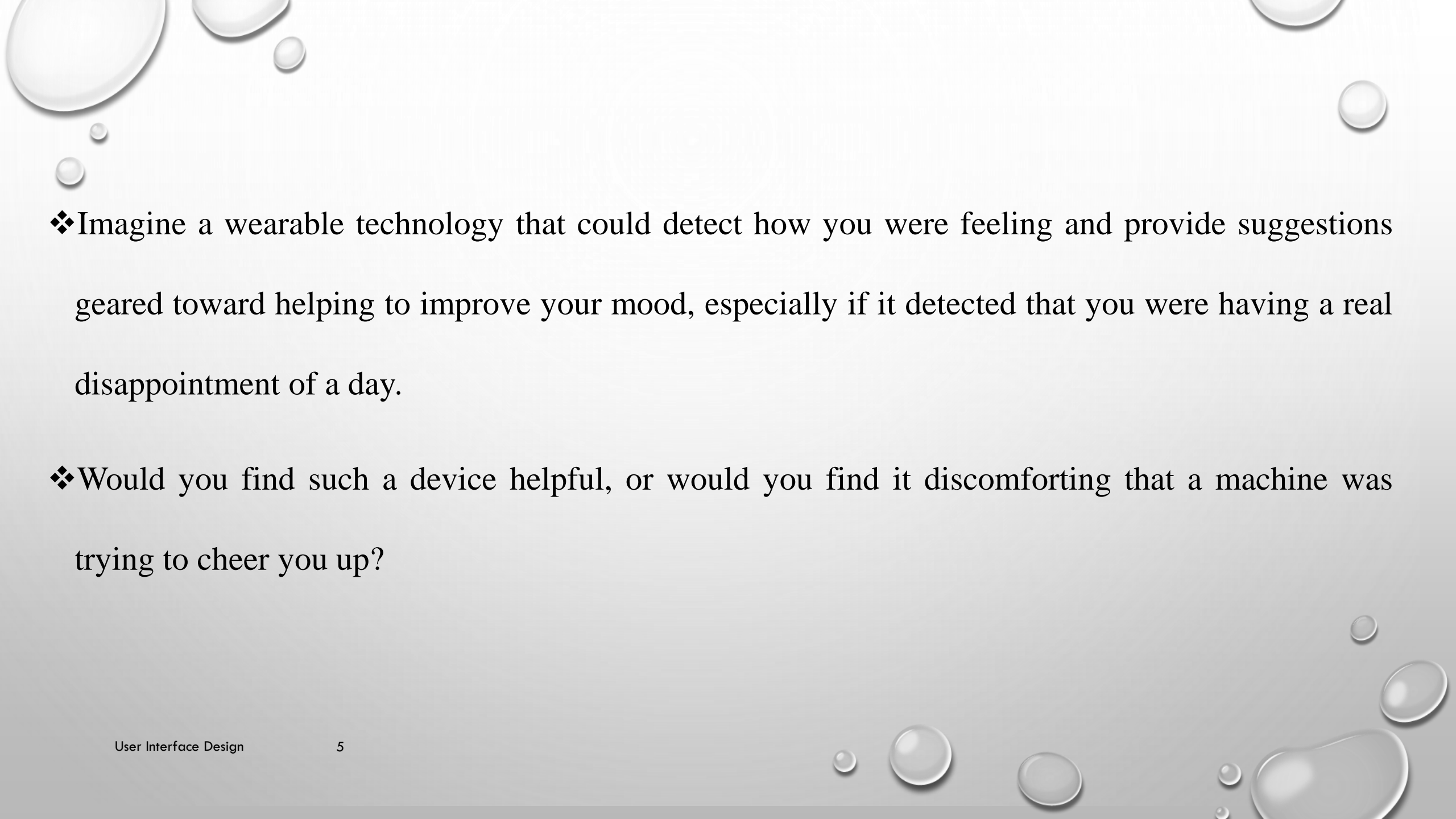
- ❖ Intended learning outcomes
- ❖ Emotions and Behavior (user experience)
- ❖ Expressive Interfaces: Aesthetic or Annoying?
- ❖ Affective Computing and Emotional AI
- ❖ Anthropomorphism


Intended learning outcomes


- ❖ Students should gain a comprehensive understanding of what emotional design is and why it is crucial for user experience.
- ❖ Students should gain a solid understanding of the concept of anthropomorphism and how it relates to the design of interfaces and products.

Introduction to emotional interaction

- ❖ When you receive some bad news, how does it affect you?
- ❖ Do you feel upset, sad, angry, or annoyed or all of these?
- ❖ Does it put you in a bad mood for the rest of the day?
- ❖ How might technology help?

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- ❖ Imagine a wearable technology that could detect how you were feeling and provide suggestions geared toward helping to improve your mood, especially if it detected that you were having a real disappointment of a day.
 - ❖ Would you find such a device helpful, or would you find it discomfoting that a machine was trying to cheer you up?

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- ❖ There are many potential applications for using automatic emotion sensing, other than those intended to cheer someone up, including health, retail, driving, and education.
 - ❖ These can be used to determine if someone is happy, angry, bored, frustrated, and so on, in order to trigger an appropriate technology intervention, such as making a suggestion to them to stop and reflect or recommending a particular activity for them to do.

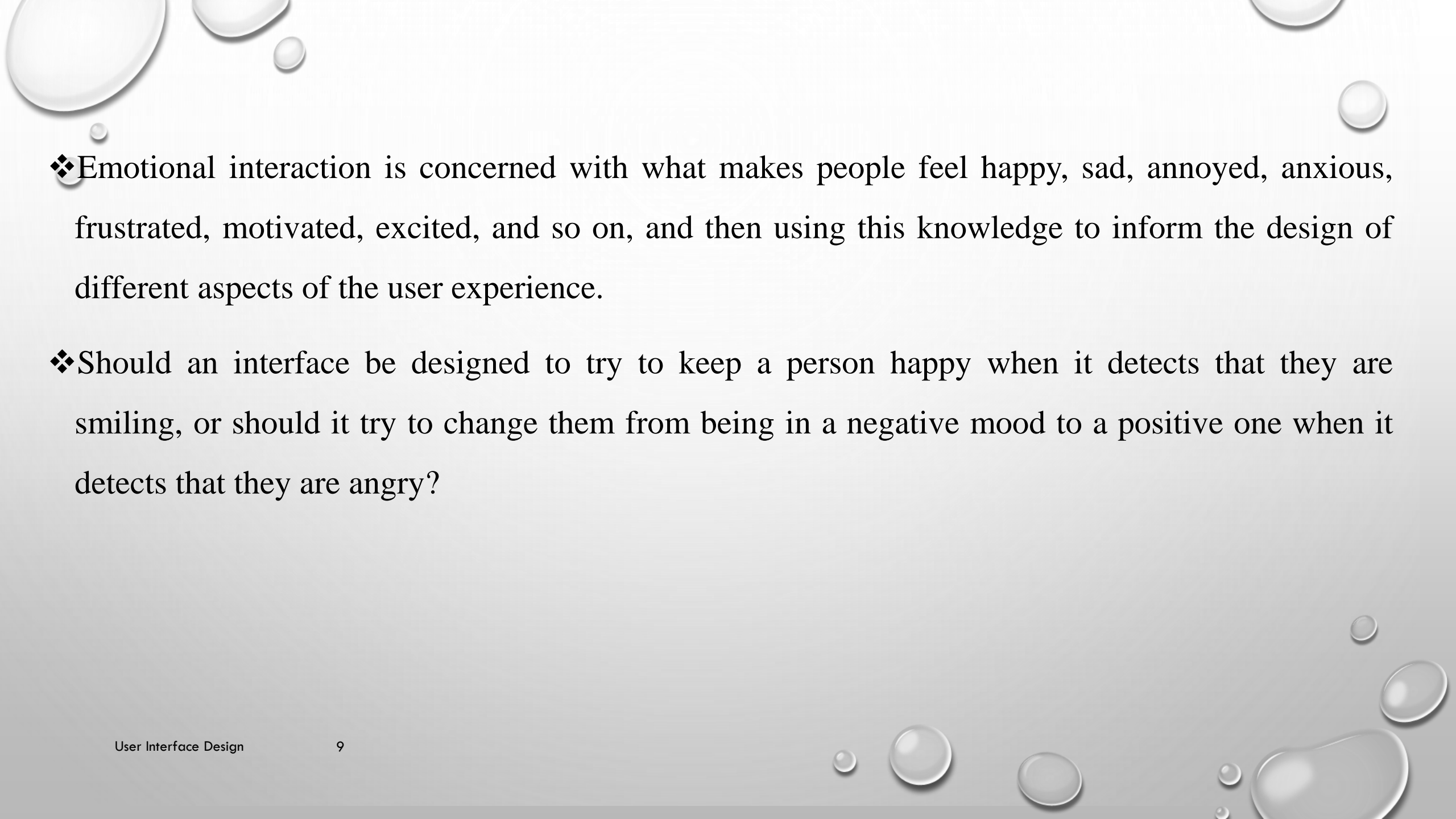



❖ The focus is on how to design interactive products to evoke certain kinds of emotional responses in people.

❖ It also examines why people become emotionally attached to certain products, how social robots might help reduce loneliness, and how to change human behavior through the use of emotive feedback.

Emotions and Behavior (user experience)

- ❖ Consider the different emotions one experiences throughout a common everyday activity like shopping online for a product, such as a new laptop, a sofa, or a vacation.
- ❖ First, there is the realization of needing or wanting one and then the desire and anticipation of purchasing it.
- ❖ This is followed by the joy or frustration of finding out more about what products are available and deciding which to choose from potentially hundreds or thousands of them by visiting numerous websites.

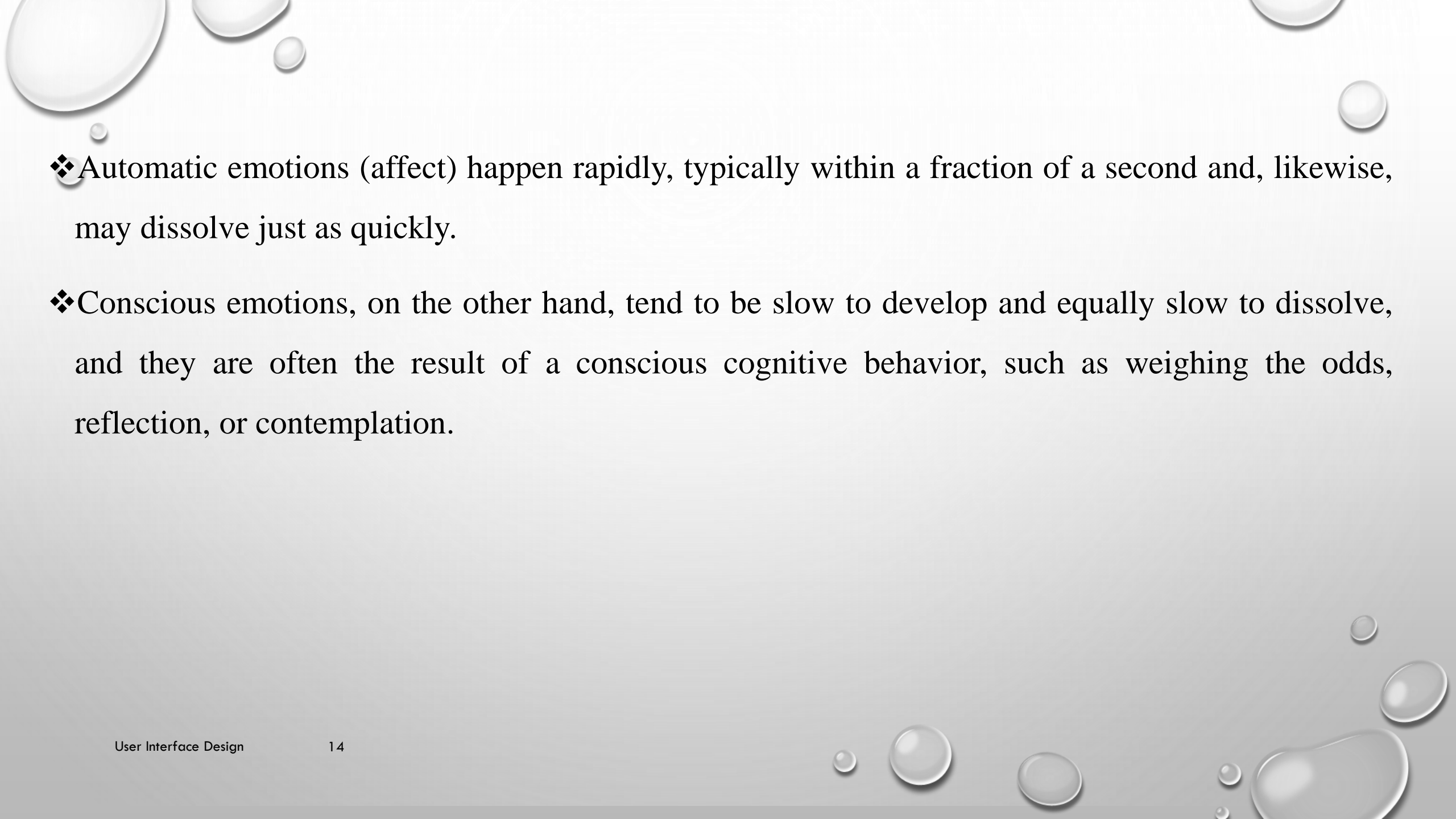
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- ❖ Emotional interaction is concerned with what makes people feel happy, sad, annoyed, anxious, frustrated, motivated, excited, and so on, and then using this knowledge to inform the design of different aspects of the user experience.
 - ❖ Should an interface be designed to try to keep a person happy when it detects that they are smiling, or should it try to change them from being in a negative mood to a positive one when it detects that they are angry?

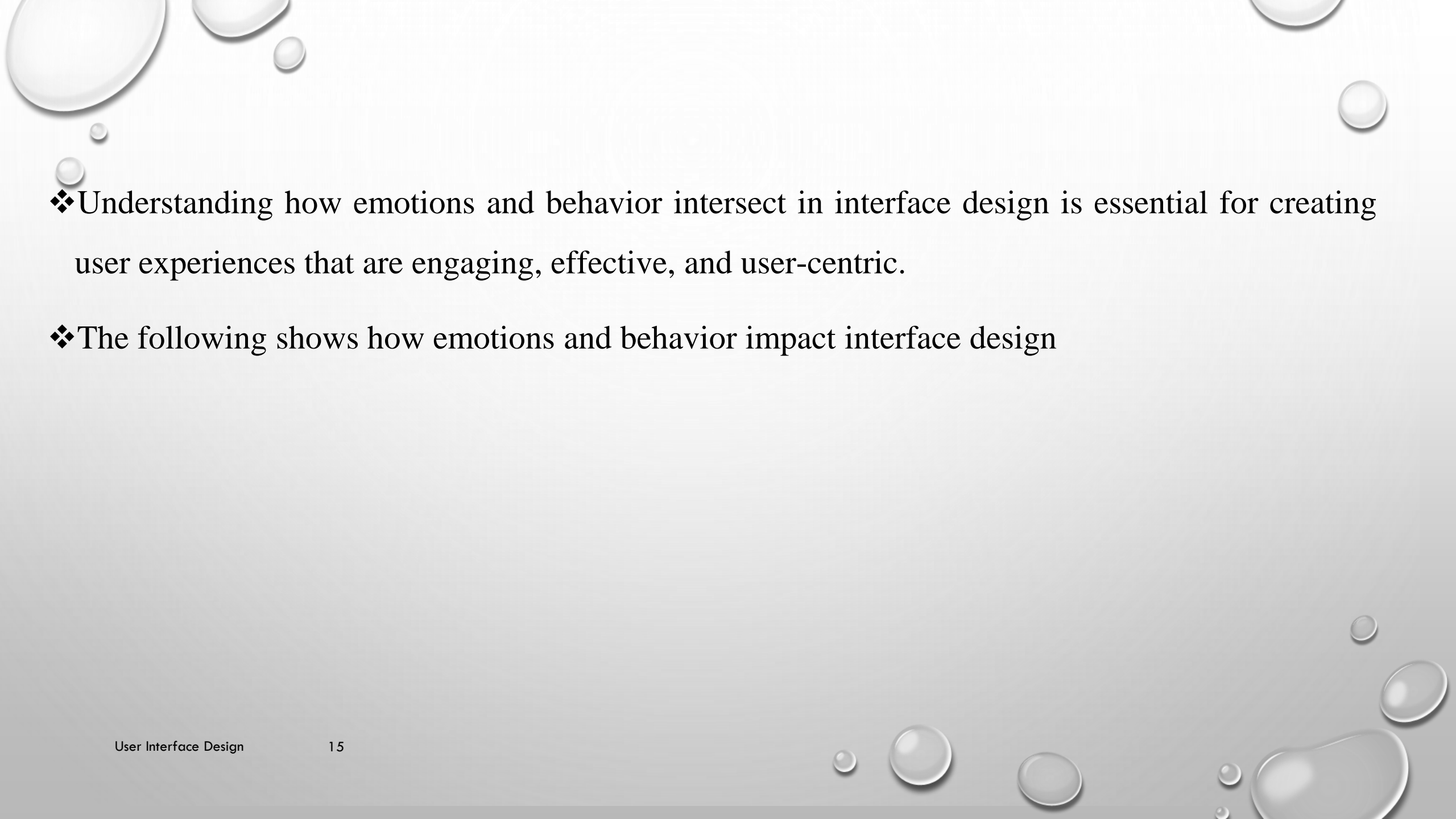
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- ❖ Having detected an emotional state, a decision has to be made as to what or how to present information.
 - ❖ Should it try to “smile” back through using various interface elements, such as emojis, feedback, and icons? How expressive should it be?
 - ❖ It depends on whether a given emotional state is viewed as desirable for the user experience or the task at hand.

- ❖ An emotion like jealousy can keep boiling for a long period of time, establishing itself on seeing or hearing something about the person or thing that triggered it.
- ❖ The terms emotion, mood, and feeling are often used interchangeably. However, they can differ in temporality.
- ❖ Emotions tend to happen in the moment as a response (e.g., crying) to a trigger (e.g., becoming sad on hearing someone has died).

- ❖ A mood is more a frame of mind or nature that can develop and last for longer periods of time.
- ❖ Feelings can be either an expression of an emotion (e.g., he felt sad) or a mood (e.g., she felt grumpy).
- ❖ A good place to start understanding how emotions affect behavior and how behavior affects emotions is to examine how people express themselves and read each other's expressions.

- ❖ This includes understanding the relationship between facial expressions, body language, gestures, and tone of voice.
- ❖ For example, when people are happy, they typically smile, laugh, and relax their body posture.
- ❖ When they are angry, they might shout, gesticulate, tense their hands, and screw up their face.
- ❖ A person's expressions can trigger emotional responses in others. i.e. when someone smiles, it can cause others to feel good and smile back.

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- ❖ Automatic emotions (affect) happen rapidly, typically within a fraction of a second and, likewise, may dissolve just as quickly.
 - ❖ Conscious emotions, on the other hand, tend to be slow to develop and equally slow to dissolve, and they are often the result of a conscious cognitive behavior, such as weighing the odds, reflection, or contemplation.

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- ❖ Understanding how emotions and behavior intersect in interface design is essential for creating user experiences that are engaging, effective, and user-centric.
 - ❖ The following shows how emotions and behavior impact interface design

Emotional Design:

- ❖ Emotionally driven design aims to evoke specific emotional responses from users. This involves using color schemes, visuals, and animations that vibrate with the desired emotional tone. For example, calming colors can be used in meditation apps to induce relaxation.

User Engagement:

- ❖ Positive emotions can enhance user engagement. When users have enjoyable and emotionally satisfying experiences, they are more likely to return to the interface, interact more frequently, and spend more time on it.

Feedback and Rewards:

- ❖ Providing feedback and rewards based on user behavior can influence their emotions. For example, earning badges or receiving positive feedback for completing tasks can boost users' sense of achievement and motivation.

Behavior Modeling:

- ❖ Interface design can leverage psychological principles to influence user behavior. For instance, applying the principle of "scarcity" by showing limited availability of a product can encourage users to make quicker purchasing decisions.

Usability and Frustration:

❖ Poorly designed interfaces that frustrate users can lead to negative emotions, such as frustration.

It's essential to prioritize usability and ease of use to prevent these negative emotional responses.

Persuasion and Decision-Making:

❖ Emotional design can guide users through decision-making processes. Emotional appeal in product descriptions, images, and persuasive copy can influence users to make choices aligned with their emotions and desires.

User Motivation:

- ❖ Emotions can serve as powerful motivators. Interfaces can tap into users' emotional needs and motivations, helping them set and achieve goals. For example, fitness apps often incorporate motivational messages and rewards to encourage users to exercise regularly.

User Trust and Confidence:

- ❖ Building trust is essential for user behavior. A well-designed interface that conveys credibility and reliability can instill trust in users, encouraging them to engage with the platform.

Emotional and behavior models in interface design

- ❖ Emotion and behavior models in interface design provide frameworks and guidelines for designers to understand and address the psychological and emotional aspects of user interactions.
- ❖ These models help designers create interfaces that are more user-centric, engaging, and effective.

Emotional Design Model (Donald Norman)

- ❖ Anthony Ortony, Don Norman, and William Revelle (2005) developed a classic model of emotion and behavior couched in terms of different “levels” of the brain.
- ❖ It focuses on the three levels of emotion in design: visceral, behavioral, and reflective. Designers should consider how to evoke emotional responses at each of these levels to create a more compelling user experience.

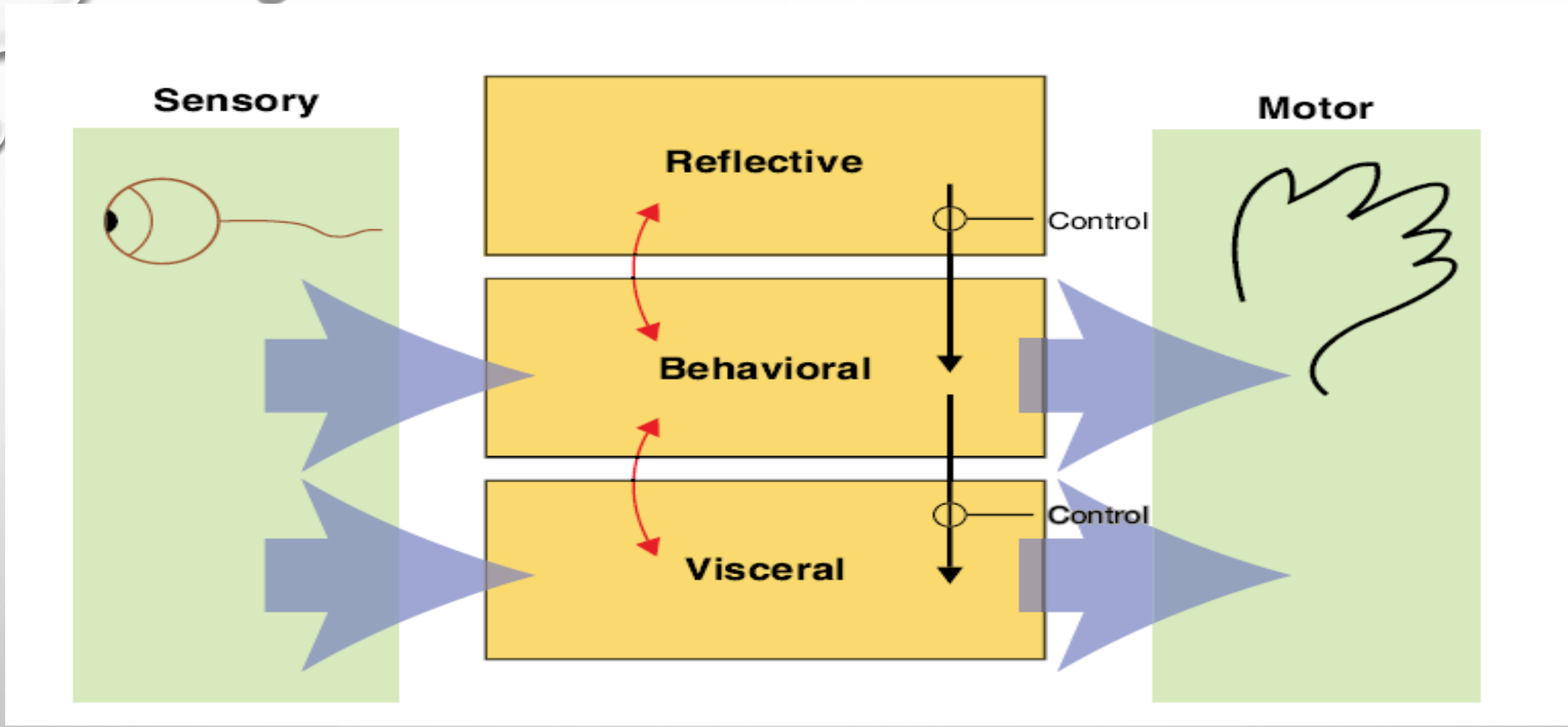


Figure 1: Anthony Ortony model of emotional design showing three levels: visceral, behavioral, and reflective (Yvonne Rogers, 2023, P.178)

- ❖ At the lowest level (visceral) are parts of the brain that are prewired to respond automatically to events happening in the physical world. It responds rapidly, making judgements.
- ❖ At the next level (behavioral) are the brain processes that control everyday behavior. Here most human activities occur. Examples include well-learned routine operations such as talking, typing
- ❖ At the highest level (reflective) are brain processes involved in contemplating. Its where people generalize across events or step back from their daily routines.

- ❖ An example is switching between thinking about the narrative structure and special effects used in a horror movie and becoming scared at the visceral level when watching the movie.
- ❖ One way of using the model is to think about how to design products in terms of the three levels.
- ❖ Visceral design refers to making products look, feel, and sound good.
- ❖ Behavioral design is about use and equates to the traditional values of usability.
- ❖ Reflective design is about considering the meaning and personal value of a product in a particular culture.

The Wheel of Emotion (Robert Plutchik)

- ❖ Plutchik's model identifies seven primary emotions and their varying intensities. These include; anger, disgust, fear, sadness, anticipation, joy, and surprise.
- ❖ It also includes trust as another one which is not usually considered as an emotion.
- ❖ Alongside these typical responses are labels (optimism, love, submission, awe, disapproval, remorse, contempt, aggressiveness).
- ❖ Designers can use this model to understand how different design elements, such as color, imagery, and typography, may evoke specific emotional responses in users.

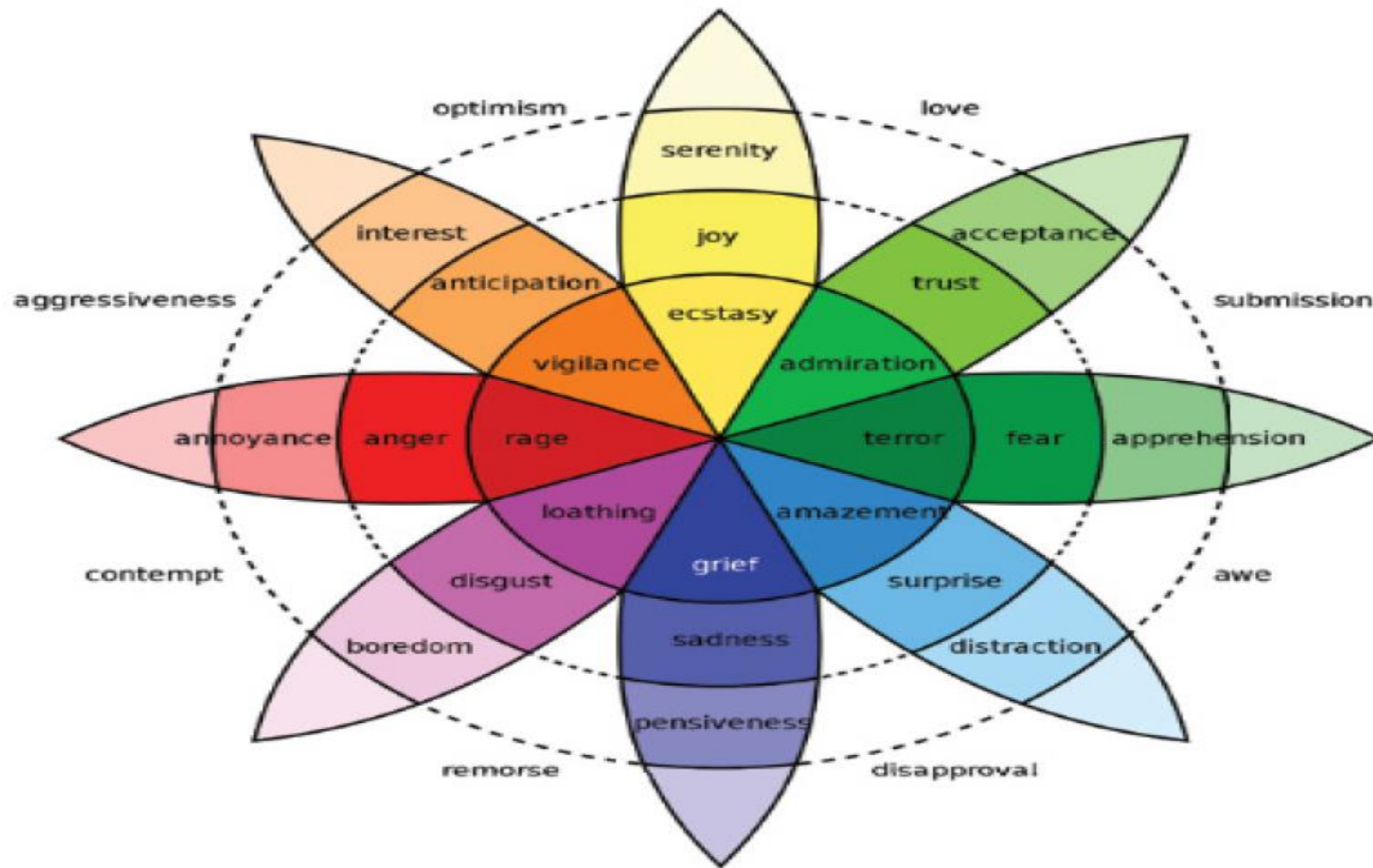
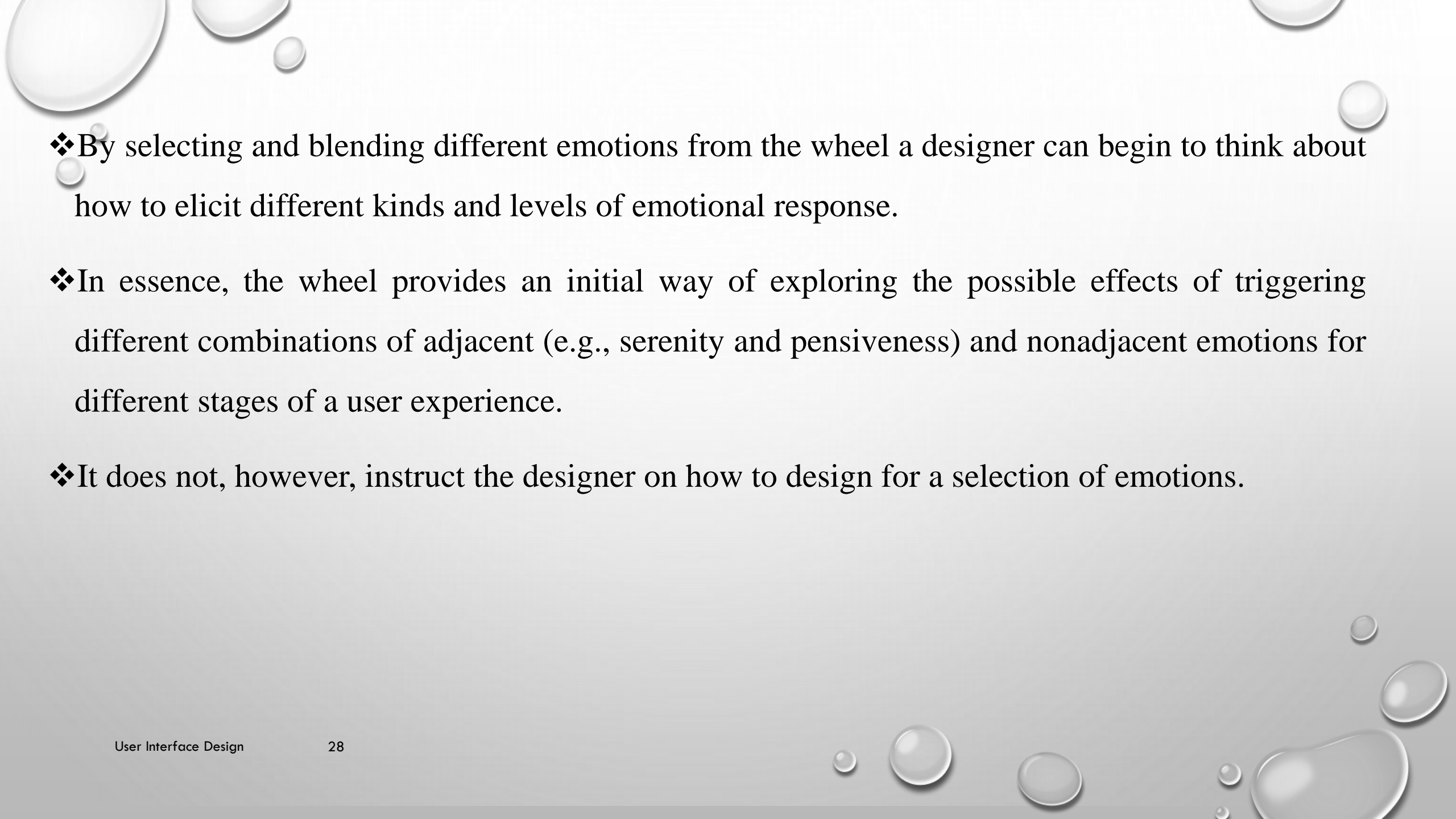


Figure 2: Plutchik's wheel of emotions (Yvonne Rogers, 2023, P.180)

- ❖ The colors used in the wheel reflect the intensity of an emotion: the darker the shade, the more intense the emotion is.
- ❖ Thus, the emotions in the middle of the wheel are seen as more intense; for example, rage is shown in the middle of the circle as blood red, whereas anger is shown on the outside of the circle in light red.
- ❖ The wheel can be used as a “color palette” akin to a UX mood board.

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- ❖ By selecting and blending different emotions from the wheel a designer can begin to think about how to elicit different kinds and levels of emotional response.
 - ❖ In essence, the wheel provides an initial way of exploring the possible effects of triggering different combinations of adjacent (e.g., serenity and pensiveness) and nonadjacent emotions for different stages of a user experience.
 - ❖ It does not, however, instruct the designer on how to design for a selection of emotions.

Expressive Interfaces: Aesthetic or Annoying?

- ❖ A number of features have been developed to make an interface expressive, including emojis, sounds, colors, shapes, icons, animations, videos, photos, and virtual agents.
- ❖ Besides using visual techniques, other ways of conveying expressivity include “sonifications” indicating actions and events and vibrotactile feedback.




The motivation is often to

- ❖ Create an emotional connection or feeling with people for instance, warmth, or sadness, and/ or
- ❖ Elicit certain kinds of emotional responses in people, such as feeling at ease, comfort, and happiness.

Aesthetic Aspects

- ❖ **Engagement and Delight:** Expressive interfaces can captivate users and make the user experience more engaging and enjoyable. Well-designed animations, transitions, and visual elements can create a sense of delight and surprise.
- ❖ **Brand Identity:** Expressive interfaces can reinforce a brand's identity and personality. When design elements align with the brand's values and resonate with its target audience, they contribute to a strong brand image.




❖ **Memorability:** Interfaces with unique and expressive features tend to be more memorable. Users are more likely to remember and return to an interface that leaves a strong impression.

❖ **Creativity and Innovation:** Expressive interfaces often involve creative and innovative design approaches. They can set an interface apart from competitors and show a commitment to innovation

Potentially Annoying Aspects

- ❖ **Distractibility:** Excessive use of expressive elements can distract users from their primary tasks. An interface that prioritizes aesthetics over functionality may hinder user productivity.
- ❖ **Performance Issues:** Complex animations or graphics can slow down an interface's performance, leading to frustration among users who expect quick and responsive interactions.
- ❖ **Accessibility Challenges:** Expressive design elements can pose challenges for users with disabilities, such as those with visual impairments who rely on screen readers.

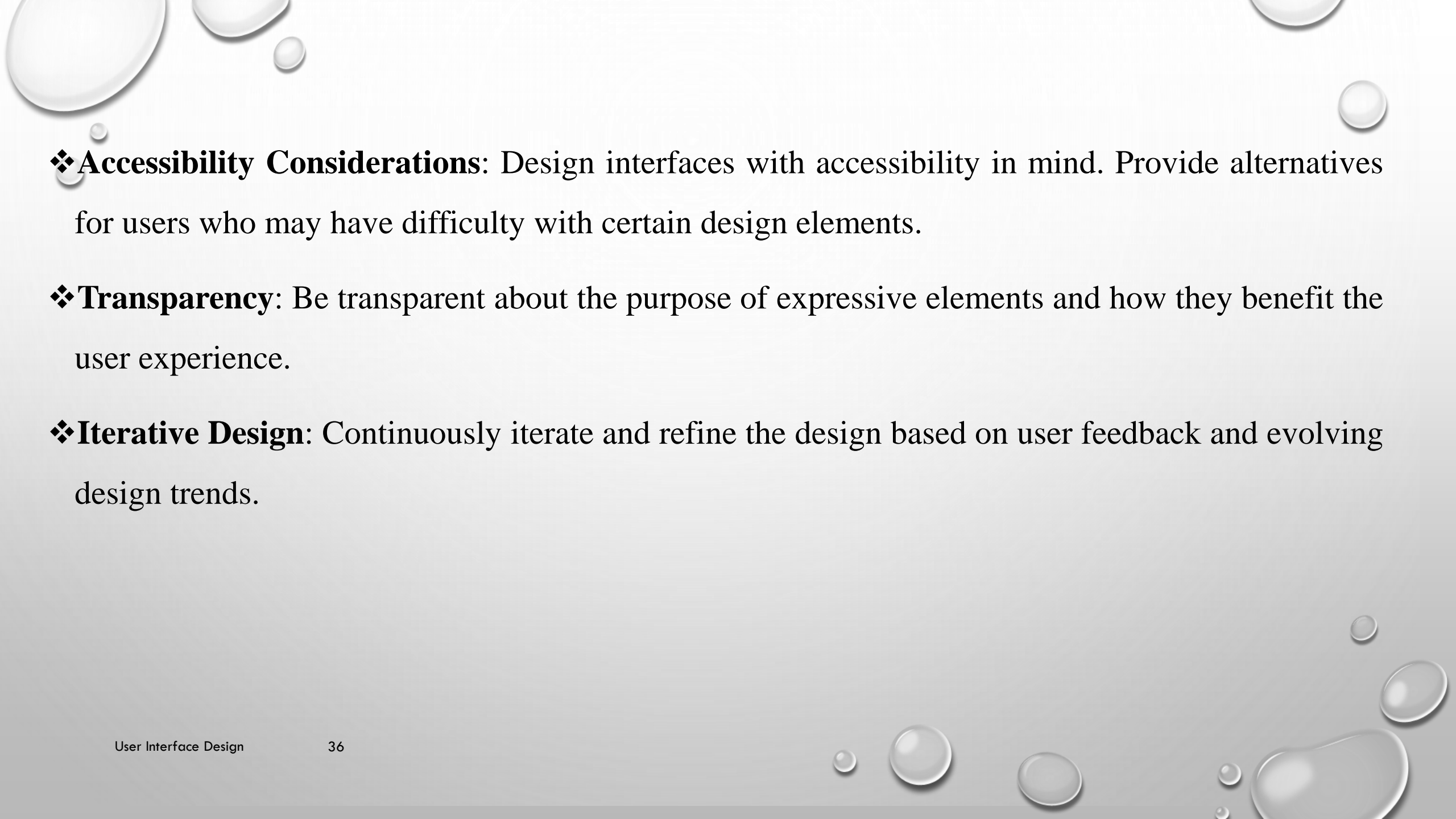


❖ **User Preferences:** User preferences vary widely, and what one user finds aesthetically pleasing, another may find annoying. Offering personalization options can help cater to individual preferences.

❖ **Cultural Sensitivity:** Cultural and regional differences can affect users' perceptions of expressive design. Some cultural norms and preferences may influence whether users find certain elements appealing or irritating.

Balancing Aesthetics and Functionality

- ❖ **User-Centered Design:** Prioritize user needs and the primary functionality of the interface. Ensure that expressive elements enhance, rather than detract from, the user experience.
- ❖ **Usability Testing:** Conduct usability testing to gather feedback on how users respond to the interface's expressive features.
- ❖ **Performance Optimization:** Pay close attention to the performance impact of expressive elements. Ensure that the interface remains responsive and efficient.

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- ❖ **Accessibility Considerations:** Design interfaces with accessibility in mind. Provide alternatives for users who may have difficulty with certain design elements.
 - ❖ **Transparency:** Be transparent about the purpose of expressive elements and how they benefit the user experience.
 - ❖ **Iterative Design:** Continuously iterate and refine the design based on user feedback and evolving design trends.

Affective Computing and Emotional AI

- ❖ Affective computing and emotional AI play significant roles in emotion interaction within interface design.
- ❖ These technologies focus on recognizing, interpreting, and responding to human emotions, ultimately leading to more emotionally aware and responsive user experiences.
- ❖ This includes creating techniques to evaluate frustration, stress, and moods by analyzing people's expressions and conversations and designing novel wearable sensors for people to communicate their emotional states.

- ❖ More specifically, emotional AI seeks to automate the measurement of feelings and behaviors by using AI technologies that can analyze facial expressions and voice in order to infer emotions.
- ❖ The integration of affective computing and emotional AI in interface design aims to create user experiences that are more empathetic, supportive, and engaging.
- ❖ However, designers must balance the use of these technologies with user privacy, transparency, and ethical considerations, ensuring that user emotions are respected and used for the benefit of the user.

How affective computing and emotional AI are applied in interface design

❖ Emotion Recognition:

❖ Affective computing uses techniques like facial recognition, speech analysis, and biometric sensors to detect and interpret user emotions.

❖ Emotion Analysis:

❖ Emotional AI employs natural language processing (NLP) and sentiment analysis to understand the emotional content of text-based interactions.



❖ **Real-Time Feedback:**

❖ Affective and emotional AI provide the means to offer real-time feedback based on user emotions. i.e., an interface might detect that a user is stressed and respond with calming content.

❖ **Personalization:**

❖ Emotional AI can be used to personalize content, recommendations, and interactions based on a user's emotional state. For instance, an e-commerce website might suggest products that match a user's current mood or preferences.



❖ **Conversational Interfaces:**

❖ Chatbots and virtual assistants powered by emotional AI can recognize and respond to user emotions in conversations. This can include empathetic responses to users expressing frustration.

❖ **Adaptive Design:**

❖ Affective computing can inform interface design choices, such as color schemes, animations, and visuals, based on the user's emotional state. For example, a healthcare app might use comforting colors for users who are worried.



❖ **Sentiment-Driven Content:**

❖ Emotional AI can help determine the sentiment of user-generated content, such as product reviews or user comments, and influence how this content is presented in the interface.

❖ **User Well-Being:**

❖ Emotional AI can play a role in promoting user well-being by providing resources, information, or interventions based on detected emotional states. For instance, an educational app might offer relaxation techniques if a user appears stressed.

Measuring and Tracking Affect and Emotions

- ❖ A number of sensing technologies are used in affective computing and emotional AI to measure and track physiological processes, and from the data collected, predict aspects of a person's behavior, for example, forecasting what someone is most likely to buy online when feeling sad, bored, or happy.
- ❖ The main techniques and technologies that have been used to do this are as follows:

- ❖ Cameras for measuring facial expressions
- ❖ Biosensors placed on fingers or palms to measure galvanic skin response (which is used to infer how anxious or nervous someone is as indicated by an increase in their sweat)
- ❖ Affective expression in speech (voice quality, intonation, pitch, loudness, and rhythm)
- ❖ Body movement and gestures, as detected by motion capture systems or accelerometer sensors placed on various parts of the body

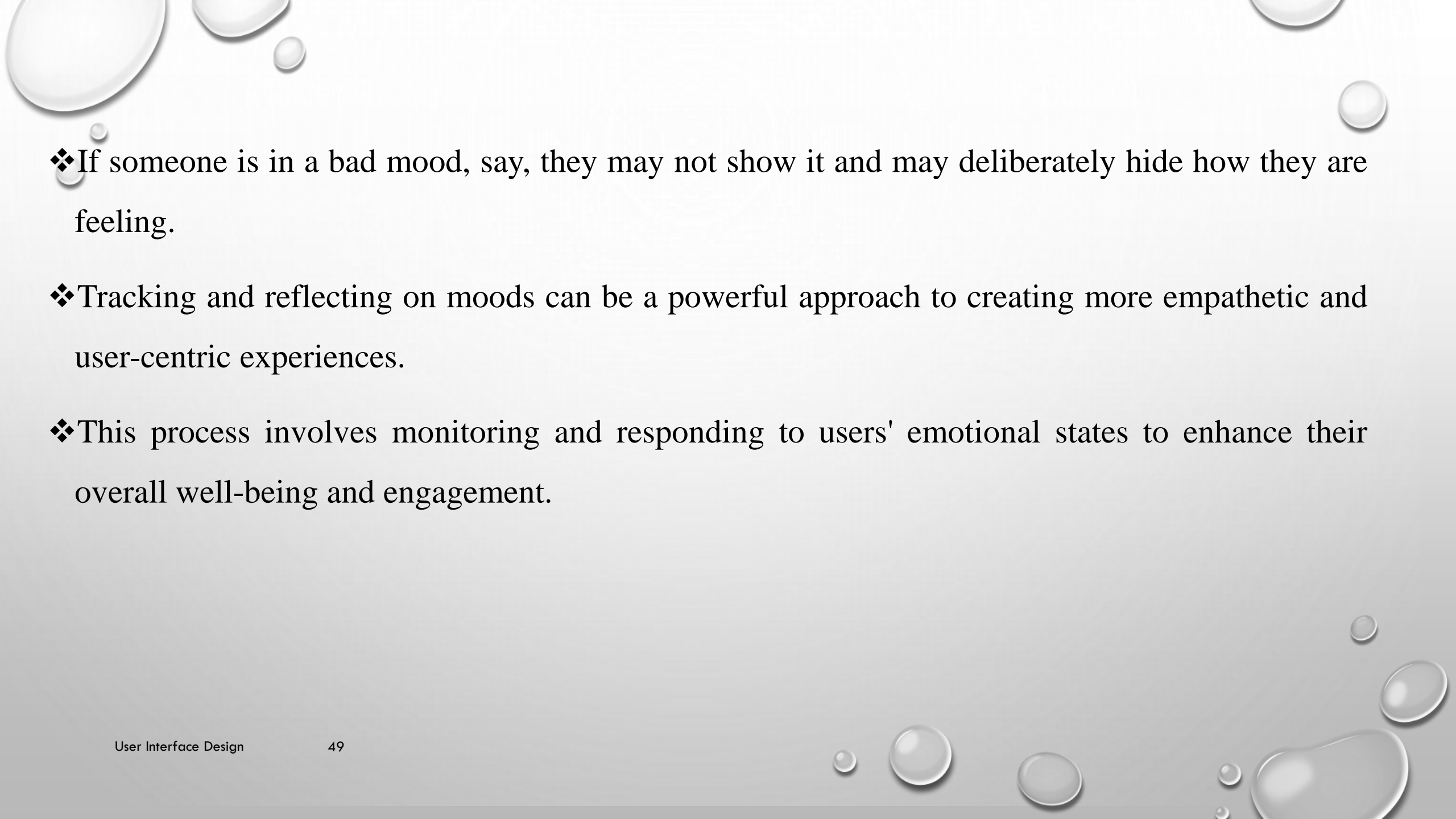
- ❖ The use of automated facial coding has gained popularity in commercial settings, especially in marketing and ecommerce.
- ❖ For example, Affectiva media analytics software ([www .affectiva.com](http://www.affectiva.com)) employs advanced computer vision and deep learning algorithms to catalog someone's emotional reactions to digital content, as captured through a webcam, to analyze how engaged the user is with digital online content, such as movies, online shopping sites, and advertisements.

- ❖ The fundamental emotions that are classified are anger, contempt, disgust, fear, joy, and sadness.
- ❖ These emotions are indicated as a percentage of what was detected from someone's facial expression and appear above the person's face on a display.
- ❖ If a person channels their brow and wrinkles their nose when an ad pops up, this suggests that they feel disgust, whereas if they start smiling, it suggests that they are feeling happy.

- ❖ The website can then adapt its ad, movie storyline, or content to what it perceives the person needs at that point in their emotional state.
- ❖ Affectiva also analyzes drivers' facial expressions when on the road with the goal of improving driver safety. It can perceive if a driver is angry and then suggest an intervention.
- ❖ Biometric data is also used in streaming video games where spectators watch players, known as streamers, play video games.

Tracking and Reflecting on Moods

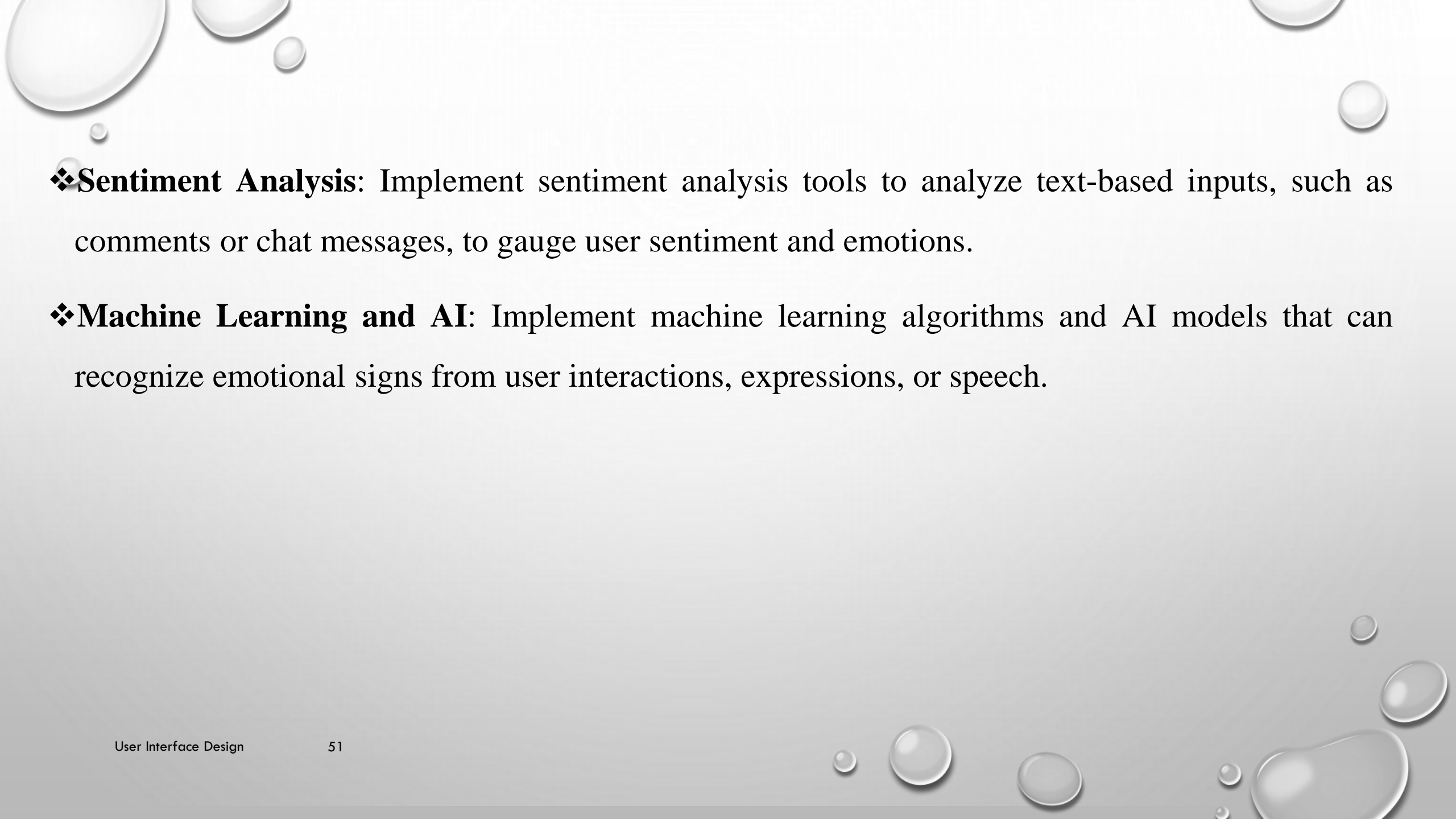
- ❖ There has been much interest in how technology can be used to help people understand more about their moods and what lies behind their mood swings.
- ❖ We can be in a good mood one day and then a bad mood the next day. How does this happen and why? Whereas it is possible to use facial tracking software to detect a specific emotion (e.g., happy), it is not possible to do the same to detect different moods as often they are not expressed through obvious physiological responses.

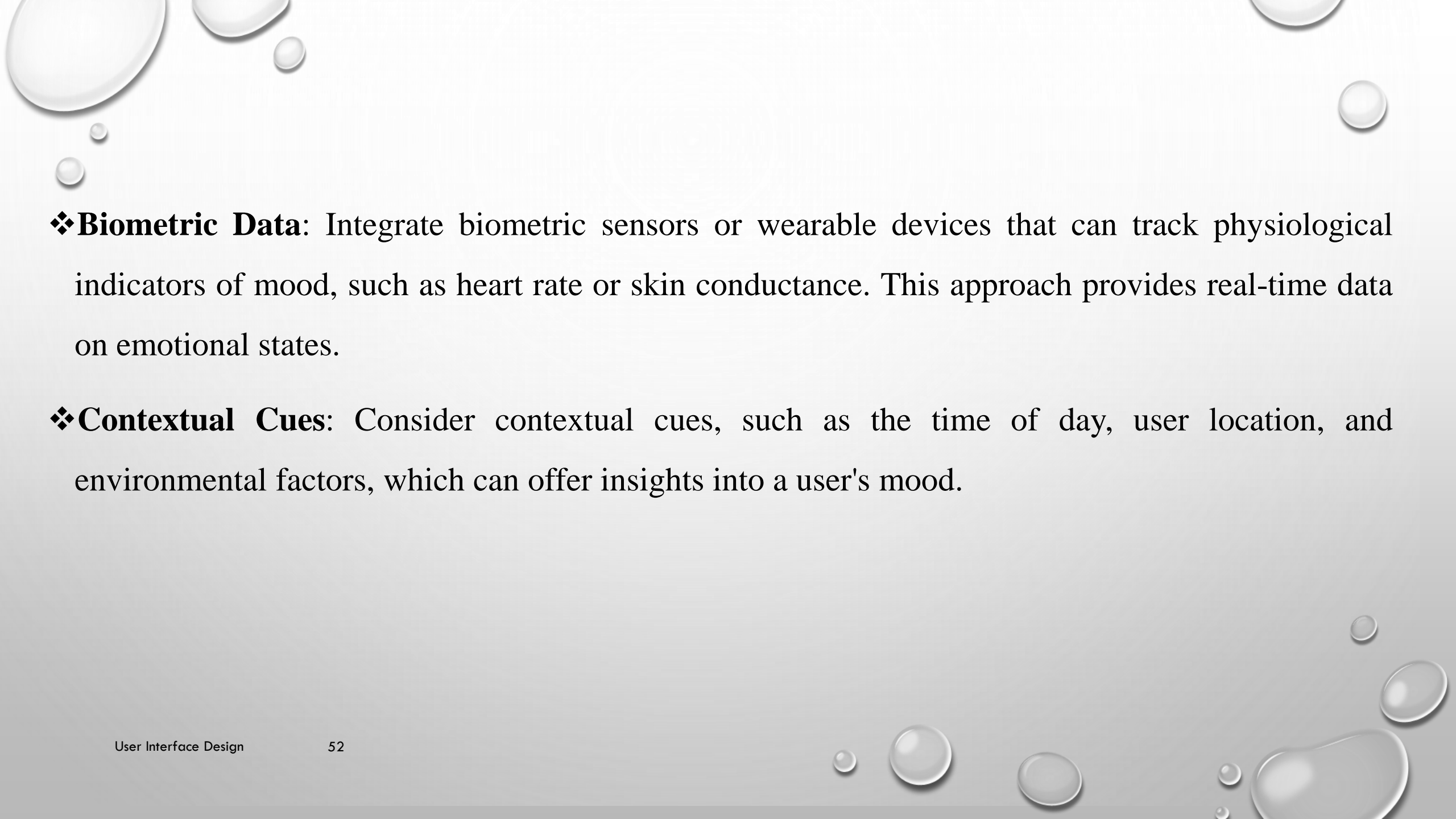
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- ❖ If someone is in a bad mood, say, they may not show it and may deliberately hide how they are feeling.
 - ❖ Tracking and reflecting on moods can be a powerful approach to creating more empathetic and user-centric experiences.
 - ❖ This process involves monitoring and responding to users' emotional states to enhance their overall well-being and engagement.

Considerations when tracking and reflecting on moods

❖ Tracking Moods:

- ❖ **User Input and Self-Reporting:** Give users the option to self-report their moods through mood or emotion selection buttons, sliders, or text input. This allows users to express how they feel.
- ❖ **Data Analytics:** Use data analytics to track user behavior, interactions, and patterns that may indicate their emotional states. For example, frequent use of certain features or patterns of engagement may suggest specific moods.

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- ❖ **Sentiment Analysis:** Implement sentiment analysis tools to analyze text-based inputs, such as comments or chat messages, to gauge user sentiment and emotions.
 - ❖ **Machine Learning and AI:** Implement machine learning algorithms and AI models that can recognize emotional signs from user interactions, expressions, or speech.

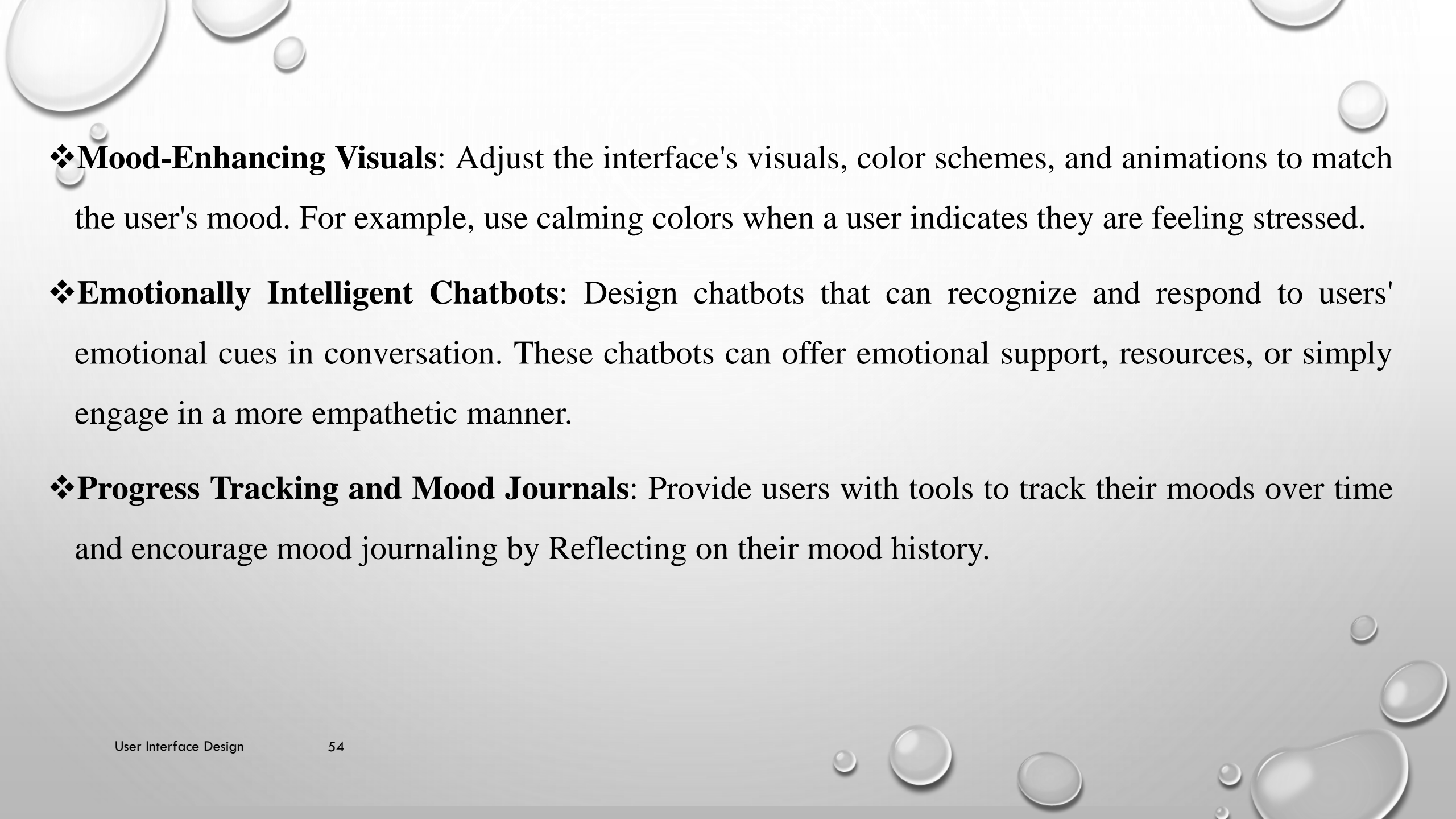
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- ❖ **Biometric Data:** Integrate biometric sensors or wearable devices that can track physiological indicators of mood, such as heart rate or skin conductance. This approach provides real-time data on emotional states.
 - ❖ **Contextual Cues:** Consider contextual cues, such as the time of day, user location, and environmental factors, which can offer insights into a user's mood.



❖ **Reflecting on Moods:**

❖ **Personalized Content Recommendations:** Based on users' moods, offer personalized content recommendations that align with their emotional states. For example, suggest relaxing music or inspiring quotes to users feeling stressed or down.

❖ **Emotional Feedback:** Provide empathetic and emotionally aware feedback to users. If a user expresses a positive mood, acknowledge and celebrate it. If negative mood, offer support, encouragement, or resources.

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- ❖ **Mood-Enhancing Visuals:** Adjust the interface's visuals, color schemes, and animations to match the user's mood. For example, use calming colors when a user indicates they are feeling stressed.
 - ❖ **Emotionally Intelligent Chatbots:** Design chatbots that can recognize and respond to users' emotional cues in conversation. These chatbots can offer emotional support, resources, or simply engage in a more empathetic manner.
 - ❖ **Progress Tracking and Mood Journals:** Provide users with tools to track their moods over time and encourage mood journaling by Reflecting on their mood history.

- ❖ **Community and Peer Support:** Connect users with others who may share similar emotional states, allowing them to provide mutual support and advice.
- ❖ **Mood-Based Notifications:** Send notifications and reminders to users based on their mood. For example, if a user is feeling motivated, send them reminders to complete tasks or set goals.
- ❖ **Ethical Considerations:** Respect users' privacy and consent when tracking and reflecting on moods. Clearly communicate how user data is used, and give users the option to opt in or out of mood tracking features.

Persuasive Technologies and Behavioral Change

- ❖ A diversity of techniques has been used at the interface to draw people's attention to certain kinds of information in an attempt to change what they do or think.
- ❖ Pop-up ads, warning messages, reminders, prompts, personalized messages, and recommendations are some of the methods that are deployed on a computer or smartphone.

- ❖ In emotional interaction, persuasive technologies can be used to influence user behavior and facilitate behavioral change while also taking into account users' emotions and emotional responses.
- ❖ This approach focuses on creating emotionally engaging experiences that lead to positive behavioral outcomes.
- ❖ They include enticing, cajoling, or nudging someone into doing something through the use of persuasive technology.

Consideration of persuasive technologies in emotion interaction

Emotionally Engaging Visuals and Content:

- ❖ Use persuasive design elements that evoke specific emotions, such as color schemes, imagery, and animations.

Emotional Feedback and Affirmation:

- ❖ Provide emotional feedback to users based on their actions. if a user achieves a goal the interface can use positive and encouraging language to affirm their success and make them feel accomplished.

Emotionally Resonant Stories and Narratives:

- ❖ Incorporate persuasive storytelling to create emotional connections with users. Share stories that are relatable and evoke empathy, encouraging users to take desired actions.

Emotional Response Mechanisms:

- ❖ Design interfaces that respond empathetically to users' emotional states. For example, if a user expresses frustration or sadness, the interface can respond with empathy and offer support.

Social and Peer Influence:

- ❖ Leverage social influence by showing how others in the user's network are interacting with the interface emotionally. Displaying user reviews, testimonials, from peers can encourage similar behavior.

Emotional Gamification:

- ❖ Incorporate gamification elements that tap into users' emotions, such as competition, achievement, and recognition. Virtual rewards that acknowledge and celebrate users' achievements can be emotionally persuasive.

Emotional Self-Tracking:

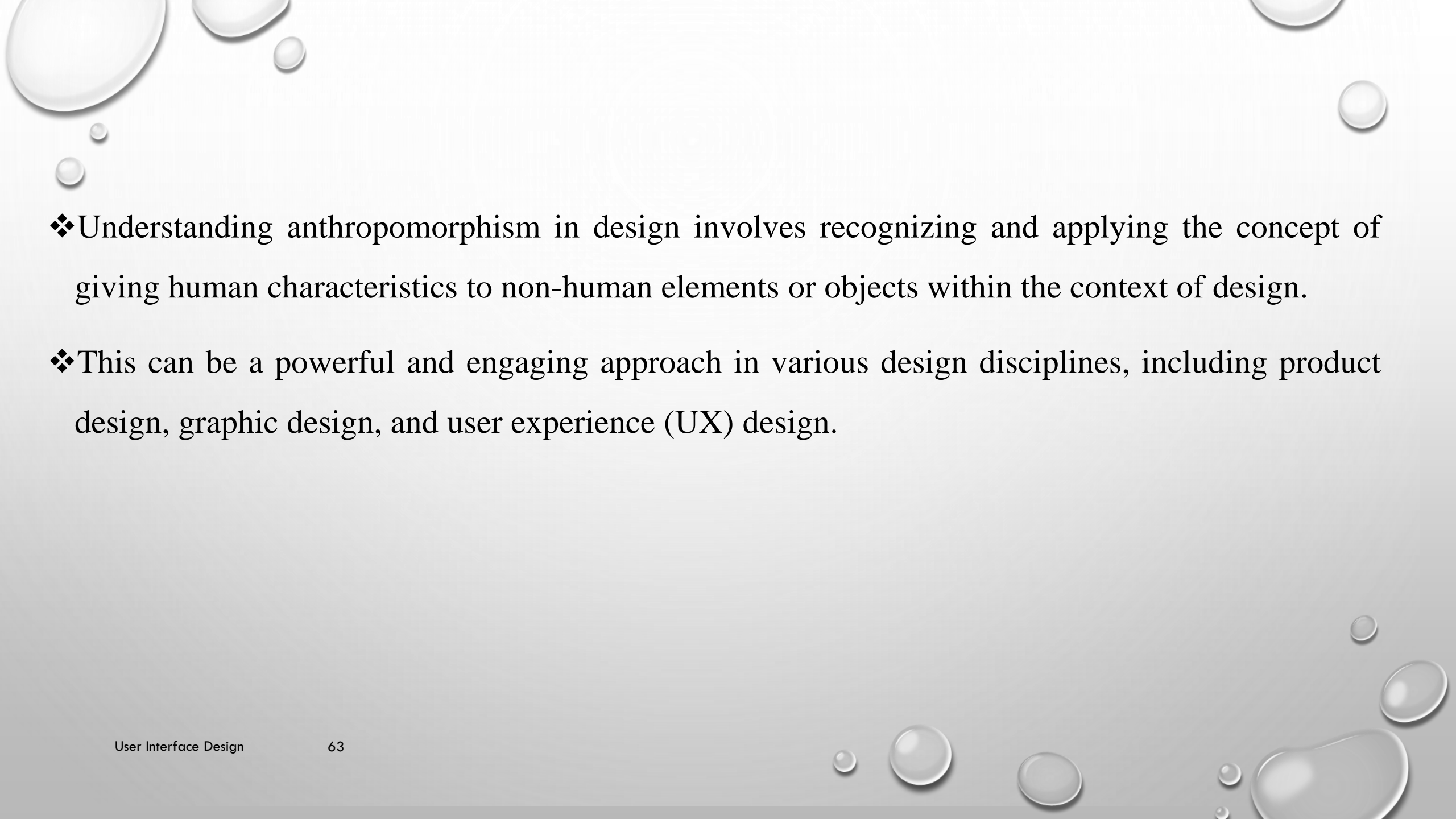
- ❖ Enable users to track their emotional states over time and provide insights into how certain behaviors or choices affect their emotions.

Emotional Empowerment:

- ❖ Empower users emotionally by providing them with the tools, information, and support they need to make positive changes in their lives. Encourage users to take action by addressing their emotional needs and concerns.


Anthropomorphism

- ❖ Anthropomorphism is the tendency people have to attribute human qualities to animals and objects.
- ❖ For example, people sometimes talk to their computers as if they were humans, treat their robot cleaners as if they were their pets, and give all manner of cute names to their mobile devices, routers, and so on.
- ❖ Children are especially subject to this kind of magic, as witnessed by their love of cartoons where all manner of lifeless objects are brought to life with human-like qualities.

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- ❖ Understanding anthropomorphism in design involves recognizing and applying the concept of giving human characteristics to non-human elements or objects within the context of design.
 - ❖ This can be a powerful and engaging approach in various design disciplines, including product design, graphic design, and user experience (UX) design.


Application of Anthropomorphism

- ❖ **Human-centered design:** By focusing on creating products and interfaces that cater to human behavior, emotions and needs. By filling design elements with human traits, designers aim to make users feel more comfortable and connected to the design
- ❖ **Emotion and engagement:** Used to evoke emotional responses and engagement. For example, a smiley face on a feedback button can make users feel welcomed and encouraged to provide feedback.



❖ **Visual and aesthetic elements:** Used to create mascots or characters that represent a brand or product. These characters may have human-like qualities, expressions, and behaviors that make them memorable and relatable.

❖ **Product and industrial design:** Influence the physical form and features of products. For instance, car designers may shape headlights to resemble human eyes or car grilles to look like smiles.



❖ **UX and interaction design:** Applied to create intuitive and user-friendly interfaces. For example, a search bar with a magnifying glass icon that appears to "look" for information can make the search function more intuitive and engaging.

❖ **Feedback and communication:** Used to enhance communication between users and technology. For instance, voice assistants like Alexa are given human-like voices and names, making users feel like they're interacting with a virtual assistant rather than a machine.

Avoiding drawbacks in anthropomorphic design

- ❖ Anthropomorphic design, which involves attributing human characteristics to non-human entities, can be a powerful and engaging approach in various design disciplines.
- ❖ However, to avoid potential drawbacks, designers need to approach anthropomorphic design thoughtfully and strategically.

Overdoing Anthropomorphism:

- ❖ **Drawback:** Excessive use of anthropomorphic elements can make a design feel gimmicky or unrealistic, potentially alienating users.
- ❖ **Avoidance:** Use anthropomorphism sparingly and only when it enhances the user experience or serves a specific purpose. Ensure that the design remains functional and user-centric.



Cultural Insensitivity:

- ❖ **Drawback:** Cultural interpretations of anthropomorphism can vary widely. What may be endearing in one culture might be perceived differently in another.
- ❖ **Avoidance:** Be aware of cultural differences and conduct research to ensure your anthropomorphic elements are culturally sensitive and appropriate for your target audience.



Loss of Functionality:

- ❖ **Drawback:** Focusing too much on human-like appearance or characteristics can lead to a loss of functionality or usability in the design.
- ❖ **Avoidance:** Always prioritize the primary purpose and functionality of the design. Anthropomorphism should complement the core function rather than compromise it.

Deception and Uncertainty:

- ❖ **Drawback:** If users are unsure whether they are interacting with a machine or a human, it can lead to confusion and mistrust.
- ❖ **Avoidance:** Maintain transparency about the nature of the design. Clearly communicate to users that they are interacting with an AI or non-human entity, and provide appropriate cues to reinforce this understanding.

Inconsistent Behavior:

- ❖ **Drawback:** If the anthropomorphized elements exhibit inconsistent or unpredictable behavior, it can be frustrating for users.
- ❖ **Avoidance:** Ensure that the anthropomorphism is consistent in its behavior and responses, aligning with the defined persona and design objectives.

Lack of User Customization:

- ❖ **Drawback:** Not allowing users to customize or personalize the anthropomorphic elements can hinder user engagement.
- ❖ **Avoidance:** Provide options for users to adjust or customize the level of anthropomorphism or the personality of the design, allowing for a more tailored experience.

Creating Unnecessary Complexity:

- ❖ **Drawback:** Adding anthropomorphic elements that don't serve a clear purpose can introduce unnecessary complexity and confusion.
- ❖ **Avoidance:** Ensure that each anthropomorphic element in the design has a specific function or contributes to a positive user experience. Avoid gratuitous additions that may overwhelm or distract users.

References

- ❖ Preece, R., Rogers, Y., & Sharp, H. (2023). Interaction Design: Beyond Human-Computer Interaction. J. Wiley & Sons.
- ❖ Affectiva,(2023). Humanizing Technology, <https://www.affectiva.com/>



Thank you

Next Lecture We Shall Look At

Data collection: key issues, Data recordings, interviews,
Questionnaires, observations