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# Zooming in on Shot Scales: A Digital Approach to Reframing Transnational TV series Adaptations

**Abstract:** This pilot study illustrates an empirical cross-cultural comparative analysis of transnational TV series adaptations. It investigates patterns of shot scale distribution in conjunction with gender and display of emotions to uncover and compare cultural representation in France and the US. The study showcases 16 episodes of *Law & Order: Criminal Intent* and its French adaptation, *Paris Enquêtes Criminelles*, for a total of 44,602 frames. Relying on the deep learning toolkit, the Möbius Trip, we propose an objective shot-scale model to frame and quantify a large quantity of data. We propose a layered, four-level reading of the data through intercultural models, media theories and feminist and psychological approaches to articulate cultural decoding. This study provides insights into the ethics of television representations of male and female characters on screen across cultures and the process through which cultural proximity is achieved.

**Keywords:** transnational TV series adaptations, artificial intelligence, culture, big data, cross-cultural comparison

## 1 Introduction

This pilot study investigates the impact of emotion display and shot scales on cultural and gender representation in transnational TV series adaptations. Showcasing eight episodes of the American TV series *Law & Order Criminal Intent*, and their equivalent French adaptation, *Paris Enquêtes Criminelles*, amounting to 44,602 frames, we seek recurring patterns of shot scales in conjunction with gender and characters' expressions of emotions to uncover and compare cultural representation in France and the US. We rely on our AI toolkit, *The Möbius Trip*, a multimodal analysis engine based on machine learning techniques, to conduct our research. We establish a shot-scale model based on strict conventions that provides a steady rationale to label, classify, measure and compare visual data. Following a dynamic model of *close/distant reading*, we conceptualize different levels of reading of the audiovisual text by gradually zooming in on the data. We propose four levels of reading as we include new variables. We first focus on shot scales between the French show and the American show at a cultural level. Next,

we zoom in and analyze male and female characters through shot scales. Lastly, we zoom in again and look at the character's emotions through shot scales. The episodes are reorganized in the shape of graphs and visuals to better discern patterns and ease comparisons between the French and the American version. There are substantial differences between both versions of the show exposing the context and values of the societies they are embedded in. Big data combined with extremely detailed depictions help us understand the intricacies of cultural representations on-screen between France and the US. Our innovative approach offers unprecedented data and opens the arena for new comparative cultural studies in film and TV series. The project is still developing, and we are presenting tentative results of pilot projects to experiment with and evaluate the validity of the current stage of our work.

## 2 Concepts

### 2.1 Framing / Reframing

Our comparative research on transnational TV series between *Law & Order: Criminal Intent* and its French adaptation *Paris Enquêtes Criminelles* is framed within *framing theory*. This theory, pioneered by sociologist Erving Goffman in 1974, contends that frames enable people to “locate, perceive, identify, and label” the flow of information around them (Goffman 1986: 21). The primary function of framing is thus to describe, organize or structure message meaning. To Goffman, framing is a system through which people can understand culturally determined definitions of reality and make sense of the world. It is, therefore, a necessary part of human communication. Framing plays an important role in how a particular issue is presented before the people and how they perceive it.

In cinematography, framing refers to all the elements that appear in the frame, as well as the way they are arranged to convey meaning. It makes audiovisual texts intelligible by decoding the meaning system carried in each frame and allows us to understand better how directors fill the screen to manipulate the audience. The director has access to multiple techniques, such as shot scale, camera angles, color, light and aspect ratio, among others (Doane 2021: 76; D’Angelo and Kuypers 2010: 248). In addition to film techniques that explore the possibilities of cinema, Renita Coleman refers to *visual framing* “to mean media content that is processed by the eye alone” (D’Angelo and Kuypers 2010: 236). Coleman explains that visual framing research is concerned with the portrayal of race and gender stereotyping as well as emotions elicited by images and their effects on viewers

(D'Angelo and Kuypers 2010: 244). This approach is appropriate for our research, which is concerned with gender representation on screen.

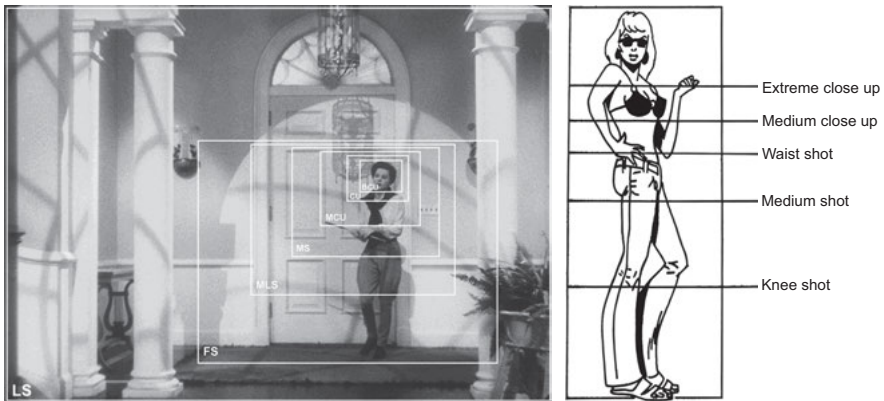
We study transnational TV series adaptations, which consist in adapting a narrative structure to a domestic context. We rely on framing theory to analyze elements that constitute a televisual text and understand how it is reframed to suit another cultural environment. Comparing the two crime shows highlights the framing choices (e.g., film techniques) through which cultural representation is achieved. Such research emphasizes the importance of framing and the ways in which it impacts how a story is told; as French film theorist Jean Mitry points out, “The story will be the same, but the impressions, emotions, ideas and feelings expressed will be utterly different” (Mitry 1997: 135). The comparison makes data meaningful by providing a point of reference for aesthetic choices and cultural differences. Russian philosopher Mikael Bakhtin stated, “In the realm of culture, outsideness is a most powerful factor in understanding. It is only in the eyes of another culture that foreign culture reveals itself fully and profoundly” (Bakhtin 2010: 1). The aesthetic choice of the adaptor is motivated by *cultural proximity* – the idea that audiences favor media that reflect their own local culture (Burch 2002: 572). Hence comparative study informs us about the communication style of each culture, its cultural norms (e.g., emotions display), as well as its tradition of filmmaking.

The framing theory also applies to our analytic method. Managing a large quantity of visual data is contingent on objective framing (identifying, labeling and classifying) of gender representation, emotion display and shot scale. We reframe shot scale conventions by challenging the loosely defined conventions and proposing a new framework to objectively quantify, measure and compare shot scale.

## 2.2 Shot scale

Our research focuses on the implications of shot scales in transnational TV series adaptations. Shot scale is defined as “the apparent distance of characters from the camera, is one of the most effective visual devices in regulating the relative size of characters’ faces, the relative proportion of the human figure to the background and arranging film content according to its saliency (Carroll and Seeley, 2013)” (quoted in Rooney and Bálint 2018). It is one of the vital cinematographic features that regulate the relative size of characters’ faces, the relative proportion of the human figure to the background (Salt 1992; Bowen and Thompson 2013), arranging film content to emphasize an element (Rooney and Bálint 2018) and directing the audience’s gaze on particular elements (Cutting 2021: 2). Shot scaling is not just a film technique part of the film language; it is an element of representation that might carry meaning.

Film studies scholar Annette Kuhn defines shot scales as “An informally agreed and widely accepted set of conventions that describe and define different framings of a film image, or apparent distances between camera and subject” (Kuhn 2012: 1321). Depending on the model, shot scales are divided into seven or nine categories. Shot scales typically range from Very Long Shot (VLS), Long Shot (LS), Medium Long Shot (MLS), Medium Close-up (MCU), Close-up (CU) and Big Close-up (BCU). Though shot scales are a fundamental expressive tool of the film language, the terminology is quite elastic and deals mainly with concepts (Arijon 2015: 31). The terminology is approximative and not always consistent. As Monaco describes, “One person’s close-up is another’s ‘detail shot,’ and no Academy of film has (so far) sat in deep deliberation deciding the precise point at which a medium shot becomes a long shot or a long shot metamorphoses into an extreme long shot. Nevertheless, within limits, the concepts are valid” (Monaco and Lindroth 2000: 197). Shot scale frameworks (Figure 1(a, b)) highlight the difference between Barry Salt’s scale in terms of proportion as well as in the terminology (e.g., MLS and Knee shot) and that of Daniel Arijon. We can see that a big close-up (BCU) is sometimes referred to as an extreme close-up (XCU). Likewise, a medium-long shot (MLS) can also be called a knee shot; it is different from an American shot that starts above the knees but is not always considered in formal frameworks. In sum, the convention often diverges and the contrast between shot scale models can be significant.



**Figure 1:** (a) Barry Salt’s shot scale framework, Barry Salt, <https://cinemetrics.uchicago.edu/salt.php>, accessed July 31, 2023. (b) Daniel Arijon’s shot scale framework, Daniel Arijon. *Grammar of film language*, Figure 3.6: “Types of shots”, p. 36 of 706.

## 2.3 Aspect ratio

*Law & Order: Criminal Intent* and *Paris Enquêtes Criminelles* share the same narrative but are shot in different aspect ratios. Movies and TV series tell a story through time, and the aspect ratio plays a part in how the story comes across. Aspect ratio is the ratio of the width to the height of an image. The format evolved following technological progress and cinematic trends. For TV shows, the aspect ratio is forced to follow the evolution of television devices. For decades, the standard ratio for television used to be 4:3 (1.85:1) to fit the squarish frame of the television of the time. 4:3 is also known as the Academic Ratio because it was standardized by the Academy of Motion Picture Arts and Sciences as the standard film aspect ratio in 1932. The 4:3 was replaced by the 16:9 (1.77:1) aspect ratio in the 1990s with the advent of widescreen HDTV. The rectangle widescreen display offers a more immersive and cinematic experience to the viewers. It is a compromise that allows the audience to watch blockbuster films as well as regular television programs.

Aspect ratio plays “a fundamental, determining role in forming and framing television’s spaces” (Cardwell 2015: 83). Aspect ratio impacts filmmakers’ creative choices. Bordwell explains, “Because home video might crop part of the image, some directors compose their shots so that the key action is concentrated in an area that will fit smaller displays” (Bordwell, Thompson, and Smith 2017: 47). In altering the artistic choices, the aspect ratio can impact a TV series’ style and mood. For instance, *The Wire* creator David Simon refused to conform to switching from a 4:3 to 16:9 ratio because the creators decided to “use 4:3 to connote both a classic televisual aesthetic and unglossy, social realism, and to explore the not-yet-fully exploited spatial possibilities of 4:3” (Cardwell 2015: 95). For instance, a 4:3 ratio can provide an *old-timey* feel that contributes to the style of the show; it can also give a *real feel* because the ratio allows filling the frame without standing too far from the character, which is the preferred format by comedies and drama.

## 3 Framing the research

This section introduces the theoretical framework that structures our comparative analysis on shot scales and emotion display in *Law & Order* and *Paris Enquêtes Criminelles*. We frame our layered reading analysis on four levels, namely intercultural, media, feminist and psychology.

Each level will provide us with a lens to read our empirical data as we zoom into more granularity.

### 3.1 Level 0: Intercultural framing

This level looks at emotion display norms in different cultures. It introduces Edward T. Hall’s *Contexting Model* to account for these differences.

#### 3.1.1 Emotion display

Many studies suggest that emotions are genetically hardwired into all human beings and that basic emotions such as happiness, sadness, anger, surprise, fear and disgust are universally shared (Grodal 1999: 90; Waller et al. 2008: 435) (Figure 2). Patulny et al. explain, “People share emotions independent of age and gender, education, status, and cultural practices, thus corroborating the universality of emotion sharing” (Rimé 2009, quoted in Patulny et al. 2019: 104). While emotions are perceived as innate and, therefore, transcultural, they play out differently and take on different meanings according to a culture’s communication style specifics. Patulny et al. explain that cultural norms rule the display of emotions and are learned early in life. Culture display rules “function to regulate expressive behavior depending on the social context” (Patulny et al. 2019: 137). Appropriate emotion display is proof that a member of a community is well integrated.



**Figure 2:** Facial expressions data set: joy, anger, disgust, sadness, surprise, and fear. Source: Cohn-Kanade (quoted in Crawford 2021).

### 3.1.2 Contexting model

Anthropologist Edward T. Hall proposes the *Contexting Model* to frame how emotion display plays out in the communication style in different cultures. He presents two different cultural approaches to communication: high-context and low-context. Hall explains,

A high-context (HC) communication or message is one in which most of the information is either in the physical context or internalized in the person, while very little is in the coded, explicit, transmitted part of the message. A low-context (LC) communication is just the opposite, i.e., the mass of the information is vested in the explicit code (Hall 1989: 79).

Members of high-context cultures like the French culture tend to share implicit knowledge with their fellow community members. Consequently, interactions rely less on words and more on non-verbal communication cues, including facial expressions. In contrast, in low-context cultures like the American culture, people communicate with explicit content because the goal of communication in an American context is clarity. Hence, Americans rely less on facial expressions and therefore display fewer emotions.

## 3.2 Level 1: Media framing

This level frames the media aspect of this investigation. It provides us with technological evolution, style and genre and spectatorship practices. This level of analysis is concerned with technical elements and how they inform us of the cultural tradition of film and TV series practices.

### 3.2.1 Technology

David Bordwell approaches the stylistic evolution of shot scales from a technical and historical perspective in cinema and TV series.<sup>1</sup> He explains that technological progress forces directors to rethink their aesthetic approach and adapt their cinema techniques (Bordwell, Thompson, and Smith 2017: 46). For instance, the rise of CinemaScope in the 1950s led to a new cinema screens aspect ratio, which in turn impacted the way directors use shot scale. This change in cinema also operates in the television industry. Older generation smaller TV sets with a 4:3 ratio and poor definition forced “the TV series directors to rely on closer, more visible

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<sup>1</sup> Cinema conventions impact TV series.

shots” (Bordwell, Thompson, and Smith 2017: 47). In the 2000s, the surge of wider and bigger screens resulting from technological advances spread worldwide and became the new standard for the TV industry. The ratio had an impact on directors who had to rethink their artistic choices. One of the impacts is that medium shots and long shots appear to be of *normal scale* (Doane 2018). The point of contention resides in whether the close-up is compatible with a wider ratio. For Bordwell, a wider screen made close-ups unnecessary when he states, “Directors even refrained from using close-ups, perceived as too aggressive, and enticed them to use distant framings and full-size figures” (Bordwell, Thompson, and Smith 2017: 47). In turn, French film critic André Bazin believed that the close-up could be sustained with wider screens, and “the ‘useless’ space that surrounds faces is thus not as useless as all that; on the contrary, it highlights those faces, not in relation to the frame but in restoring them to a natural relation with space” (Cardwell 2015: 92). Media scholar Paul Frosh takes a cautious approach when he says, “the headshot—although by no means entirely eroded—has become less dominant in the televisual repertoire than previously since it does not fully exploit the more contextual and epic dimensions of the widescreen format” (Frosh 2009: 98).

### 3.2.2 Style and genre

Jason Mittel explains that television genres result from a body of production techniques, textual aesthetics and historical trends (Mittel 2004: xi). Indeed, technology impacts production techniques, which in turn impacts the style of the movie and, consequently, its genre. Hence, the TV series genre is defined through historical periods and the changing use of this aspect over time. Shot distances are often dependent on the film’s narrative, genre and overall style (Edgar-Hunt et al. 2015: 123). Focusing on the impact of shot scale on TV crime shows, Barry Salt concludes, “The main variations in shot scale seem to depend on genre” (Salt 2001: 112). For instance, western, war, and adventure contain high amounts of very long shots, whereas melodramas and comedies are generally shot from closer (Roggen 2018: 10). Relying on a corpus of twenty crime shows, Salt concludes that crime TV shows are predominantly shot with a vast majority of CU, towering over any other shot scale (Salt 2001: 104).

Genre is a fluid concept that includes a group of procedures regarding composition, style and topics (Albera 1996: 144). Typically, film techniques abide by the codes and conventions of the genre they portray. For instance, Nick Redfern established that comedy and romance have bright colors (Redfern 2021: 265). James Cutting demonstrated that action films tend to display a faster average shot length than drama (Cutting 2014: 76) and that a faster pace correlates with closer shots (Cutting and Candan 2015: 41). Upon comparing both shows, Digeon and



Amin have determined that *Paris Enquêtes Criminelles* is a hybrid version of the American original (Digeon and Amin 2021). The French version is almost twice as fast, has brighter and warmer colors and contains more music. Based on these findings, we can say the French are a hybrid version of the original show because it contains elements related to comedy and action.

### 3.2.3 Spectatorship cultural practices

In the same way that technology and genre are markers of time, historical periods, and domestic tradition of filmmaking affect the use of shot scales, domestic consumers' habits also influence directors' artistic choices. Comparing the use of Shot Scales in Hollywood and German Cinema from 1910 to 1939, Nick Redfern claims that early cinema scale convention was to mimic the point of view of an audience in live theaters resulting in "long-shot distance, frontal perspective, unity of view-point, and relative narrative autonomy" (Redfern 2010: 7). Consumers' habits evolve over time, influenced by other media as well as global practices. Globalization seems to lead to the uniformization of consumers' habits. Redfern concludes that both the German and the US evolved from the distant framing of the medium-long shot and long shot to increased use of medium shots and medium close-ups.

The recent growth in the size of home cinema TV sets since the 2000s also impacts viewers' habits and modified directors' TV series practices. Troscianko et al. found that "bigger is better" for faces and for landscapes (Troscianko et al. 2012: 416). They mean that featuring faces and landscapes offers a more immersive, more engaging experience for the viewer. Hence, we can imagine that TV series directors need to follow the trend to add more CU and LS to comply with consumers' habits.

## 3.3 Level 2: Feminist framing

This section is concerned with a feminist approach to gender representation in film and TV series. The theories presented here enlighten us on gender inequality on screen, emotion display rules and the gaze of the camera. They reveal the blatant inequalities between genders and shed light on the practices that breed them.

### 3.3.1 Gender representation on screen

Women have been widely underrepresented on screen. Non-profit research organization Geena Davis Institute stunned the world in 2004 when it exposed the bla-

tant inequality and under-representation of women in terms of screen time in the film and TV series industries. According to Geena Davis, “for every one female character, there were three male characters. If it was a group scene, it would change to five to one, male to female” (Savage 2011). Such inequality is also reflected in the TV industry at a world level. The Conseil Supérieur de l’Audiovisuel (CSA), a French institution that regulates the various electronic media in France, concurs with Geena Davis Institute’s findings, showing a similar imbalance in gender representation in the TV industry (CSA 2020: 8). In a previous study on *Law & Order: Criminal Intent* and *Paris Enquêtes Criminelles*, Digeon and Amin revealed the overwhelming domination of male characters’ screen time with a 75%–25% average (Digeon and Amin 2021: 15).

### 3.3.2 Emotion display

In addition to cultural differences and social context, emotion display rules depend on gender. Each society abides by different gender norms. These gender norms play out in every aspect of everyday life and rule the display of emotion. Anger display is typically more accepted in men, while women are tacitly encouraged to hide their anger early. In turn, men are taught to hide their feelings of sadness (Patulny et al. 2019: 137). These cultural norms are represented on screen because TV series mirror the society they are embedded in. As Chesbro et al. point out, “While depictions of men in film have tended to be extremely masculine, depictions of women have tended to be extremely feminine” (Chesbro et al. 2013: 325). TV series mimic the behavior and reinforce it. Doane explains, “women are more emotive, with access to a greater range of facial expressions than men” (Doane 2021: 128).

In *Emotions, Genre, Justice in Film and Television*, Deirdre Pribram takes a cultural approach to representations of emotions on screen. Showcasing a close reading of the movie *Crash*, she states, “Police officials, detectives (public or private), and legal personal are often motivated by anger: moral indignation the transgression committed by the offending party; sympathy for the victims, which usually comes displaced as an outrage at the perpetrator” (Pribram 2012: 33). Digeon and Amin’s empirical study on gender and emotions of *Law & Order* and *Paris Enquêtes Criminelles* (Digeon and Amin 2020) concur with Pribram’s findings. They demonstrate that both American and French male characters display more anger and female characters show more fear. They suggest that men could be the perpetrators of the crimes while women would be more likely to be the victims.

### 3.3.3 Camera gaze

Rooted in a psychoanalytic approach, feminist film theory has been a substantial component of film theory since the 1970s. It focuses on gender as the centerpiece of theoretical analysis of cinema and TV series (Kuhn 2012: 617) and deals with the unconscious of the text and symbol of the image. In her foundational article “Visual Pleasures”, Feminist film theorist Laura Mulvey coined the term male gaze “male gaze” to describe the use of the camera as the eye of the dominant heterosexual white male (Mulvey 1989: 347). The camera becomes the media in which “women’s bodies are objects that give pleasure through voyeuristic and fetishistic forms of scopophilia, pleasure in looking” (Oliver 2017: 452). The concept of the male gaze assumes that the camera operates as the eye of a white heterosexual man who typically objectifies women. Based on this idea, shot scales are consequential and become a pivotal indicator of the conscious (or subconscious) expression of sexual desires. Among all the shot scale types, The CU raises the most interest because it “tends to celebrate an intimacy of scrutiny that both magnifies the attractiveness of the film and produces an undue pleasure of looking, one that empowers an aggressive sexual instinct to conquer a desirable object” (Deppman 2021: 2). CUs have a mystique that seemingly glorifies women while oppressing them. For male characters, the CU is also equivocal because, it is “aligned with castration, a psychic threat to masculinity” (Doane 2021: 138). Because of these reasons, we can assume CU is more prevalent for female characters. However, Doane warns us, “It would be highly inaccurate, of course, to suggest that only women have close-ups” (2021: 138).

In contrast to the CU, the long shot seems to do the exact opposite. “A long shot is just as stylistically compelling, morally problematic, and theoretically suggestive as the close-up in the study of the complex relations ethics, film style, and female power” (Deppman 2021: 5). A long shot desexualizes women’s appearances because the audience has a complete picture of a woman that looks like real life (Deppman 2021: 4). Bazin called it the natural “fact” of life (Bazin 2005: 35). Based on Deppman’s argument, some types of shots are connoted and might convey meanings beyond a shot scales’ aesthetic and dramatic potential.

## 3.4 Level 3: Psychology framing

For this level of framing, we introduce the cognitive film theory and the Theory of Mind (ToM) to examine the impact of shot scale and emotion display. Cognitive film theory informs us on the shot scale distribution at the narrative level and how the aesthetic, artistic and creative choices allow the audience to understand

film. In turn, ToM is concerned with audiences' emotional involvement through shot scale combined with characters' emotions display.

### 3.4.1 Cognitive film theory

Cognitive film theory focuses on movies that are structured to convey their narratives to viewers. A cognitive approach allows us to “study the predispositions of the mind — its perception, cognition, and affect” (Cutting 2015: 192). Salt and Kovacs find systematic regularity of shot scale distribution patterns in directors' work (Kovács 2014: 2; Salt 2009: 403). However, Kovács suggests that consistent shot scale distributions cannot result from a conscious decision by the movie director. To explain what makes filmmakers use similar kinds of shot scales in different films, he proposes a *cognitive hypothesis*. He explains, “there are some psychological, perceptual constraints that rule the relative rate of closer or longer shots independently of the conscious choices of the authors (Kovács 2014: 12). Directors might unconsciously follow aesthetic rules, narrative types, style trends or genre conventions.

In fact, television genres rely on viewers' familiarity with forms and conventions. As per a cognitive process, the viewer has an understanding of the framing of the film and the preemption of its codes and conventions (Bordwell 1992: 184). “These processes involve the ‘construction’ of perceptual or cognitive ‘conclusions’ based on nonconscious inferences, which are in turn constituted by ‘premises’ offered by perceptual data, internalized rules and schemata, and additional prior knowledge” (Bordwell 1985: 31, quoted in Nannicelli and Taberham 2014: 8). Spectators tacitly agree with the conventions of a particular style and its mood. They preempt characters' representation, display of emotions and film techniques that characterize a show. They unconsciously understand the informative and dramatic functions of shot scales and feel emotionally engaged with the narrative.

### 3.4.2 Theory of mind

Theory of Mind (ToM) refers to the psychological process by which people recognize and understand the mental states of others. ToM plays out on the audience's affect as it is concerned with the way shot scales impact film viewers. Along with other film techniques that contribute to regulating emotional involvement in a show, it is accepted that “the closer the image, the more it raises emotional arousal, the more distant the image, the more distant the viewer's emotional relation to the image” (Kovas 2014: 1). Several empirical studies have confirmed such

a precept. Shot scales have been widely considered the most potent means to convey emotional intensity to an audience (Benini et al. 2016: 16501); it impacts viewers responses related to “character engagement, such as theory of mind, emotion recognition, and empathic care” (Savardi et al. 2021: 3). Among the different shot scales, the close-up is often perceived as the most effective tool to display facial expressions and convey emotions to an audience. French philosopher Gilles Deleuze calls the close-up the “affection image” *par excellence* (Bordun 2017: 90). Framing a strong emotion with a close-up increases an emotional response from the audience. As Rooney and Bálint put it, “Close-ups of sad faces produced higher levels of ToM-self than other conditions” (Rooney and Bálint 2018). Hence, a sad close-up is most likely to trigger a stronger response than the neutral close-up because it is associated with higher levels of Theory of Mind. The other types of shots are not as thoroughly addressed as the CU, which is perceived as the most important shot type. Nonetheless, Canini et al. explain, “Medium shots are probably not specific to a definite set of emotions, thus finding a fair level of employment in all types of filmic material” (Canini et al. 2011). Long shots do not convey as much of an emotional response. Therefore, we can speculate that characters’ emotional responses will be portrayed in a higher proportion of closer shots.

The intercultural, feminist and psychological approaches frame the present investigation. These well-established disciplines offer a broad understanding of film and TV series that is already quite sophisticated and certainly a pertinent approach. We base our cultural shot scale and emotion display comparison of the shows on this framework. On the one hand, each level provides a lens through which we read our empirical data and reveal a different aspect of the show. On the other hand, the levels are an arena where we confirm or challenge the theories mentioned above with our empirical data. Our layered reading of the data in the Reading the Data section follows the same sequential order as the one proposed in the Framing the Research section above.

## 4 Method

### 4.1 Digital approach

Our research is at the intersection of digital humanities, film and TV studies, intercultural communication, multimodality, cultural analytics and artificial intelligence. Because film and TV series are, in essence, multimodal, we take a comprehensive approach with equal emphasis on the multiple modes to frame the cinematic text. We are driven by *Datafication*, the concept of turning real-life occurrences into

computational data of moving images to uncover trends. We follow the footsteps of quantitatively motivated approaches, such as Barry Salt's *statistical style analysis*, Larkey et al.'s digital comparative approach, Lev Manovich's Cultural Analytics, and Geena Davis' Inclusion Quotient; we propose a corpus-based model supported by digital tools. In the context of this comparative cultural study on *Law & Order: Criminal Intent* and *Paris Enquêtes Criminelles*, we focus on cultural and gender representation, emotion display and shot scale distribution.

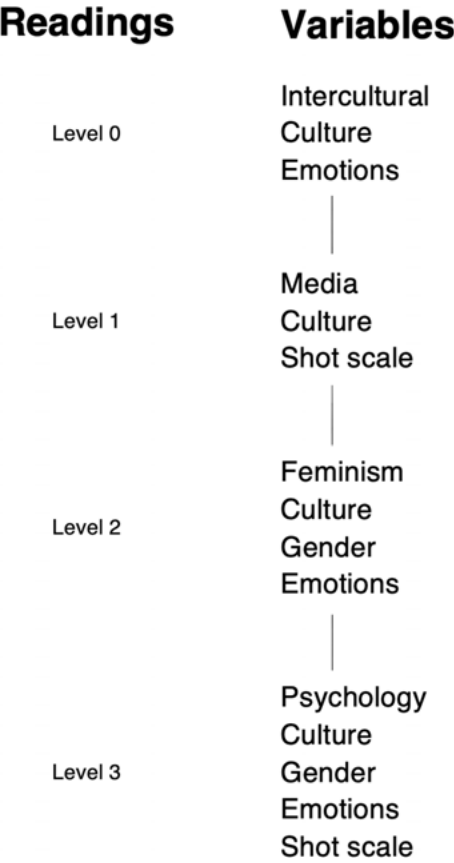
Inspired by software such as *Videana*, *Atlas.ti*, the *Multimodal Analysis Software*, and other digital tools, we have developed *The Möbius Trip*, a multimodal analysis engine based on machine learning techniques. *The Möbius Trip* compiles the software's attributes in one and operates automatically, removing time constraints and human errors. The toolkit transforms visual characteristics into quantifiable elements to identify broad tendencies and non-obvious patterns in TV series (Digeon and Amin 2020). It is equipped with automated facial recognition processing that can objectively identify, label, and quantify the gender of the characters on screen, the emotion they display (Digeon and Amin 2020), as well as the shot scale in which characters are portrayed. The Möbius Trip frames audiovisual content, manages extensive volumes of metadata, makes complex predictions and generates visuals. It zooms into the data by crossing a wide range of elements with each other at a large scale to obtain comprehensive, precise and complex recurring televisual patterns.

## 4.2 Analytical procedure

We propose a *distant reading* approach to the episodes to find and compare otherwise invisible patterns or representations. The term "distant reading" was coined by digital humanities scholar Franco Moretti in the 2000s to refer to a digital-driven quantitative approach being applied to a text and turning it into graphs, maps and trees. It uncovers the governing system that generates trends and patterns. We follow the precepts of digital humanities scholar Craig Saper's zooming-in approach to the smart set. Saper breaks the boundaries between close and distant reading and proposes a dynamic, layered reading of the data (Saper 2021: 115). Saper states, "Counter to Moretti, and the critics of digital humanities alike, there is no close reading or distant reading: one can zoom in or zoom out on all data in the same readings" (Saper 2015: 206).

Because this chapter is a pilot study, our distant reading approach is limited to four levels of reading. For each level of reading, we combine variables (e.g., culture, emotions, genders and shot scales) and address them through the lens of culture, media, feminism and psychology (Figure 3).

- Level 0: Intercultural Reading compares the emotion display between both versions of the show from a cultural standpoint. We analyze this reading through intercultural models.
- Level 1: Media Reading compares the use of scale shots between both versions of the show. The analysis is rooted in media theories.
- Level 2: Feminist Reading, we compare male and female characters' representation through display of emotions between both versions of the show. We add the shot scale variable for a camera gaze reading of the text.
- Level 3: Psychological Reading compares the display of emotions of male and female characters' using shot scale between both versions of the show. We analyze the data via psychological approaches.



**Figure 3:** Digeon and Amin’s proposed layering approach.

### 4.3 Measuring emotions

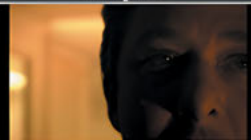



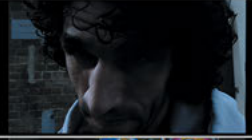

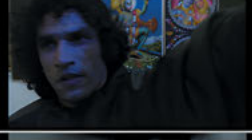

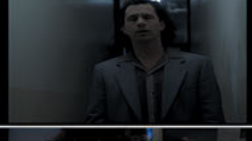












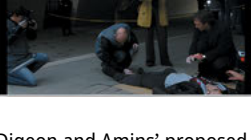

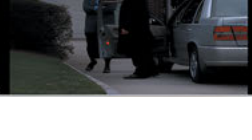
Kate Crawford explains that artificial intelligence is misreading human emotions. Kanade et al. point out several issues hindering the emotion recognition process, such as “the level of description, transitions among expression, eliciting conditions, reliability and validity of training and test data, individual differences in subjects, head orientation and scene complexity, image characteristics, and relation to non-verbal behavior” (2000: 1). Acknowledging the reliability issue and potential bias, we rely on FER Python package to frame emotions and improve the accuracy of the data by training the toolkit multiple times. We estimate our emotion recognition to be 70% accurate.

### 4.4 Reframing shot scale framework

The ambiguity of shot scale terms and conventions addressed earlier in this chapter impacts the film industry but also affects researchers. A lack of a formal framework hampers the discussion and may lead to potential misunderstandings, inaccurate findings and inexact interpretations. The advent of new media and large-scale computational approaches to film analysis urges us to reframe shot scales with objective and consistent standards. Hence, we introduce an AI-based shot scale framework with strict conventions (Figure 4).

Our attempt to define shot scale conventions with stricter edges is fueled by the need for a coherent and reliable ratio to proceed with our large-scale data analysis. A detailed framework is vital to replicate a similar study with other shows using this approach. Furthermore, a common structure with shared conventions is needed to facilitate dialog in the film and TV series community between film scholars and film industry professionals. Our proposed approach is an attempt to fill this gap by utilizing an objective convention to reframe the shot scale framework. The software extrapolates the relative distance of the character’s body within the space. It reconciles the *ratio-to-frame* and *imagined distance* approaches and determines strict edges based on learned patterns.



SCALE	Sample A	Sample B	Sample C
ECU			
BCU			
CU			
MCU			
MS			
CS			
MLS			
LS			
VLS			

**Figure 4:** Digeon and Amins’ proposed shot scale framework.

## 4.5 Sampling

To conduct this case study, we showcase *Law & Order: Criminal Intent* and its adapted French version *Paris Enquêtes Criminelles*. *Law & Order: Criminal Intent* ran from 2001 to 2011 for a total of 196 episodes in 10 seasons. In turn, the French ran from 2007 to 2009 for only three seasons and 20 episodes. The corpus for this quantitative study consists of 44,602 frames. It includes eight episodes of *Paris Enquêtes Criminelles*, released in 2007, and the eight corresponding episodes of *Law & Order: Criminal Intent*, released in 2001 (Table 1).

**Table 1:** List of Episodes sample: *Law & Order: Criminal Intent* and *Paris Enquêtes Criminelles*.

Paris Enquêtes Criminelles Episodes	Law & Order Episodes
1. S01E01 Fantôme	1. S01E16 Phantom
2. S01E02 Requiem Pour un Assassin	2. S01E04 The Faithful
3. S01E03 Le Serment	3. S01E01 One
4. S01E04 Addiction	4. S01E03 Smothered
5. S01E5 Scalpel	5. S01E09 The Good Doctor
6. S01E6 Ange de la Mort	6. S01E07 Poison
7. S01E7 Un Homme de Trop	7. S01E06 The Extra Man
8. S01E8 Le Justicier de l'Ombre	8. S01E11 The Third Horseman

Source: own processing, 2021.

## 5 Reading the data

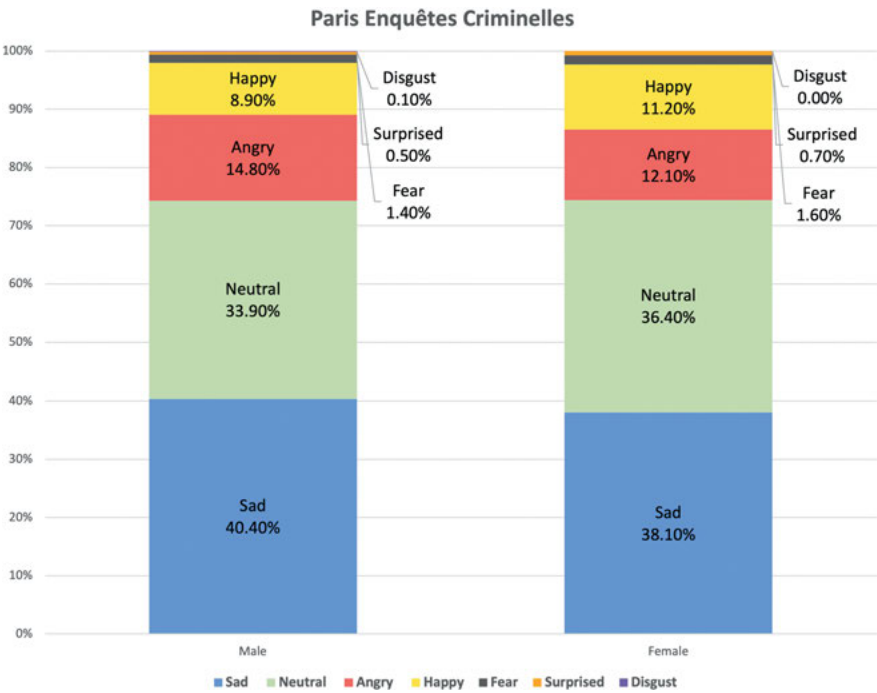
### 5.1 Level 0: Intercultural reading

At this level, we perform a cultural comparison of emotional display in male and female characters in *Law & Order* and *Paris Enquêtes Criminelles*. The data shows that emotion display follows a similar overall pattern (Figure 5). Characters predominantly displayed facial expressions that convey sadness (45%, 40%), followed by neutrality, anger, happiness, fear, surprise and disgust (Figure 5). Table 2 mirrors the graph in Figure 5; it highlights the fact that characters display a wider range of emotions in *Paris Enquêtes Criminelles* than in *Law & Order: Criminal Intent*. The French appear to display more neutral features compared to the Americans (+2.7%), but they display more anger (+0.40%), more fear (+0.7%), more happiness (+0.8%), more disgust (+10%), and more surprise (+0.10%). In turn, the American characters appear much sadder (+5.20%).

**Table 2:** Emotions display comparison between *Law & Order* and *Paris Enquêtes Criminelles*.

	Emotions	
	American	French
Sad	45,30%	40,10%
Neutral	31,30%	34,40%
Angry	13,80%	14,20%
Happy	8,50%	9,30%
Fear	0,70%	1,40%
Surprised	0,40%	0,50%
Disgust	0,00%	0,10%
TOTAL	100,00%	100,00%

Source: Own processing, 2022.



**Figure 5:** Emotions display comparison Between *Law & Order* and *Paris Enquêtes Criminelles*.

Source: Own processing, 2022.

The data signal that both the French and American cultures display the same range of emotions, broadly speaking. They both follow the same trend of emotion display conventions in responding to crime, grief and judicial procedure. However, the data demonstrates that the French male and female characters are more emotionally expressive and show a wider range of emotions than their American counterparts. This finding is congruent with Hall's context cultures model, positing that high-context culture members rely on non-verbal communication and facial expressions more than low-context cultures. France is considered a high-context culture; accordingly, the French characters show a wider range of emotions than the American ones. The American characters, in turn, display substantially more sadness, which seems to emphasize the tragic nature of the show.

## 5.2 Level 1: Media reading

Level 1: Media Reading compares how shot scales play out in *Law & Order: Criminal Intent* and *Paris Enquêtes Criminelles*. Gender and emotion display elements in this part are disregarded to focus solely on shot scale and culture. We aim to find patterns to support and challenge the claims from the media theories by looking at shot scale distribution through the lens of technology, genre and cultural tradition.

The data show that both American and French versions of the show follow the same overall shot scale distribution trend: MCU, followed by MS, CU, MLS, LS, CS, and BCU (Figure 6). Table 3 sheds light on the differences; The French use more MCU (+3.8%), CU (+ 1.4%), CS (+0.40%), LS (+2.20), and BCU (+0.40). The Americans rely more on MS (+6.7%) and MLS (1.6%).

The fact that both versions of the show follow the same overall shot scale distribution pattern is significant. The data is congruent with the idea that TV series follow a similar trend based on Hollywood conventions. We find that Americans and French rely mostly on MCU and MS to portray characters in a crime show. When combined, MCU and MS account for 80% of the shot scale distribution in the US version and 77% in the French version. Our findings do not align with Barry Salt's claims that close-ups dominate crime shows. In fact, close-ups represent a small portion of our data set. We suspect, however, that such a drastic difference might be related to the discrepancies in shot scale conventions and lack of common reference. Such a misunderstanding calls for a standard framework like the one we propose here.

Zooming in on the apparent similarity of the shot scale distribution trend, we observe that the French use a wider variety of shots (more MCU, CU, CS, LS, BCU). The French version, more recent than its American counterpart, exemplifies the impact of technological progress on aesthetic choices. This finding concurs with Bordwell's idea that smaller cameras enable more flexibility for directors. Likewise, the

cinematic look of the 16:9 aspect ratio in *Paris Enquêtes Criminelles* might impact shot scale preferences, encouraging wider shots. Taking advantage of the ratio, the French use more LS (+2.20%) to highlight the Parisian background. They also display



**Figure 6:** Shot scale distribution comparison between *Law & Order* and *Paris Enquêtes Criminelles*. Source: Own processing, 2022.

**Table 3:** Shot scale distribution comparison between *Law & Order* and *Paris Enquêtes Criminelles*.

	Shot Scales	
	American	French
MCU	53,50%	57,30%
MS	36,80%	30,10%
CU	4,40%	5,80%
MLS	3,70%	2,20%
CS	0,90%	1,30%
LS	0,60%	2,80%
BCU	0,10%	0,50%
TOTAL	100,00%	100,00%

Source: Own processing, 2022.

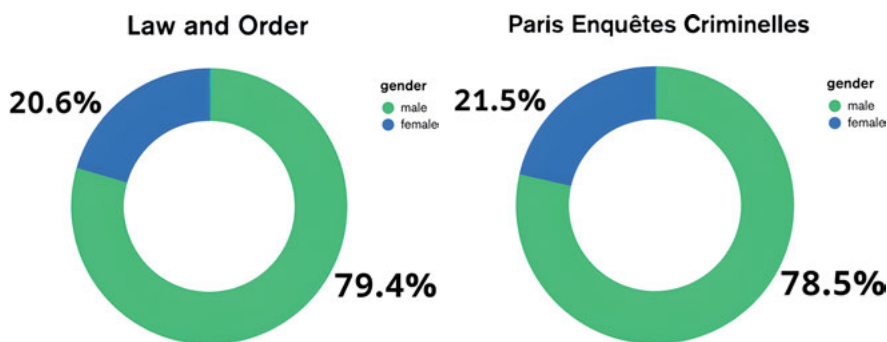
more MCU (+3.80%) and more CU (+1.40%) than the American version (Table 3). This trend signals that the French explore closer shots, supporting Bazin's claim that the close-up could survive and even thrive with a wider aspect ratio.

Finally, stylistic choices based on film techniques might explain the higher use of tighter shots (e.g., MCU, CU, BCU) in the French version. Digeon and Amin already suggested that the French version is a hybrid version of the original show based on pace, music, and color. They observed that the pace of the French version was almost twice as fast as the American. Hence, the French show, using more MCUs and CUs, corroborates with Bordwell and Cutting, who equates shorter lengths with shorter-scaled shots (Bordwell 2006; 137; Cutting and Candan 2015: 56).

### 5.3 Level 2: Feminist reading

At this level of reading, we look at the representation of women on screen based on screen time, display of emotion and the camera gaze. First, we contextualize this section by calculating the screen time per gender per show to put our data in perspective. We find that male characters make up 79.4% of the gender displayed on screen, while female characters represent 20.6% in *Law & Order: Criminal Intent* (Figure 7). In *Paris Enquêtes Criminelles*, male characters make up 78.5% of the gender displayed on screen, while female characters only represent 21.5%.

Our findings reveal that female characters are overwhelmingly underrepresented in both the French and American versions of the show. This trend complies with Geena Davis Institute and the CSA's claim that men dominate screen time in film and TV series. However, the drastic gap between genders is wider than in more recent shows analyzed by the Institute. Such a contrast might be



**Figure 7:** Gender screentime in *Law & Order* and *Paris Enquêtes Criminelles*.  
Source: Own processing, 2022.

symptomatic of shows from the late 1990s and early 2000s, where gender difference on screen was not addressed as it is today.

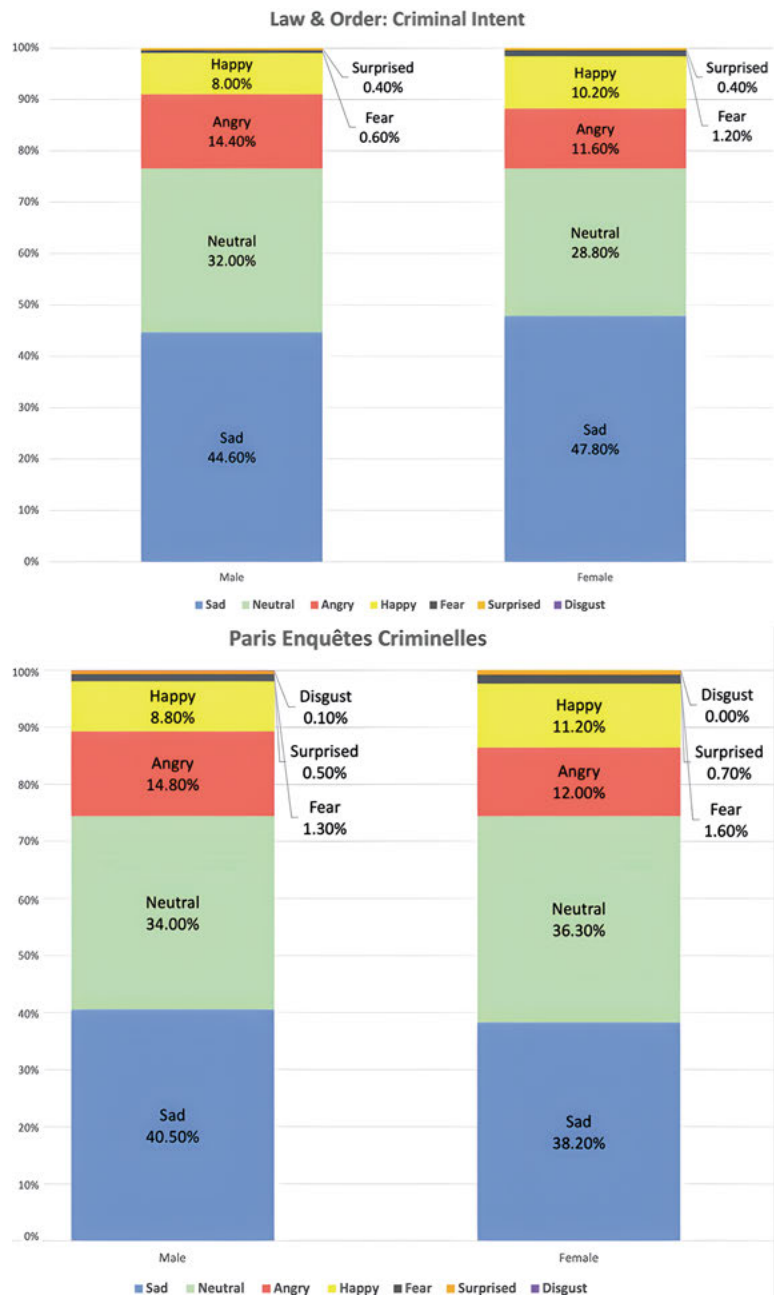
Therefore, we analyze the display of emotions between male and female characters as represented in both cultures. The data (Table 4) show that American male characters display more anger than female characters (+2.8%). In contrast, American female characters show more sadness (+1.2%), more happiness (+2.2%) and more fear (+0.6%). The French male characters display more sadness (+2.30%), more anger (+2.8%) and more disgust (+0.10%). In turn, French female characters appear more neutral (+2.30), happier (+2.4), more scared (+0.30%) and more surprised (+0.2%).

Overall, the data show that both male and female characters in both versions of the show display a similar hierarchy of emotion display. Sadness is the dominant emotion for all the characters, followed by neutral, anger, happy, fear, surprised and disgust (Figure 8). This trend confirms emotions as a universal value.

Nonetheless, we observe variations in the display of emotions at the gender level in both the US and French versions. Female characters show a wider range of emotions than their male counterparts in both cultures. Our data confirms Doane's claim that the display of emotion is also contingent on gender and that women show a wider range of emotions. While this is exact, the gap between male and female characters is narrower in the French context. Our findings suggest that the gap in emotion display between gender is culturally specific. Further investigation is needed to quantitatively measure the display of emotion gender gaps across cultures and establish the validity of such a statement.

The underlying pattern also suggests that male characters in both versions of the shows display more anger than female characters. The data concurs with Patulny et al.'s statement that "women tend to either suppress their anger or express it by either crying, pouting or being unhappy, despite the fact that both men and women experience the *feeling* of anger with the same frequency" (Patulny et al. 2019: 139). Indeed, the wider range of female characters' displays of emotions supports Patulny et al.'s claim. Our findings also match Geena Davis' claim that men are more violent in a show and women are more fearful. We can speculate that male characters' display of anger combined with female characters' display of fear is representative of a crime show, in which men are most likely to be the perpetrator of the crime, displaying violent behavior, and that female characters tend to be portrayed as victims (Digeon and Amin 2021).

Pribram's close reading of films and TV series, relying on scenes and examples, provides us with in-depth analysis. She appropriately describes the most common emotions in crime shows, namely anger and sadness (elicited by sympathy). Yet, focusing on the binary opposition of primitive emotions implies that other emotions are overlooked. Our multimodal empirical approach takes into



**Figure 8:** Emotion display comparison per gender between *Law & Order* and *Paris Enquêtes Criminelles*.  
Source: Own processing.



**Table 4:** Emotions display comparison per gender between *Law & Order* and *Paris Enquêtes Criminelles*.

	Law & Order		Paris Enquêtes Criminelles	
	Male	Female	Male	Female
<b>Sad</b>	44,60%	47,80%	40,50%	38,20%
<b>Neutral</b>	32,00%	28,80%	34,00%	36,30%
<b>Angry</b>	14,40%	11,60%	14,80%	12,00%
<b>Happy</b>	8,00%	10,20%	8,80%	11,20%
<b>Fear</b>	0,60%	1,20%	1,30%	1,60%
<b>Surprised</b>	0,40%	0,40%	0,50%	0,70%
<b>Disgust</b>	0,00%	0,00%	0,10%	0,00%
<b>TOTAL</b>	100,00%	100,00%	100,00%	100,00%

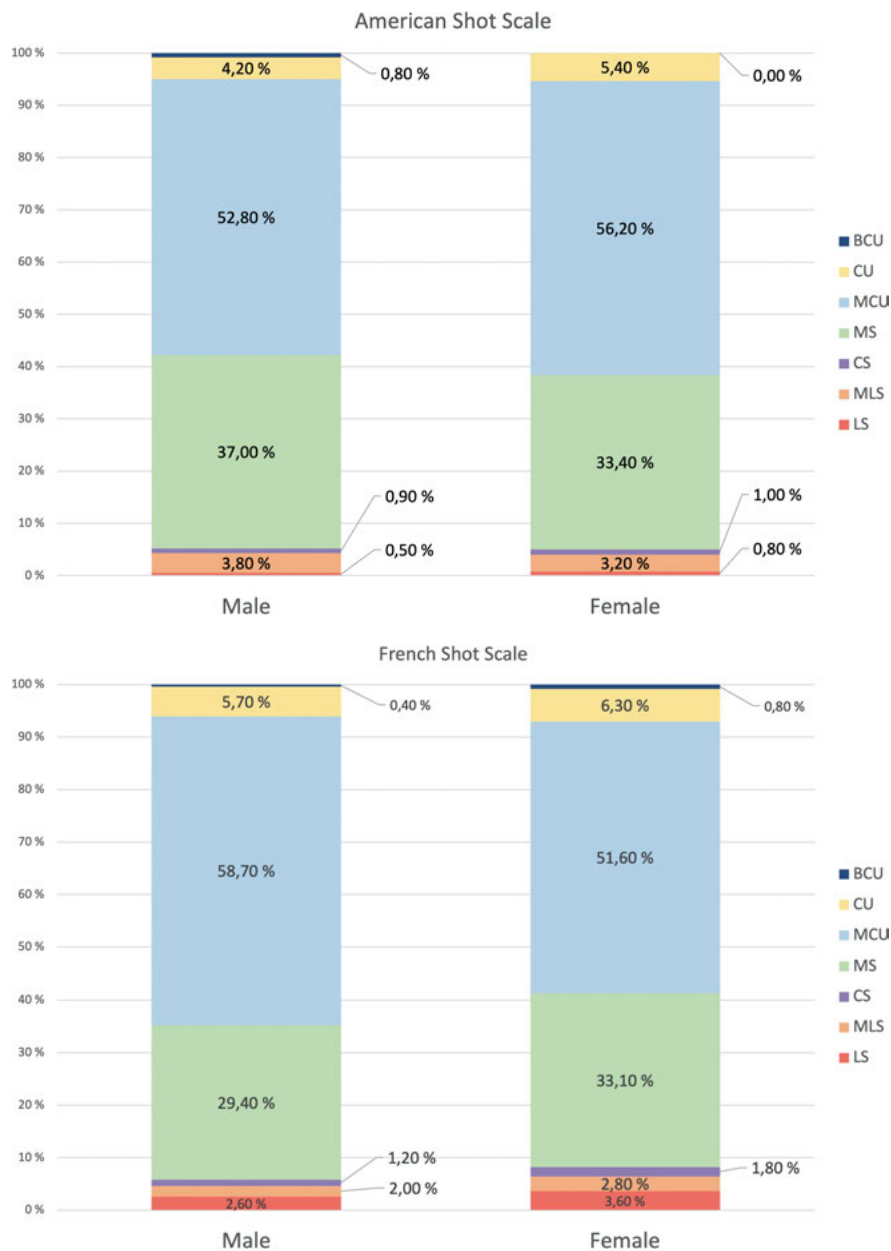
Source: Own Processing, 2022.

consideration the entire range of emotion display because they all contribute to a character's representation. Quantitative data allows for distant reading by revealing trends and patterns to support objectively claims such as Pribrams'. Our findings underscore the importance of a close/distant reading approach to TV series.

We have established that the French use a wider variety of shots than the Americans in Level 1 Reading. In the last step of Level 2 Reading, we zoom into the data and analyze the shot scale used by gender. This level informs us of the impact of shot scales on the representation of male and female characters in both shows.

The data show an apparent similarity in the shot scale distribution trend. Figure 9 shows that all the characters, both gender and cultures included, are mostly depicted with MCU for more than half of the time, followed by MS for about a third of the overall shot scale framing. CU has a limited role in depicting characters as it only represents 4–6% of the general depiction of the characters. BCU, CS, MLS, and LS represent a fraction of this overall depiction. Table 5 highlights the diversity of shot scale to depict French female characters.

The results do not signal any significant camera gaze biases toward female characters. No intense focus on women's depiction with a scrutinizing camera that sexualizes women has been observed. Consequently, no clear trend supporting Laura Mulvey's male gaze is in this show.



**Figure 9:** Shot scale distribution comparison per gender between *Law & Order* and *Paris Enquêtes Criminelles*.  
Source: Own processing, 2022.

**Table 5:** Shot scale distribution comparison per gender between *Law & Order* and *Paris Enquêtes Criminelles*.

	Law & Order		Paris Enquêtes Criminelles	
	Male	Female	Male	Female
<b>MCU</b>	52,80%	56,20%	58,70%	51,60%
<b>MS</b>	37,00%	33,40%	29,40%	33,10%
<b>CU</b>	4,20%	5,40%	5,70%	6,30%
<b>MLS</b>	3,80%	3,20%	2,00%	2,80%
<b>CS</b>	0,90%	1,00%	1,20%	1,80%
<b>LS</b>	0,50%	0,80%	2,60%	3,60%
<b>BCU</b>	0,80%	0,00%	0,40%	0,80%
<b>TOTAL</b>	100,00%	100,00%	100,00%	100,00%

Source: Own processing, 2022.

## 5.4 Level 3: Psychological reading

This level of reading is concerned with the underlying psychological processes that govern a director's aesthetic choices and an audience's emotional response to a character's display of emotions in correlation to shot scale distribution. We analyze the correlation of shot scale distribution with a display of emotions through cognitive film theory to shed light on the directors' unconscious decisions and the audience's affect. Earlier in this study, we have established that both versions of the show rely on a majority of MCUs followed by MS. We have also demonstrated that French characters display a wider range of emotions and that they are depicted with a wider variety of shot scales. This level of reading builds on these established results and offers a more detailed view of a character's representation in the French and American context.

The data reveals that both shows follow a similar shot scale distribution pattern when portraying emotions (Figure 10). The trend similarity implies there is a tacit rule of shot scale distribution to depict emotions that transcends a director's conscious decisions. Such findings support Benini et al.'s idea that "statistical distribution of different shot scales in a film might be an important marker of a film's stylistic and emotional character" (Benini et al. 2016: 16501). Both the French and American directors of the series use the same conventions to build tension and suspense. The French director did not fundamentally change the shot scales conventions, tacitly implying that the French audience is familiar with this global pattern of representation. They are already cognizant of the genre and the film techniques.



**Figure 10:** Display of emotions combined with shot scale distribution comparison between *Law & Order* and *Paris Enquêtes Criminelles*.  
Source: Own processing, 2022.

We thereupon zoom into the data to achieve a more granular view by adding male and female characters' emotion depictions combined with shot scales within and across cultures. Looking at the patterns of representations from a ToM perspective allows us to understand audience emotional engagement techniques. Earlier in this study, we established that female characters in France and the US display a broader range of emotions. We also demonstrated that they are depicted with a wider variety of shot scales. Building on this new knowledge, we seek a pattern of emotion display combined with a specific shot to achieve ToM. In lieu of describing all the data, we focus our attention on variations and seek outliers that might be significant.

The results follow the patterns previously described, where all the characters are depicted with a majority of MCU and MS (Figure 11, Table 6). We find that MCU is the most prevalent shot scale to feature all the emotions. When featuring fear, this ratio increases for male and female characters in both versions of the show (78.10% and 74.50%). This finding partially aligns with ToM, which states that a closer shot increases emotional response and more engagement from the audience. Though not as intense as a CU, an MCU shows a character from chest level up and still spotlights facial expressions. Hence, focusing on the characters' fear with an MCU certainly contributes to raising the psychological tension of the narrative and consequently transferring it to the audience. Along with fear, the display of surprise stands out in how it is featured. Surprise is also portrayed with a high amount of MCU in male and female characters in both versions of the show. Surprise, often a fleeting emotion, requires a close depiction of the face, focusing on displaying the emotion to the audience. The French version contains a greater quantity of CU and BCU proportionally to any other emotion. We notice that American male and female characters display anger with a greater variety of shot scales than other emotions. Unexpectedly, anger is framed with MS, MLS, CS, and LS instead of MCU, CU, or BCU. Such information signals that anger is expressed with body language for both genders over facial expressions. In fact, CU is the least-used scale to show the emotion of American males (2.5%). This finding suggests that an American audience might feel uncomfortable with a close shot of angry faces.

The data does not show any significant attempt to feature sadness with tighter shots; it goes against Rooney and Bálint's principle that a sad close-up is most likely to trigger a stronger response than the neutral close-up (Rooney and Bálint 2018). It turns out that the French female character's neutral emotion is accentuated with a CU. In fact, the CU, which raises a disproportionate amount of attention from the multiple theories we review, plays a limited role in the representations of characters and the depiction of their emotion.



**Figure 11:** Emotion display combined with shot scale distribution comparison per gender between *Law & Order* and *Paris Enquêtes Criminelles*.  
Source: Own processing, 2022.

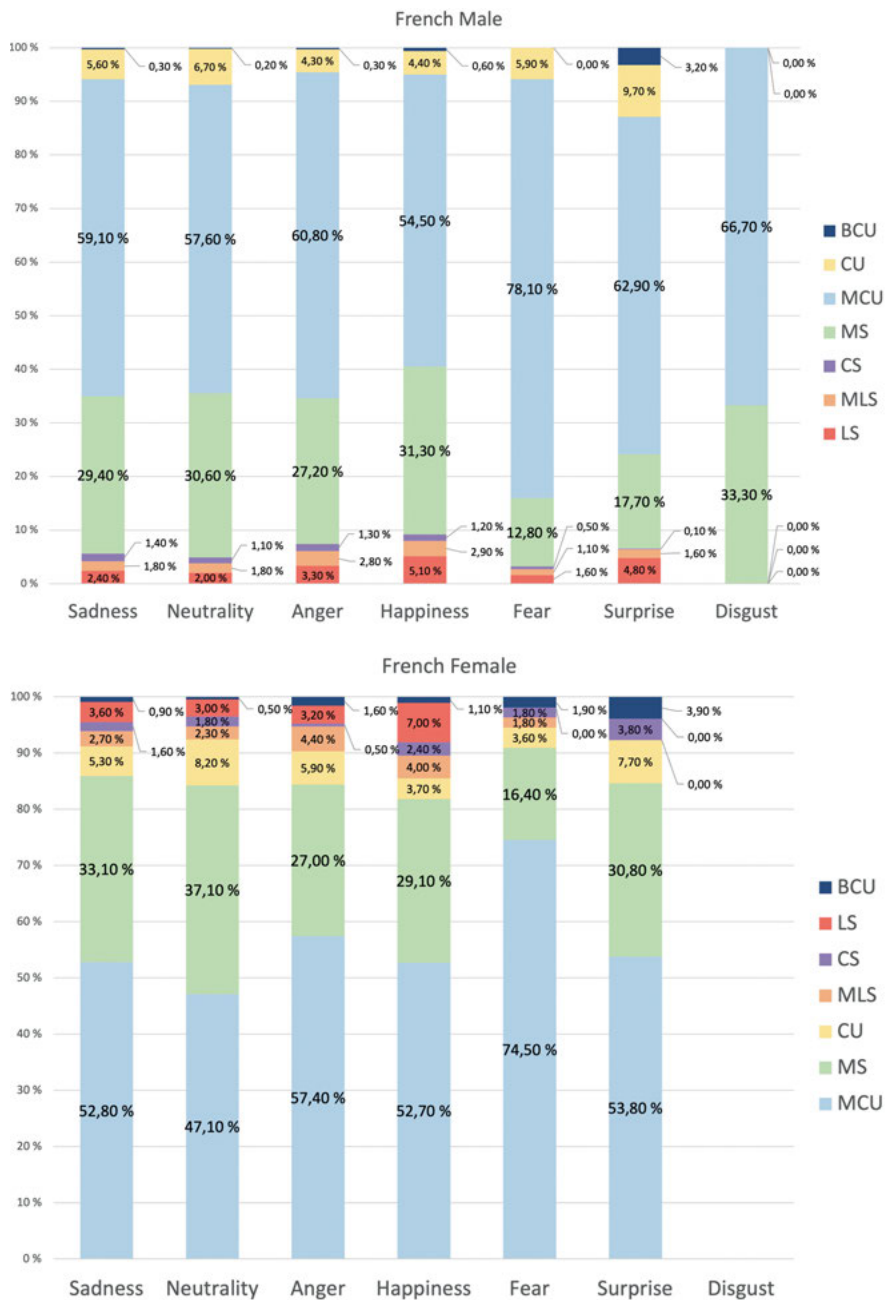


Figure 11 (continued)





Table 6 (continued)

	French Female						
	Sadness	Neutrality	Anger	Happiness	Fear	Surprise	Disgust
MCU	52,80%	47,10%	57,40%	52,70%	74,50%	53,80%	0,00%
MS	33,10%	37,10%	27,00%	29,10%	16,40%	30,80%	0,00%
CU	5,30%	8,20%	5,90%	3,70%	3,60%	7,70%	0,00%
MLS	2,70%	2,30%	4,40%	4,00%	1,80%	0,00%	0,00%
CS	1,60%	1,80%	0,50%	2,40%	1,80%	3,80%	0,00%
LS	3,60%	3,00%	3,20%	7,00%	0,00%	0,00%	0,00%
BCU	0,90%	0,50%	1,60%	1,10%	1,90%	3,90%	0,00%
TOTAL	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	0,00%

Source: Own processing, 2022.

## 6 Conclusion

This pilot study introduces an empirical cross-cultural comparative analysis of transnational TV series adaptations. Showcasing 16 episodes of *Law & Order: Criminal Intent* and its adapted French version *Paris Enquêtes Criminelles*, we quantify characters' screen time, display of emotion and shot scale distribution. Taking a deep learning approach to the data, we cross these elements to achieve greater granularity. We zoom in and propose a layered, four-level reading of the data through the lens of intercultural models, media theories and feminist and psychological approaches. We have established a shot-scale model based on AI technology to conduct our data gathering. Our approach proved effective in automatically labeling, classifying, measuring and comparing a large quantity of visual data. This study provides insights into the ethics of televisual representations of male and female characters on screen across cultures and the process through which cultural proximity is achieved.

Our layered reading highlights different elements and enables us to confirm or challenge the theories we rely on. Level 0 Intercultural Reading reveals that the French characters display a wider variety of emotions than their American counterparts. It corroborates Hall's contextualizing model positing that high-context cultures, such as France, display more emotions than low-context cultures when interacting. Subsequently, in Level 1 Media Reading, we demonstrate that both the French and the US shows follow a similar shot scale distribution pattern, featuring mostly MCU and MS. This arrangement suggests the genre conventions are homogenous across the two cultures. Despite the similarities, we observe that the French version features a wider variety of shot scales than the American. Such

variations can be explained by the technological progress of screens and cameras. Lastly, the French use more CU, confirming the correlation of a faster pace with closer shots and leading to a hybrid genre. Next, Level 2 Feminist Reading reveals the drastic inequality of female characters' screen time in both shows. The findings confirm that the display of emotions is contingent on culture and gender. Part of a high-context culture, the French female characters display a broader range of emotions than American female characters. Interestingly, men in both versions display more anger than female characters; in turn, female characters display more fear than their male counterparts. These findings align with the previous research led by Digeon and Amin. The study shows no trend depicting the sexualization of women based on shot scale, challenging Laura Mulvey's male gaze. Lastly, Level 3 indicates an underlying psychological process that rules the shot scale distributions. This trend can result from the directors' unconscious application of genre conventions and audience expectations. This reading highlights minor differences in representation between genders.

Our methodology and toolkit, the Möbius Trip, contributes to digital humanities research methods. The comparative study could be extended to genres, periods, directors, themes and across cultures. It offers excellent potential for further application in different fields. It has the potential to contribute to the study of TV series, impact feminist film theories, and contribute to psychological research. To do so, we need an exhaustive corpus of TV series and more data to truly achieve Large-Scale Granularity.

## References

- Arijon, D. *Grammar of the film language*. Silman-James Press, 2015.
- Albera, François, ed. "Les Formalistes russes et le cinéma. Poétique du Film." Paris: Nathan, 1996.
- Alvarado, Manuel, Milly Buonanno, Herman Gray, and Toby Miller, eds. *The Sage handbook of television studies*. Thousand Oaks: Sage, 2014.
- Bakhtin, Mikhail Mikhailovich. *Speech genres and other late essays*. Austin: University of Texas Press, 2010.
- Bazin, André, and Hugh Gray. *What is Cinéma?: Essays Selected and Translated by Hugh Gray*. Berkeley: University of California Press, 1967.
- Bálint, K. E., Blessing, J. N., & Rooney, B. "Shot scale matters: The effect of close-up frequency on mental state attribution in film viewers." *Poetics*, 83, 101480 (2020). <https://doi.org/10.1016/j.poetic.2020.101480>.
- Benini, Sergio, Michele Svanera, Nicola Adami, Riccardo Leonardi, and András Bálint Kovács. "Shot scale distribution in art films." *Multimedia Tools and Applications* 75.23 (2016): 16499–16527.
- Bordun, Troy. *Genre Trouble and Extreme Cinema: Film Theory at the Fringes of Contemporary Art Cinema*. London: Palgrave Macmillan, 2017.
- Bordwell, David. *Narration in the Fiction Film*. Madison, WI: University of Wisconsin Press, 1985.

- Bordwell, David. "Cognition and Comprehension: Viewing and forgetting in Mildred Pierce." *Journal of Dramatic Theory and Criticism* VI. 2 (1992): 183–198. Accessed July 31, 2023. <https://journals.ku.edu/jdtc/article/view/1844>.
- Bordwell, David. "The way Hollywood tells it." In *The Way Hollywood Tells It*. Berkeley: University of California Press, 2006.
- Bordwell, David, Janet Staiger, and Kristin Thompson. *The classical Hollywood cinema: Film style & mode of production to 1960*. New York: Columbia University Press, 1985.
- Bordwell, David, Kristin Thompson, and Jeff Smith. *Film Art: An Introduction*. New York, NY: McGraw-Hill Education, 2017.
- Burch, Elizabeth. "Media literacy, cultural proximity, and TV aesthetics: Why Indian soap operas work in Nepal and the Hindu diaspora." *Media, Culture & Society* 24.4 (2002): 571–579.
- Canini, Luca, Sergio Benini, and Riccardo Leonardi. "Affective analysis on patterns of shot types in movies." In *2011 7th International Symposium on Image and Signal Processing and Analysis (ISPA)*. IEEE, 2011. Accessed July 31, 2023. [https://iris.unibs.it/bitstream/11379/103511/1/CBL\\_ISPA\\_2011.pdf](https://iris.unibs.it/bitstream/11379/103511/1/CBL_ISPA_2011.pdf).
- Cardwell, Sarah. "A sense of proportion: Aspect ratio and the framing of television space." *Critical Studies in Television* 10.3 (2015): 83–100.
- Chesebro, James W., David T. McMahan, Preston Russett, Eric J. Schumacher, and Junliang Wu. *The masculine-feminine construct in cross-cultural research*. New York & London: Routledge, 2013.
- Crawford, Kate. "Artificial intelligence is misreading human emotion." *The Atlantic*. April 27, 2021. Accessed June 29, 2023. <https://www.theatlantic.com/technology/archive/2021/04/artificial-intelligence-misreading-human-emotion/618696/>.
- Cutting, James E. "Event segmentation and seven types of narrative discontinuity in popular movies." *Acta psychologica* 149 (2014): 69–77.
- Cutting, James E. "The framing of characters in popular movies." *Art & Perception* 3.2 (2015): 191–212.
- Cutting, James E. "Three Filmmaking Practices That Guide Our Attention to Popular Cinema." *Art & Perception* 1 (2021): 1–26.
- Cutting, James E., and Ayse Candan. "Shot durations, shot classes, and the increased pace of popular movies." *Projections* 9.2 (2015): 40–62.
- Cutting, James E., Kaitlin L. Brunick, Jordan E. DeLong, Catalina Iricinschi, and Ayse Candan. "Quicker, faster, darker: Changes in Hollywood film over 75 years." *i-Perception* 2.6 (2011): 569–576.
- D'Angelo, Paul., and Jim A. Kuypers. "Introduction: Doing news framing analysis." In *Doing news framing analysis*, 17–30. New York & London: Routledge, 2010.
- Deppman, H.-C. *Close-ups and long shots in modern Chinese cinemas*. Honolulu: University of Hawai'i Press, 2021.
- Digeon, L., Amin A. "Transnational TV Series Adaptations: What AI can tell us about Gender inequality in France and the US," *Media Literacy and Academic Research* 4.1 (2021): 6–23.
- Digeon, Landry, and Anjal Amin. "IEEE 2020 International Conference on Industrial Engineering and Engineering Management, Institute of Electrical and Electronics Engineers." In *TV Series Adaptations: An AI Toolkit for Success*. Singapore, n.d.
- Digeon, Landry, and Anjal Amin. "IEEE 2021 International Conference on Industrial Engineering and Engineering Management, Institute of Electrical and Electronics Engineers." In *From American Crime Show to Série Policière Française, An AI Toolkit for Genre Prediction in Transnational TV Series Adaptation*, n.d.
- Doane, Mary Ann. "How Big Should It Be? Scale, Screens and the 'End(s)' of Cinema" | May 3, 2018. Accessed June 29, 2023. <https://www.youtube.com/watch?v=MD2vaBOT5s0>.
- Doane, Mary Ann. *Bigger Than Life: The Close-Up and Scale in the Cinema*. Durham, NC: Duke University Press, 2021.

- Edgar-Hunt, R., Marland, J., and Rawle, S. *The language of film*. London: Fairchild Books, 2015.
- Frosh, Paul. "The face of television." *The ANNALS of the American Academy of Political and Social Science* 625.1 (2009): 87–102.
- Goffman, Erving. *Frame Analysis: An Essay on Organization of Experience*. Northeastern University Press, 1986.
- Grodal, Torben. *Moving pictures: A new theory of film genres, feelings, and cognition*. Oxford: Oxford University Press, 1999.
- Hall, Edward Twitchell. *Beyond culture*. New York: Anchor, 1989.
- Kanade, Takeo, Jeffrey F. Cohn, and Yingli Tian. "Comprehensive database for facial expression analysis." *Proceedings fourth IEEE international conference on automatic face and gesture recognition (cat. No. PR00580)*. IEEE, 2000.
- Kovács, András Bálint. "Shot scale distribution: an authorial fingerprint or a cognitive pattern?" *Projections* 8.2 (2014): 50–70.
- Kuhn, A., & Westwell, G. *A dictionary of film studies*. Oxford: Oxford University Press, 2012.
- Larkey, Edward, Landry Digeon, and Ibrahim Er. "Measuring transnationalism: Comparing TV formats using digital tools." *VIEW Journal of European Television History and Culture* 5.9 (2016): 72–92.
- Manovich, L. "Visualizing Vertov." *Russian Journal of Communication*. 5.1 (2013), 44–55.
- Matthau, Charles. "How Tech Has Shaped Film Making: The Film Vs. Digital Debate Is Put To Rest." *Wired*. 2015. Accessed June 29, 2023. <https://www.wired.com/insights/2015/01/how-tech-shaped-film-making/>.
- Mittell, Jason. *Genre and Television: From cop shows to cartoons in American culture*. New York & London: Routledge, 2004.
- Mitry, Jean. *The Aesthetics and Psychology of the Cinema*. Translated by Christopher King. Bloomington: Indiana Univ. Press, 1997.
- Monaco, James, and David Lindroth. *How to read a film: the world of movies, media, and multimedia: language, history, theory*. Oxford University Press, USA, 2000.
- Mulvey, Laura. *Visual and Other Pleasures*. Bloomington: Indiana UP, 1989.
- Mulvey, Laura. "Visual pleasure and narrative cinema." In *Visual and other pleasures*, 14–26. London: Palgrave Macmillan, 1989.
- Nannicelli, Ted, and Paul Taberham, eds. *Cognitive media theory*. Routledge, 2014.
- Oliver, K. "The male gaze is more relevant and more dangerous than ever." *New Review of Film and Television Studies*, 15.4 (2017): 451–455.
- Patulny, Roger, Alberto Bellocchi, Rebecca E. Olson, Sukhmani Khorana, Jordan McKenzie, and Michelle Peterie. *Emotions in late modernity*. New York & London: Routledge, 2019.
- Pribram, Deidre. *Emotions, genre, justice in film and television: Detecting feeling*. London & New York: Routledge, 2012.
- Redfern, Nick. "Colour palettes in US film trailers: a comparative analysis of movie barcode." *Umanistica Digitale* 10 (2021): 251–270.
- Redfern, Nick. "Shot Scale in Hollywood and German Cinema, 1910 to 1939." 2010. Accessed August 1, 2023. <https://nickredfern.files.wordpress.com/2009/08/nick-redfern-shot-scales-in-hollywood-and-german-cinema-1910-to-19392.pdf>.
- Rep. *La Représentation Des Femmes Dans Les Médias Audiovisuels Pendant L'épidémie De Covid-19*. Les Collections CSA. Les Collections CSA, 2020.
- Roggen, S. "Cutting rates and shot scales in 1950s CinemaScope: a systematic style analysis," *Screening the past* 44. Accessed June 29, 2023. <http://www.screeningthepast.com/issue-44-first-release/cutting-rates-and-shot-scales-in-1950s-cinemascope-a-systematic-style-analysis/>.

- Rooney, Brendan, and Katalin E. Bálint. "Watching more closely: shot scale affects film viewers' theory of mind tendency but not ability." *Frontiers in Psychology* 8 (2018). Accessed July 30, 2023. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5776141/>.
- Savage, Sophia. "Gender Imbalance in Media, Geena Davis, Broken Models of Masculinity & Femininity." *IndieWire*, April 12, 2011. <https://www.indiewire.com/2011/04/gender-imbalance-in-media-geena-davis-broken-models-of-masculinity-femininity-237388/>.
- Salt, Barry. "The shape of 1959." *New Review of Film and Television Studies* 7, no. 4 (2009): 393–409.
- Salt, Barry. *Film style and technology: History and analysis*. Starword, 1992.
- Salt, Barry. "Practical film theory and its application to TV series dramas." *Journal of Media Practice* 2.2 (2001): 98–113.
- Saper, Craig. "DATA TO THE NTH DEGREE Zooming in on The Smart Set." In *Big Data – a New Medium?* Edited by Natasha Lushetich, 115–129. London: Routledge, 2021.
- Savardi, Mattia, András Bálint Kovács, Alberto Signoroni, and Sergio Benini. "CineScale: A dataset of cinematic shot scale in movies," *Data in Brief* 36 107002 (2021):1–40.
- Troscianko, Tom, Timothy S. Meese, and Stephen Hinde. "Perception while watching movies: Effects of physical screen size and scene type." *i-Perception* 3.7 (2012): 414–425.
- Waller, Bridget M., James J. Cray, and Anne M. Burrows. "Selection for Universal Facial Emotion." *Emotion* 8.3 (2008): 435–439.

