

“What’s Going On Inside Their Heads?”: Demystifying Emotions with Pixar’s *Inside Out*

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Abstract:

In the summer of 2015, Pixar released *Inside Out*, a film about an eleven-year-old girl named Riley and the five personified emotions (Joy, Sadness, Anger, Fear, and Disgust) inside her head that control her response to daily events. Since its release, psychologists and psychiatrists have championed the film for the way it handles complex emotional problems in a way that is comprehensible even for young audiences; other attempts to model the way our brain works have not been nearly as powerful. This research aims to uncover why we need successful emotional tools like *Inside Out*. What can we learn about emotions? Is there something to be gathered from the way it uses film techniques to teach lessons; to inspire metacognition on emotion? What commentary is there on the benefits of embracing emotions? I believe the compelling narrative and colorful characters, along with the scientific accuracy of the visual elements used, help to model valuable strategies for emotional maturity. To provide evidence, I look to the psychologists who aided the Pixar team, and the thoughts of many scholars within the fields of psychology, film, philosophy, etc.

Keywords: metacognition, visualization, psychology, comprehensibility, emotional response, *Inside Out*, emotional maturity

In the summer of 2015, the renowned animation studio Pixar released its newest film, *Inside Out*, in theaters across the country. The film depicts a young girl, the eleven-year-old Riley, as her family moves from Minnesota to San Francisco. While Riley could be considered a protagonist, she is not the focus of the film; rather, it is the five emotions who work inside Riley's head to provide her with feelings. These emotions are anthropomorphized and colorful, representing Fear, Anger, Joy, Disgust, and Sadness. They work in a place called Headquarters, a clever interpretation of the interior of our brains, to process and react to Riley's environment. Outside of Headquarters lies the vastness of the brain: Long Term Memory, the Subconscious, et cetera. When things go wrong, it is up to the Emotions to set things right again. Director Pete Docter and the rest of the Pixar team, working with psychologists Dr. Dacher Keltner and Dr. Paul Ekman, poured serious effort into creating a bright, fantastical narrative that leaned *into* rather than *away from* the science of psychology (Cannon, 2016).

I went with my mom and grandma no less than four times that summer to watch *Inside Out* on the big screen. We would grab popcorn, sneak in snacks, and talk through the commercials about what we planned to look for when watching this time. After the credits rolled, I would talk with my grandma about what I had noticed – as a psychologist herself, she had a lot to say about the movie's interpretive accuracy. I was captivated. It was clear to me, even then, that there was a strong message present. I sympathized with Riley, and with her feelings. The movie showed me that emotions can influence us in profound ways; that memory and emotion are tied closely together, and that sadness is not something to be pushed away. Recent studies have shown that self-disconnection, not knowing oneself, has become a prominent problem among adolescents in our increasingly digital world (Klaussman et al, 2021). This implies a larger problem, a potential lack of empathy in an entire generation, which could have any

number of adverse effects on personal mental health and social interaction. To combat this issue, we can use emotional tools to educate ourselves on how feelings affect us. Understanding one's own emotions is key to developing compassion and empathy. Using metacognition skills we learn through the use of these tools, we can reach a higher level of emotional awareness – that is, a cognizance of how and why we feel a certain way in a given situation. *Inside Out*'s colorful, lighthearted nature, along with its scientifically-grounded visualizations, helps to demystify emotions and make them more accessible to audiences.

Director Pete Docter, and co-director Ronnie del Carmen, along with consultant psychologists Dr. Paul Ekman and Dr. Dacher Keltner, collaborated with the Pixar team to make sure that *Inside Out* was as scientifically grounded as possible while also raising a compelling narrative about emotional maturity. They wanted it to be as beneficial for the most audiences as possible. In an interview with Bradley Cannon for Psi Chi, Keltner says, “What I mainly did at Pixar was to serve as a scientific sounding board for their core interests... I would talk about the science of emotional expression or neurophysiology of emotion... I would really just answer questions and have conversations,” (2016). Keltner's lifelong work on emotion science and the division of human emotion into distinct categories had an enormous effect on the film's storyboarding process. Much of the film's implicit dialogue on Sadness and memory are derived from Docter's conversations with Keltner and Ekman. These psychological undertones give the film a backbone, establishing it as a work worthy of use as an educational tool. Dr. Shelley Schmidt writes in an article about education, “[The] intimate connection between emotion and cognition is leading to a number of insights that have the potential to inform and transform educational practices at all levels—from the classroom to the curriculum,” (2019). The Pixar team clearly treated this idea as a central focus of the film, using the benefits of the medium to

solidify the connection between emotions and our processing of them. If we are taught what emotions are and how to handle them, we can know ourselves better.

Inside Out follows the story of Riley Anderson as her family moves from small-town Minnesota to big-city San Francisco – a massive change for an eleven-year-old. Pixar explores emotional response and the human brain via personified emotions running around in an imagined inner world, completing tasks like storing memories, reacting to environmental change by providing feelings, etc. A person's personality in this world is derived from their emotions. Riley is less of a protagonist and more of a venue for exploring emotions; her point of view provides a “stage” to show how her emotions act. Joy, Riley's de-facto emotional leader, oversees the operation of Headquarters and directs the other emotions on a daily basis. As the perceived leader, most of Riley's stored memories are coded “yellow” for Joy, meaning that her general outlook on her past and present are joyful. When Sadness touches some of Riley's core memories, those that connect to Riley's five Islands of Personality, they begin to turn blue. In a frenzy, Joy pushes Sadness away, which causes both Emotions to be sucked away from Headquarters and into Long Term Memory. What ensues is an epic journey through the annals of Riley's mind as Joy and Sadness attempt to get back to Headquarters and return the core memories. They encounter Riley's childhood imaginary friend Bing Bong, who helps them along their way, through the Subconscious and Dream Production Studios, on the Train of Thought, and eventually out of the Memory Dump. All this time, Anger, Fear, and Disgust have been fighting for the console as Riley moves through her first days at school, leaving her anxious and apathetic. In a last ditch effort spurred by her remaining emotions, she decides to ride a bus back to Minnesota, where Anger knew she was happiest. When Joy and Sadness return to HQ, Riley is already on the bus. Joy tells Sadness to take the console, and immediately Riley realizes that she

needs to go home to her parents. In a heartfelt moment, both in Riley's house and inside her head, a reunion takes place. Riley's parents reassure her that she will adjust, and they help strengthen her support system. By the end of the film, the Emotions have learned to recognize each other's strengths and weaknesses, knowing when to take and relieve control.

Children need to learn to process difficult and unpleasant emotions. Psychotherapist Erika Landau (1998) defines emotional maturity as "a balance between the brain and the emotions, between the inner and outer world of the individual," (p. 74). *Inside Out* certainly supports this definition, using narrative framing devices to show the simultaneous "inner and outer worlds" of Riley and the way they influence each other. To learn how to process difficult feelings in ourselves, we need to contextualize emotional maturity. New studies show a disconnection between individuals and their emotions, with a multitude of causes. Dr. Mahreen Khan writes, "After analyzing data for 17,000 college-aged students over the past two decades, we found that [emotional intelligence] significantly declined. These declines were pretty consistent over the two decades, meaning they weren't concentrated in any particular year," (2022). Khan's research suggests that college-age students are not in tune with their emotions. As they age, this could produce detrimental results for an entire generation; a generation out of sync with a major aspect of their personality, and therefore unable to process arduous experiences in a healthy way. Kristine Klussman conducted a similar study, albeit on a smaller scale, which produced corollary results. According to her study, the experience of self-disconnection, or an inability to understand and convey one's own emotions, is a rampant phenomenon among people aged twenty years and older (Klussman et. al., 2021, pp. 559-566). Klussman furthers Khan's point, noting that emotional immaturity has consequences that extend past adolescent years. Films like *Inside Out* can inspire the type of metacognition needed,

helping to identify and remedy self-disconnection, or lack of emotional intelligence, by depicting emotions in a more tangible manner.

The film illustrates the importance of sadness and the paradox of nostalgia, helping frame some of our most important emotional pitfalls. Joy comes to realize Sadness's importance in HQ, which acts as an indication of our need to recognize sadness as a beneficial emotion and not a malevolent one to be cordoned off. Additionally, the film's depiction of memories as encapsulated emotional moments conveys nostalgia in a concrete way – moments we experience inherently have an attached emotion, and we can be reminded of them later on, potentially ascribing a new emotion to them. For example, at one point in the film Riley is reminded of ice-skating on a frozen lake. What once was a happy memory quickly turns sad as Riley realizes she misses that time of her life. A partnership exhibit between Pixar Animation Studios and the Pittsburgh Children's Museum expands on these themes of the movie in an interesting way – deepening them through kinesthetic learning. Borrowing from those themes of memory and the importance of recognizing emotions, the exhibit asks for personal interactions from the patrons. Director Anne Fullenkamp writes, "Once we set the scenes for the storytelling, we could design the exhibits as jumping-off points for more personalized experiences. For us, this was key for supporting the emotional content because it left room for the audience to make their own meaningful connections to the activities," (2021). Rather than establishing a defined path for museum-goers to follow, the exhibit is dynamic and open-ended. Though this exhibit was geared toward children and localized in Pittsburgh, it goes to show the widespread benefits emotional intelligence can inspire in audiences of all ages, like the childrens' older siblings or parents. Activities requiring introspection allow us to discover the way emotions silently affect us.

Exposing their interactions with our memories and behaviors permits us to understand ourselves better.

Riley's journey in the film models the difficulty yet beneficial embrace of her emotions. Without naming it as depression, the film shows Riley experiencing the effects of a depressive episode when Joy and Sadness are removed from HQ – she feels disgust with her usual hobbies, like hockey and spending time with family, and is otherwise anxious and apathetic. In a later part of the film, the audience sees Riley's imaginary friend Bing Bong as he literally fades away from her memory altogether, knowing that he needs to be forgotten in order for Riley to grow up. Rather than spiraling further and further, Riley is able to cope (with the help of her Emotions). Her world does not have to fall apart, because she comes to understand herself. The depth of narrative, which consists of dramatic irony, misdirection, and hooks, allows us to practice a form of emotional intelligence by relating to Riley. In a chapter of *Psychocinematics* on theories of mind in film, the authors discuss these narrative devices. These require viewers to balance more than one mental state at a time, a level of critical thought that many would assume to be lacking in similar children's movies. "...these narrative devices push audiences to infer, understand, empathize, and identify with a character's goals," (Baker et. al, 2013, pp. 250-253). The film focuses on Riley in a very relatable time of change. She is an American preteen, and her family has just moved across the country, leaving friends and lives behind; undoubtedly there is some common ground there that many viewers will share with her. It is not a death or an overly traumatic event, but a difficult life change nonetheless – a momentary lack of stability. The viewer's relation with Riley is a necessary step toward an understanding of the film's emotional messages. Similarly, an understanding of one's own emotional well being is necessary for reflection and connection with those around us.

Unpleasant emotions are crucial and help define pleasant emotions. The plot of the film is interesting, the dialogue is fun and intriguing, but specifically the *color* of both characters and environment is a factor worthy of exploring through this lens. Each of the five main emotions (Anger, Joy, Disgust, Sadness, and Fear) embodies a specific color; red, yellow, green, blue, and purple, respectively. The clothes they wear, the particles immediately around them, and the memories they preside over all follow their individual color theme. The colors are utilized in many ways, but most strongly to invoke an emotion. For example, Joy's bright yellow skin is a happy hue with high saturation, alluding to Riley's joyful leanings. Her hair, however, is a rich blue reminiscent of Sadness's that contrasts directly with her yellow skin, hinting at a hidden gloominess. This strong contrast is fuelled by the use of primary colors – yellow and blue find themselves clear opposites of each other on a color wheel. Before any of the story unfolds, the message of interconnected sadness and joy is broadcast by the mere visual representation of Joy. This simple use of color foreshadows Joy's reconciliation with her colleague-turned-friend Sadness, in which she finds that pushing emotions away can be a dangerous and unhealthy practice. It also symbolizes that we can only mark the difference between joy and sadness by the presence of the other. Unpleasant times prove the existence of pleasant ones. To promote emotional maturity, the film suggests we follow in Joy's footsteps and allow ourselves to experience our feelings without compartmentalizing them or alienating them, hence developing an effective coping mechanism.

The animation style of *Inside Out*'s Emotions makes use of carefully-placed saturated colors in shots of otherwise unsaturated colors, or hues. To paraphrase from Shimamura's *Psychocinematics*, hue refers to the color itself, which we typically ascribe different names like blue, green, or cyan (Brunick et. al., 2013, pp. 143-144). Saturation refers to the boldness of the

color. We are naturally drawn to saturated colors over the unsaturated ones. The world inside Riley's mind is soft and pastel (low saturation), but the objects of importance, like the Emotions, the memories, and landmarks, are all of high saturation. A typical shot emphasizes highly saturated objects, which provide observational clarity and therefore progress the narrative in unspoken ways. Since the Emotions are bound, or coded, to a specific color throughout the film, they become highly recognizable. In this way, they become mental avatars, or archetypal characters we can associate with the emotions they represent. Joy is always bright yellow, Anger is always fiery red. As they move through a *low* saturation environment we are drawn to what the Emotions are doing within a given scene. For example, in a scene in the dark Memory Dump, we may be drawn to Joy (her glowing yellow skin against the Dump's deep red backdrop) and her facial movements/body language as she experiences Sadness for the first time. This small factor demonstrates that the focal points in each and every shot are deliberate; the writers and animators want viewers to focus on specific aspects of each scene because it can develop audience connections with the characters or with concepts presented. Psychiatrist Eric Prost points out that, "The movie's attempt at mapping the mind is as valiant as it is consequential. If [one] is shown a colorful character-driven story, [one] may take it to heart," (2016). The film treats emotional maturity as a serious issue, not just a throwaway plot device. The characters are literal Emotions, imbued with humanlike qualities so that we can better understand how they affect our cognition of the world around us – giving us *metacognition*, or the ability to think about our thinking. By noticing a character's microexpressions, we have a strengthened understanding of how emotions can affect said character, which we can then apply to ourselves.

As a child, and now as I leave my teenage years behind, I have watched *Inside Out* again and again. I find a sort of solace in it. It gives me the ability to think about my emotions on a

deeper level, the ability to *come closer to* understanding what is going on inside my head. For me, it demonstrates that my struggles don't have to be large to be meaningful, and that our emotions are each vital to us in their own way. If our world is on a course for self-disconnection, we need to pivot. To do this, we can make use of tools that can help us understand our cognition. Tools like *Inside Out* help us on our way to be more emotionally intelligent in a way that improves our comprehension of feelings and, therefore, gives us resilience in difficult situations. Like Riley, we can develop our emotional maturity to guide us through our lives as they shift and change. Spreading awareness of the significance of emotions can foster better emotional health.

References (APA)

- Baker et. al (2013). Belief, desire, action, and other stuff: Theory of mind in movies. In Shimamura, A. P. (Ed.) *Psychocinematics: Exploring Cognition at the Movies*. (pp. 244-266). Oxford University Press.
- Brunick et. al (2013). Low level features of film: What they are and why we would be lost without them. In Shimamura, A. P. (Ed.) *Psychocinematics: Exploring Cognition at the Movies*. (pp. 133-148). Oxford University Press.
- Cannon, B. (2016). *Inside Out*: Behind-the-Scenes Science With Dacher Keltner, PhD. *Eye on Psi Chi Magazine*, 20(3), 20–23. <https://doi.org/10.24839/1092-0803.eye20.3.20>.
- Fullenkamp, A. (2021). Building Emotional Intelligence Through Play: An exhibition at the Children’s Museum of Pittsburgh uses the movie *Inside Out* to teach children about their feelings. *Museum*, 100(4), 40–45.
- Klussman, K., Langer, J., Curtin, N., & Nichols, A. L. (2021). A qualitative examination of the experience of self-disconnection. *The Humanistic Psychologist*, 49(4), 555–572. <https://doi.org/10.1037/hum0000182>.
- Khan, M. (2022, May 2). *Emotional intelligence is on the decline - what does it mean for the future of work?* Work Life by Atlassian. <https://www.atlassian.com/blog/teamwork/decline-of-emotional-intelligence>.
- Landau, E. (1998). The self--the global factor of emotional maturity. *Roeper Review*, 20(3), 174. <https://doi.org/10.1080/02783199809553886>.
- Prost, E. (2016). *Inside Out*: Life of the Mind. *Queen's Quarterly*, 123(2), 242-250. https://link.gale.com/apps/doc/A455287262/AONE?u=tel_a_welshimer&sid=bookmark-AONE&xid=d8395550.
- Shimamura, A. P. et. al (2013). *Psychocinematics: Exploring Cognition at the Movies*. Oxford University Press.
- Schmidt, S. J. (2019). Embracing and Harnessing the Intimate Connection Between Emotion and Cognition to Help Students Learn. *Journal of Food Science Education*, 18(4), 87. <https://doi.org/10.1111/1541-4329.12167>.