

EMOTIONAL PORTRAYAL IN POPULAR CHILDREN'S MOVIES: CODING
BASIC AND COMPLEX EMOTION IN *ALADDIN* (1992) AND *ALADDIN* (2019)

by

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ABSTRACT

Facial expression, specifically during early childhood, might significantly contribute to how children interpret the television, movies, and other media they watch. In the last decade, the largest producer of children's movies in the world, Walt Disney Studios, has remade a number of their animated classics with positive reception. For instance, the live-action *Aladdin* (2019) grossed \$1,050,693,953 in its worldwide theatrical release, making it one of the 50 highest grossing movies of all time (Top Lifetime Grosses, 2020). Instead of children experiencing Disney stories for the first time through animation, they might now experience them through live-action or life-like computer generated imagery. This could have many implications for their emotional development. The present study analyzed the facial expressions of *Aladdin* (1992) and *Aladdin* (2019) with a focus on investigating how young children might respond to the emotional content of each film version. Descriptive statistics about the basic and complex emotions depicted across multiple characters were compared. Results revealed several differences across the animated and live-action characters and films overall. Most notably, characters in *Aladdin* (1992) portrayed more than twice as much basic emotion than their live-action counterparts in *Aladdin* (2019). Implications are discussed within the context of early childhood and socioemotional development.

I. Introduction

Facial expressions are a critical component of effective communication (Gross & Ballif, 1991). This form of nonverbal communication can sometimes convey even more emotion than language alone. The use of facial expressions is especially necessary in infancy and early childhood when children are still learning how to communicate (Santrock, 2019). Reading and responding to facial affect is one way children understand other people's feelings, their own, and subsequently build social competence (Gross & Ballif, 1991). It stands to reason that facial expression, specifically during early childhood, significantly contributes to how children interpret the television, movies, and other media they watch. Media is not only increasingly prevalent in the lives of children, but also ever changing. In the last decade, the largest producer of children's movies in the world, Walt Disney Studios, has remade a number of their popular animated classics. Instead of children experiencing these stories for the first time through animation, they will be doing so through live-action or life-like computer generated imagery. The implications of this phenomenon and children's general understanding of movies are largely understudied.

Despite the substantial amount of research assessing the impacts of media on early childhood development, there is relatively little that precisely examines the content of facial expression in children's movies. Analysis of facial expression and emotional portrayal in movies can illuminate what about emotion they are potentially introducing to children. It is worth considering exactly how popular children's movies are communicating emotional experiences to young children and the extent of children's comprehension. Additionally, the use of animated or live-action characters in children's

movies might drastically change the variety of facial expressions and depth of emotion presented to children. Disney's remaking of their animated classics into live-action movies present a unique opportunity to discuss these potential differences in facial expression and emotional content.

The present study examines facial expression and emotional content in media to ascertain implications about socioemotional development in early childhood. Children's understanding and recognition of facial expression also is addressed to inform a discussion on how children might respond to animated children's movies. Finally, the Walt Disney Studio movies *Aladdin* (1992) and *Aladdin* (2019) are analyzed for facial expression and emotion. Both movies are coded for basic and complex emotion. It is hypothesized that the characters in the animated *Aladdin* (1992) will display more basic emotion than characters in the live-action *Aladdin* (2019). Results from this study apply to understanding how young children recognize facial expressions and emotion.

II. Media and Emotional Development in Early Childhood

Engagement with and access to media continues to increase in the 21st century. Children during early childhood are spending “2 to 4 hours per day” watching television (Santrock, 2019, p. 307). As of 2017, roughly 98% of children between the ages of 0 and 8 have access to internet in their homes (Madigan et al., 2019). With the internet comes effortless connection to streaming services (Disney+, Netflix, Hulu, Amazon Prime) and other video viewing platforms (YouTube) that are replacing common cable television. While child development research in the past has prioritized television, the prevalence of new media has recently shifted attention towards general screen time. “Screen time” refers to the time that children spend watching television, movies, and other media on a

wide range of devices (Santrock, 2019, p. 307). Ultimately, screen time in early childhood has been increasing over the last few decades, making research on the phenomenon quite relevant (Christakis & Zimmerman, 2009; Kirkorian et al., 2008; Newman, 2018; Wilson & Smith, 1998).

Studies concerning television's (media, movies, video) influence on child development reveal negative impacts (Newman, 2018); however, some research focuses on prosocial or educational television that primarily aims to teach children (Christensen & Myford, 2014; Coates et al., 1976; Evans et al., 2018; Wilson & Smith, 1998). Considerations for socioemotional development are prominent in each of these cases. Yet, analysis of popular non-educational media and movies is relatively sparse. It is consequently necessary to differentiate between entertainment intended for a child audience and media meant to be educational for children (unless otherwise specified, children's movies or children's television refers to the former). Furthermore, minimal research discusses whether young children respond emotionally to popular children's television and movies in the same way they do to educational television. Differences between live-action and animated children's entertainment also goes unrecognized, despite the medium's growing cultural presence. In particular, there has been a lack of thorough analysis of children's movies with reference to screen time and socioemotional development in early childhood.

Social and emotional development (socioemotional development) is foundational to the conversation of screen time and early child development. Healthy socioemotional development is essential for children to form successful relationships, communicate effectively, understand their emotions, and more (Darling-Churchill & Lippman, 2016;

Fischer et al., 1990; Marion, 2019; Newman, 2018; Santrock, 2019). Socioemotional development also has resounding significance in early childhood (Bayet et al., 2018; Chronaki et al., 2014; Marion, 2019). Early childhood is established as the period of human development extending “from the end of infancy to about 5 or 6 years of age” (Santrock, 2019, p. 12). This period of development is especially sensitive, as environmental experiences during this time can be considerably transformative for overall socioemotional growth (Christakis & Zimmerman, 2009; Moore et al., 2017). Socioemotional skills that are actively encouraged in early childhood predict academic success, social competence, and easier social transitions in later development (Christensen & Myford, 2014; Marion, 2019; Rasmussen et al., 2016). As a result, each facet of socioemotional development requires careful consideration within the context of screen time. Emotional development in early childhood is particularly relevant to children’s unique experiences with the media they watch.

Emotional development specifically includes the expression, understanding, and regulation of emotions, and greatly contributes to overall social competence (Chronaki et al., 2014; Gross & Ballif, 1991; Montirosso et al., 2010; Rasmussen et al., 2016; Santrock, 2019). Facial and emotional recognition is pivotal to communication in infancy and continues to develop throughout childhood (Chronaki et al., 2014; Newman, 2018; Santrock, 2019; Székely et al., 2011). Additionally, the ability to interpret “emotional meaning [from] facial expressions” is imperative to building social skill (Gross & Ballif, 1991, p. 368). Gross and Ballif (1991) explain that “children’s understanding of emotion develops from associations between distinct feelings and facial expressions that are modified by their association with images, behaviors, and symbols as the child matures

and participates in an increasing variety of social experiences” (p. 368-369). Social experiences for children are also ever changing. Thus, the circumstances in which children view facial expression must be further investigated, even more so considering the growing presence of media in their lives (Christakis & Zimmerman, 2009).

Educational television developed for children has shown promise in relation to early childhood developmental outcomes. It is evident that “viewing of high-quality content can improve children’s cognitive and behavioral development” (Christakis & Zimmerman, 2009, p. 1178). Children’s television influences children’s emotional development as well (Wilson & Smith, 1998). Studies across the past several decades have determined that young children do receive socioemotional benefits from watching educational children’s television (Coates et al., 1976; Evans et al., 2018, Rasmussen et al., 2016; Wilson & Smith, 1998). For example, television that includes prosocial messages can improve “children's social interactions and altruism while decreasing stereotyping and aggression" (Christensen & Myford, 2014, p. 21) From this perspective of socioemotional development, screen time could play “a central role in children’s beliefs about emotions, their own emotional experiences, and their overall development” (Wilson & Smith, 1998, p. 533-534). This does not mean that children’s engagement with media goes without criticism though.

Screen time can be particularly detrimental to development during infancy and up to 2 years of age (Christakis & Zimmerman, 2009; Kirkorian et al., 2008). However, screen time that is mediated and carefully curated has been shown to have potential developmental benefits for children older than 3 years of age (Christakis & Zimmerman, 2009; Rasmussen et al., 2016). Specific television “content is the most important

mediating factor” in predicting “cognitive skill development and academic achievement” for children (Kirkorian et al., 2008, p. 53). It is essential that parents and caregivers select media with the most appropriate content to view with their children (Kirkorian et al., 2008). An outstanding implication here is that the specific content children watch is more important than just how much they watch (Christakis & Zimmerman, 2009; Kirkorian et al., 2008). If this is the case, it is necessary to consider how children comprehend emotional content in various types of media (animation/live-action). Although the research is rather lacking, children might better recognize emotion from animated media rather than live-action media.

III. Animation and Young Children’s Ability to Recognize Emotion

The harmful effects of media should be addressed, however, determining what media can produce the best outcomes for children is equally important. Previous research has illuminated how children’s screen time and/or media use relates to their intrinsic cognitive and behavioral development (Christakis & Zimmerman, 2009; Kirkorian et al., 2008). Nonetheless, there has been limited consideration for the emotional content in noneducational children’s media and what its impact on emotional development in early childhood might be. The literature in early childhood development is particularly lacking with regard to children’s emotional relationship with movies and animation. Most studies pertaining to animated children’s movies do not assess direct outcomes for children, nor do they examine children’s understanding of facial expressions. Facial expression and emotion should be examined in more depth considering how consequential emotional development is to children’s media viewing experiences.

An understanding of how children interpret facial expressions can reveal why emotion is so central to their viewing experience. For instance, younger children's ability to recognize complex emotions from facial expression is rudimentary (Batty & Taylor, 2006; Székely et al., 2011). Children in early childhood are unable to discern "intricate emotions like shame, guilt, and contempt" (Wilson & Smith, 1998, p. 538). Instead, they are much better at recognizing "basic emotions [such as] happiness, fear, and anger" (Székely et al., 2011, p. 426). Children's recognition of facial expressions and emotions most notably improves "between 6 and 15 years of age and adulthood" (Montirosso et al., 2010, p. 72). However, compared to adolescents and adults, even "children under 11 years [make] errors when asked to recognize facial emotional expressions" (Chronaki et al., 2014, p. 219). Children's emotional development and understanding in this context has several implications with regard to media content.

First and foremost, subtle, or less intense facial expressions are more difficult for children to interpret than clear and intense expressions (Gao & Maurer, 2009). Montirosso et al. (2010) aptly explain that "in 'real life' facial expression, movements can be displayed at several intensities, suggesting that the [recognition] of emotional expressions" is not always consistent "and that individuals are sensitive to intensity changes" (p. 73). When accounting for such intensity, children have "adult-like accuracy" for happy and sad expressions "earlier than they do for other expressions" (Gao & Maurer, 2009, p. 505). As they get older, "by 10 years of age, children perform as well as adults" on all intensities of facial expression depicting only basic emotions (Gao & Maurer, 2009, p. 513). Thus, the distinct intensity of an emotional expression directly contributes to accurate recognition, with less intense expressions being the most difficult

to identify. It also is clear that children in early childhood are still developing knowledge of even the most basic emotions. Ultimately, when watching movies, it can be expected that children in early childhood “will understand simple portrayals in which characters experience basic emotions like happiness and sadness” (Wilson & Smith, 1998, p. 538).

Wilson and Smith (1998) explain that “younger children are more likely to attend to perceptually salient features on television such as animation, lively music, and sound effects” (p. 535). Additionally, young children are “more likely to focus on physical appearance” when interpreting television characters (Wilson & Smith, 1998, p. 535).

Houle and Feldman (1991) theorize that children in early childhood “may be unable to accurately comprehend on a cognitive level the storylines” presented in popular media (p. 262). As a result, young children are “more strongly influenced by facial expressions” instead of other communicative or emotional cues (Wilson & Smith, 1998, p. 538).

Preschool aged children even have difficulty identifying emotion when listening to tone of voice; thus, they also rely on language content rather than prosody to determine emotion (Chronaki et al., 2014). Conclusions made by Chronaki et al. (2014) support the notion that children will attend mostly to physical appearance or facial expression when discerning emotion in media. Such implications also would point to why animation so successfully portrays basic emotion and why it is so widely used in children’s media.

Children are possibly more attentive to animation because of its ability to directly portray more simple or basic emotions. Even formative educational programs such as *Sesame Street* and *Daniel Tiger’s Neighborhood* utilize puppet characters or animation to engage their young audience. Kendall et al. (2016) suggest several reasons for why children might easily identify emotion in animated facial expressions. Their study refers

to iconic images or faces as being ubiquitous with animated faces. Kendall et al. (2016) also clarify that animated and “real life face” are not equivalent, however, “iconic representations are more efficient at communicating emotional information” (p. 1). Iconic images are described as having low-level “simplified and enhanced visual features” that make their emotional portrayal easier to discriminate (Kendall et al., 2016, p. 2). Kendall et al. (2016) also have found that the “greater contrast and simplicity of cartoon images facilitate[s] rapid discrimination of facial emotion” (p. 11). The authors imply that iconic imagery might only be advantageous to simple communication, nonetheless, young children could be equally receptive to these simplified portrayals of emotion (Kendall et al., 2016). As a result, animation in popular children’s movies has the potential to effectively communicate emotion to children.

Movies can influence children’s socioemotional development in several ways. Children’s movies communicate social norms, prosocial or antisocial behaviors, cultural values, morality, and more. However, for children to interpret the meaning of a movie’s emotional portrayals, they must first be able to recognize the emotional expression displayed by numerous characters (Wilson & Smith, 1998). If children are unable to identify a character’s emotional state, they might not fully understand what popular children’s movies are attempting to communicate through said characters. In this case, animated children’s movies could be better suited for younger children who are less adept at identifying complex emotions, so long as such movies contain comparatively recognizable or basic emotions. Addressing possible differences between animated children’s movies and live-action children’s movies can further support these assumptions.

IV. Walt Disney Studios and Children's Movies

Walt Disney Studios has continued to shape the landscape of children's movies through the 21st century. Not only has Disney produced a significant portion of popular children's movies, both animated and live-action, these movies have also ranked consistently among the highest grossing of all time (Top Lifetime Grosses, 2021). In the top 10 are *Frozen 2* (2019) and *The Lion King* (2019), which have both grossed over \$1,450,000 (Top Lifetime Grosses, 2021). When accounting for movies that are also intended for older audiences, Disney represents over half of those in the top 10 (Top Lifetime Grosses, 2021). Additionally, Disney's movie and television streaming service ("Disney+") has reached 94.9 million subscribers as of February 2021 (Mucha & Singer, 2021). Disney's extraordinary success has established a standard for children's movies that other animation studios such as Illumination and DreamWorks must contend with. Without considering Disney's formidable merchandising machine, their movies alone have substantial reach and inherent cultural influence. As such, various professionals have drawn attention to how Disney may be shaping its targeted audience: children (Fouts et al., 2006; Giroux, 1998; Griffin et al., 2016; Griffin et al., 2018; Padilla-Walker et al., 2013; Ward, 2002; Whitely, 2013).

Fouts et al. (2006) further communicate why Disney's animated and live-action feature movies should be of immediate interest to child development. For one, "the greater length of feature movies allows for the establishment" of characters that children will then be more likely to identify and become familiar with (Fouts et al., 2006, p. 16). In this context, character emotions in movies "may have a greater impact on children than any other medium" (Fouts et al., 2006, p. 16). Furthermore, streaming services, such as

Disney+, allow children to easily access Disney movies for repeated viewings. Fouts et al. (2006) propose that “multiple exposures to these movies... likely increase their impact on children’s attitudes and understanding of the world,” especially if these viewing experiences are mediated by parents (p. 16). Although Fouts et al. (2006) are primarily concerned with the social themes presented by Disney, emotional portrayal still functions as a precedent to children’s understanding. Mar et al. (2010) corroborates such implications with their work on theory-of-mind development and children’s media engagement. As a result, movie length and parent mediation predict an observable impact on child development, particularly in regard to social and emotional skills (Mar et al., 2010, Rasmussen et al., 2016).

In the last decade, Walt Disney Studios has made a significant effort to remake a number of their animated classics: *Alice in Wonderland*, *Sleeping Beauty*, *Cinderella*, *The Jungle Book*, *Beauty and the Beast*, *Dumbo*, *Aladdin*, and *The Lion King*. It is clear that the content of movies can influence children's socioemotional development. This shift in Disney's production of children's movies marks a distinct change in content, from animated characters to live-action. If younger children are watching these movies now more than ever, it is crucial to discern whether this content changes children’s interpretation of emotion in said movies. Ultimately, parents and professionals should understand what type of content in these movies best portrays facial expressions and whether children accurately recognize character emotions.

Coding for facial expression and emotion is one method with the potential to better illustrate emotional content in children’s media. Considering the incredible popularity of Walt Disney Studios, their animated and live-action movies present an

excellent opportunity for such coding and analysis. A more in-depth study would be required for understanding how children actually respond to emotional content in these movies, however, the initial coding of facial expressions and emotion is necessary to establish its depth and/or quality. The present study addresses these questions as they relate to differences in animated and live-action Disney movies.

V. Method

The present study compared character facial expressions in one animated and one live-action children's movie using a detailed process of coding emotions. *Aladdin* (1992) and *Aladdin* (2019), both produced by Walt Disney Studios, were selected to be coded for facial expression and emotion. The established audience and success of these movies make them fitting for analysis, especially considering how recently *Aladdin* (2019) was released.

The characters of Aladdin, Jasmine, Jafar, and Genie from *Aladdin* (1992) and *Aladdin* (2019) were individually coded. In order to observe comparable facial expressions, 7 relatively identical scenes from each movie are selected. A total of 14 scenes are then utilized as primary sources for collecting/capturing images (screenshots) of character facial expressions. Table 1 details the exact scenes analyzed for this study.

Table 1*Characters Coded in Selected Scenes with Corresponding Timestamps*

Scene (characters coded)	<i>Aladdin</i> (1992)	<i>Aladdin</i> (2019)
Scene 1 (Jafar)	2:55 - 6:10	11:41 - 13:00
Scene 2 (Jafar)	13:45 - 15:00	20:20 - 21:45
Scene 3 (Aladdin, Jasmine)	16:30 - 18:30	6:30 - 8:30
Scene 4 (Aladdin, Genie)	33:12 - 35:30	39:55 - 42:58
Scene 5 (Aladdin, Jasmine)	53:00 - 55:10	1:12:10 - 1:14:20
Scene 6 (Jafar, Aladdin, Jasmine)	1:08:50 - 1:10:30	1:41:00 - 1:42:40
Scene 7 (Aladdin, Genie)	1:19:30 - 1:20:40	1:55:00 - 1:56:25

Note. 0:00:00 = hours:minutes:seconds

Scenes were selected based on variety and distinguishability of facial expressions. To improve consistency between each movie, images were captured using several criteria. Most notably, facial expressions were only considered if the character's face is clearly visible. Instances in which a character's face is close-up or prominent are subsequently favored (see Figure 1). Lastly, as many clearly visible facial expressions were captured as possible throughout each scene. A total of 1,155 images were captured from both movies and are referenced in Figure 1 and Table 2.

Figure 1

Example Images Used for Coding Characters

Aladdin



Aladdin (1992) (Musker et al., 1992)



Aladdin (2019) (Ritchie et al., 2019)

Jasmine



Jasmine (1992) (Musker et al., 1992)



Jasmine (2019) (Ritchie et al., 2019)

Genie



Genie (1992) (Musker et al., 1992)



Genie (2019) (Ritchie et al., 2019)

Jafar



Jafar (1992) (Musker et al., 1992)



Jafar (2019) (Ritchie et al., 2019)

Table 2

Total Images Captured from Aladdin (1992) and Aladdin (2019)

Character	Animated Images: <i>Aladdin</i> (1992)	Live-Action Image: <i>Aladdin</i> (2019)
Aladdin	125 (262)	125 (192)
Jasmine	75 (146)	75 (81)
Jafar	75 (158)	75 (103)
Genie	75 (112)	75 (101)
Totals	350 (678)	350 (477)

Note. (x) = original number of images captured

Of the 1,155 images gathered from both *Aladdin* (1992) and *Aladdin* (2019), 700 were randomly selected to be coded for basic or complex emotion. A random number generator was used to proportionally select out (remove) images that were not coded. The remaining images made up the 700 to be coded for emotion. Aladdin was coded for the largest number of images (125 from each movie) because he is the main character of both movies and appears in 5 out of the 7 selected scenes. The other characters were coded for an equal number of images (75 from each movie). These images were then organized and given to two distinct coders. Each coder was provided with a coding manual directing

them to independently label all 700 images as either basic or complex according to specific guidelines.

Coding Measures

Emotional expressions were coded as Basic or Complex. The six basic emotions identified for the purposes of this study based on past research included happiness, sadness, fear, anger, disgust, and surprise (Bayet, 2018; Gao & Maurer, 2009; Gao et al., 2010; Houle & Feldman, 1991; Montiroso, 2010). These same emotions were identified by Houle and Feldman (1991) for their coding of emotion in popular children's television; they are selected because of their universality and commonality. Whereas Houle and Feldman (1991) coded for both situational context and emotional expression, the present study only codes for emotional expression. If characters depicted any of the 6 basic emotions, these were coded as Basic. Observable emotions that did not fall within the Basic categorization were coded as Complex. Examples of complex emotions include pride, shame, guilt, jealousy, contempt, compassion, nostalgia, humiliation, resentment, alienation, etc. (Fischer et al., 1990; Gross & Bailiff, 1991; Székely et al., 2011). All ambiguous or indiscernible emotions also were coded as Complex (e.g., a facial expression that is neutral and/or displays limited emotion). Ultimately, facial expressions were only coded as either Basic or Complex and more specific emotions were not noted.

Responses from both coders were collected and compared. Then, reliability was calculated by dividing the number of images that coders agreed upon by the total number of images coded. Reliability between the coders is 86%. All discrepancies in coding were resolved through discussion.

VI. Results

Table 3

Mean and Standard Deviation of Final Coding Results

Character(s)	<i>N</i>	Min	Max	Mean	Std. Deviation
Aladdin (1992)	125	1	2	1.46	0.50
Aladdin (2019)	125	1	2	1.78	0.42
Jasmine (1992)	75	1	2	1.47	0.50
Jasmine (2019)	75	1	2	1.67	0.47
Jafar (1992)	75	1	2	1.45	0.50
Jafar (2019)	75	1	2	1.84	0.37
Genie (1992)	75	1	2	1.43	0.50
Genie (2019)	75	1	2	1.79	0.41
All Characters: <i>Aladdin</i> (1992)	350	1	2	1.45	0.50
All Characters: <i>Aladdin</i> (2019)	350	1	2	1.77	0.42

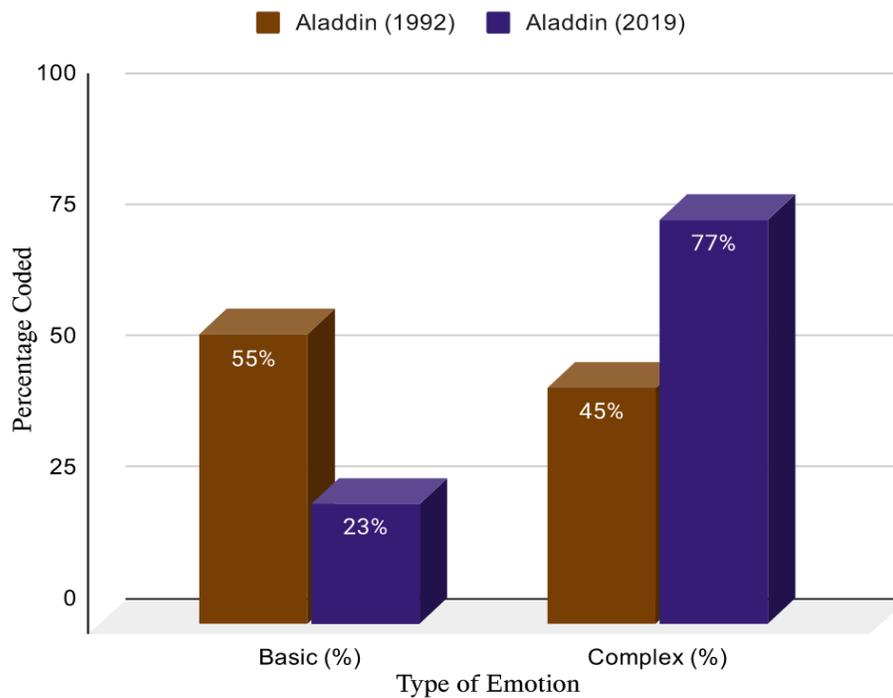
Note. 1 = an image coded as basic, 2 = an image coded as complex

Table 3 details the mean and standard deviation for each set of coded data. A paired two sample means test was conducted to determine significance ($p < .05$) between each character (1992 vs. 2019) and between each movie (1992 vs. 2019). This measure revealed a statistical significant difference between each animated and live-action character for occurrences of basic emotion. Statistical significant difference was found between the animated Aladdin ($M = 1.46$, $SD = .50$) and the live-action Aladdin ($M = 1.78$, $SD = .42$); $t(124) = -5.80$, $p = .000$). Significant difference was found between the animated Jasmine ($M = 1.47$, $SD = .50$) and the live-action Jasmine ($M = 1.67$, $SD = .47$); $t(74) = -2.48$, $p = .008$. Significant difference was found between the animated Jafar ($M = 1.45$, $SD = .50$) and the live-action Jafar ($M = 1.84$, $SD = .37$); $t(74) = -5.46$, $p = .000$. Significant difference was found between the animated Genie ($M = 1.43$, $SD = .50$) and

the live-action Genie ($M = 1.79, SD = .41$); $t(74) = -5.13, p = .000$. Finally, statistical significant difference was found between *Aladdin* (1992) and *Aladdin* (2019) for all respective characters combined; $t(349) = -9.37, p = .000$. The followings figures (2, 3, and 4) illustrate rounded percentages for how each movie and character was coded for emotion.

Figure 2

Percentage of Basic and Complex Emotion in Aladdin (1992) and Aladdin (2019)

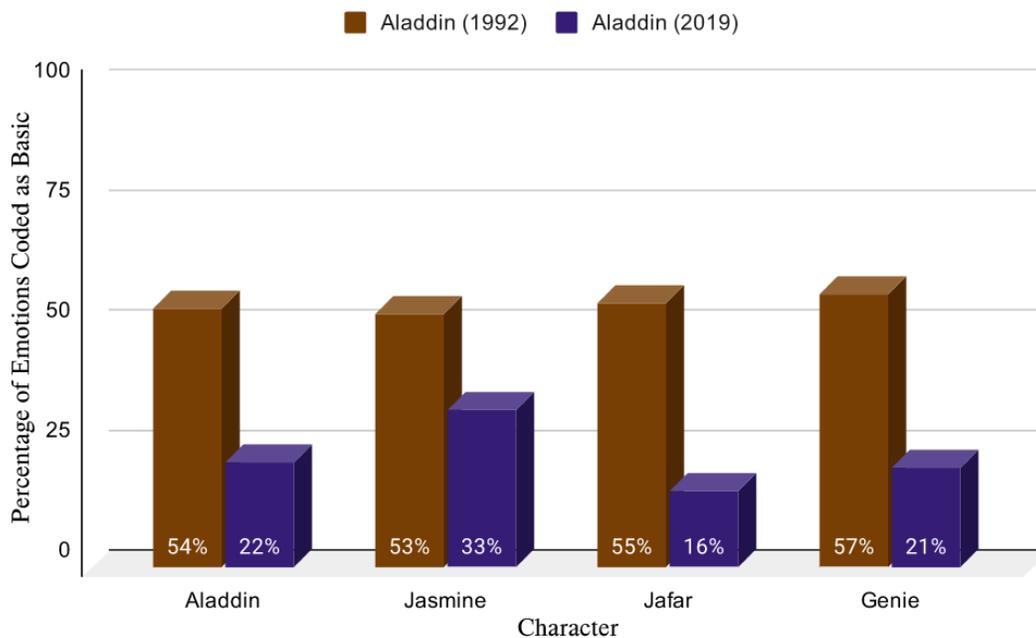


The combined totals of basic and complex emotion for each movie is displayed in Figure 2. Significant difference was found between *Aladdin* (1992) and *Aladdin* (2019) for both basic emotion and complex emotion, respectively. Percentages are calculated as fractions of basic or complex emotion coded over the total number of images coded for that particular data set. As hypothesized, characters in *Aladdin* (1992) portray significantly more basic emotions (55%) than their live-action counterparts (23%).

Alternatively, characters in *Aladdin* (2019) portrayed close to double the amount of complex emotion (77%) than that of the animated version (45%). *Aladdin* (1992) also happens to have a more even distribution of basic and complex emotion than that of *Aladdin* (2019).

Figure 3

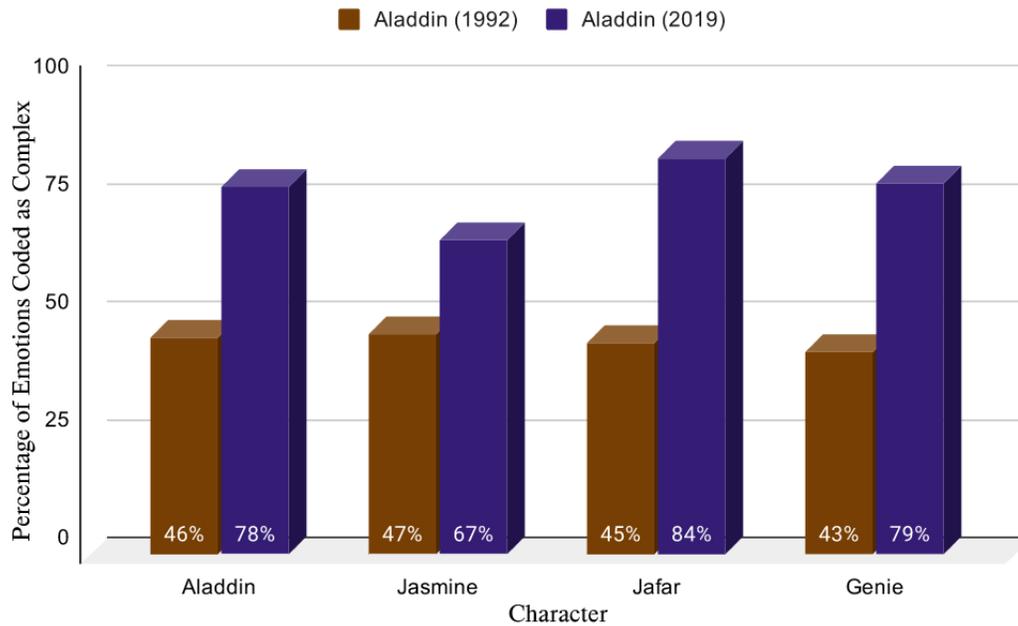
Percentage of Emotion Coded as Basic for Each Individual Character



A comparison of basic emotion between characters from both movies is presented in Figure 3. There is little variance in basic emotion between characters from the animated *Aladdin* (1992), with percentages all close to 55%. Characters from the live-action *Aladdin* (2019) had more variance in how much basic emotion they portrayed, with Jafar being the least (16%) and Jasmine being the most (33%). Again, basic emotion portrayals for each character in the animated *Aladdin* (1992) are far more prevalent than characters in *Aladdin* (2019).

Figure 4

Percentage of Emotion Coded as Complex for Each Individual Character



A comparison of complex emotion between characters from both movies is presented in Figure 4. As to be expected, characters in the live-action *Aladdin* (2019) portrayed more complex emotion than did characters in the animated *Aladdin* (1992). Similar to the results for basic emotion, portrayals of complex emotion are relatively consistent across all animated characters (around 45%). Genie from *Aladdin* (1992) has the least amount of complex emotion portrayals (43%). Alternatively, Jafar from the live-action *Aladdin* (2019) portrays more complex emotion (84%) than any other character. Consistent with Figure 3, the live-action Jasmine portrays the least complex emotion (67%) compared to the other live action characters.

VII. Discussion

Results indicate that the animated *Aladdin* (1992) portrays far more basic emotion than the live-action *Aladdin* (2019). Although this study only includes two movies, the

results do support assumptions that animated facial expressions are more simplified or basic in emotion than live-action facial expressions. Based on these results, it is presumed that children will comprehend the emotion of animated characters better than live-action characters, at least in the case of *Aladdin* (1992) and *Aladdin* (2019). Alternatively, children watching the animated *Aladdin* (1992) could be limited in their exposure to a variety of new or complex emotional experiences. Greater instances of complex emotion in *Aladdin* (2019) could present children with a much wider range of emotions and address the limitations of animation. Additional children's movies or television shows would need to be coded in order to determine if such conclusions can be made across all media. Further study also is needed to address exactly what emotions are being portrayed in *Aladdin* (1992) and *Aladdin* (2019), building upon the coding of just basic and complex emotion. Nonetheless, the coding of basic and complex emotion in these two movies present a few interesting findings.

Basic emotion in *Aladdin* (1992) was close to evenly distributed among characters. Results for complex emotions were similarly distributed. Basic emotion was subsequently coded at a slightly higher percentage than complex emotion. On one hand, this balance of emotions could imply that both young children and adults would be receptive to the emotion portrayed in *Aladdin* (1992). Adults might find more nuanced or complex portrayals of emotion as engaging, whereas children will easily follow along with more basic portrayals. On the other hand, these results could indicate the emotion in *Aladdin* (1992) to be less versatile and potentially less engaging for older audiences. It should also be acknowledged that *Aladdin* (1992) and *Aladdin* (2019) are not explicitly targeted towards an early childhood audience. Although preschool age children are likely

watching these movies, Walt Disney Studios is probably not too concerned with how younger audiences receive their movies outside of overall engagement.

Analysis of individual character differences presents additional implications. In the live-action *Aladdin* (2019), Jasmine, the only female character, was coded as having the highest number of basic emotions. While this may make the character's expressions more recognizable to children, it could also communicate that women experience less complex emotion or even different emotions from men. This portrayal could be damaging to young children's perception of women as it may perpetuate the trivialization of women's emotions or feelings. Whether Disney or other children's movies treat women characters the same way should also be investigated. Also interesting in the live-action *Aladdin* (2019) is the character of Jafar. Jafar is the villain of *Aladdin* (2019) and subsequently has the most portrayal of complex emotion. If young children are unable to interpret this character's emotions, his motives and morality might also be allusive.

The present study provides a basis for understanding that animated children's movies could certainly be effective in communicating emotion to young children. It is hoped that this study provides insight into what kind of media content children should ultimately be watching. While these results certainly inform the likelihood that young children will understand animated movies based on facial expression, they do little to show the actual emotional or developmental impact of animation on young children. Unfortunately, there is no evidence here to suggest whether children's ability to recognize animated emotion translates to emotional recognition in real social interaction. In other words, it is not clear if children can apply emotions that they recognize in animation to real life facial expressions.

Future studies should most definitely include child participants. Although coding provides an initial insight into how children might respond to different types of media, it is not enough to make strong conclusions. The next step in understanding how children understand animation and live-action movies is to have them watch popular movies and subsequently interview them for comprehension. This should be done with children in early childhood and of various ages to differentiate between understanding at different developmental ages/stages. The context in which children view these movies must also be taken into consideration (Christakis & Zimmerman, 2009). For example, parent mediation could significantly alter how children might interpret animated or live-action movies. If live-action movies are indeed more difficult for children to comprehend, parent mediation might mitigate that deficit. Furthermore, an analysis of media targeted towards infants and toddlers might reveal that such programs incorporate even more basic emotion than animated movies like *Aladdin* (1992). For example, puppets like those used in *Sesame Street* are extremely limited in the variety of facial expressions they are able to produce. Coding media that utilizes puppet characters could also produce interesting results with regard to basic and complex emotion.

Finally, implications for how facial expression relates to gender and the portrayal of evil in children's movies should be investigated. The notion that female characters in live-action children's films might be given less opportunity for displaying complex emotion requires attention. One explanation for this occurrence could be the use of makeup on female characters to accentuate their facial features and cause facial expressions to appear more conventional. This phenomenon should be explored in a variety of movies and addressed for its potential impact on how women's facial

expressions are perceived. Villainous characters in children's movies portraying more complex emotion also has implications for how evil and morality are communicated to children. Further analysis on these types of characters and the contexts in which their expressions are more complex could build an understanding of how children's movies communicate immorality. Whether morality is ambiguous or subjective is one such consideration related to facial expression and emotion.

Conclusions

Results from the present study provide significant evidence that animated children's movies can portray more basic emotion than live-action children's movies. This is precisely the case when comparing the animated *Aladdin* (1992) with its live-action remake, *Aladdin* (2019). In the context of emotional development and early childhood, it is then supposed that young children will be more receptive to facial expression and emotion in animated children's movies than they would live-action ones. Alternatively, the significance of complex emotion portrayed in live-action movies could provide children with a wider variety of emotional experiences. Further study is needed to determine if these findings and implications are consistent with additional movies or other forms of children's media. Most importantly, a study that incorporates child participation is necessary to find differences in how children understand and respond to popular animated and live-action children's movies.

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