

In Focus

Embodied Cinematography in *Mr. Robot*



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ABSTRACT

***Mr. Robot* is an American television series that conveys the alienating effects of technology through unusual composition patterns. These patterns do not constitute mere coatings but manifestations of embodied metaphors that serve as emotion markers, redundant elements to maintain the mood. The viewers are led to share the character's emotions, due to perceptual and sensory-motor experiences that are activated through the metaphoric *mise-en-scène*. The unorthodox framing also appears to affect the attentional synchrony, helping to immerse viewers in the obscure fictional world. All in all, the cinematography seems to facilitate the connection between the minds of fictional characters and viewers through bodily experiences.**

KEYWORDS: embodied cognition, visual metaphor, editing, framing, eye movements

INTRODUCTION

Mr. Robot is a USA Network drama series created by Sam Esmail spanning four seasons that ran from 2015 to 2019. The main character is Elliot Alderson, a computer technician with social anxiety disorder and clinical depression. The story begins when he is recruited to join a group of hacktivists (fsociety) whose objective is to conduct a cyberattack erasing all consumer debts from the database of a conglomerate corporation (E-Corp) perceived as 'evil'. In Volmar's (2017) words, the series is an incredible show of iconoclasm for commercial entertainment. It received critical acclaim¹ and won multiple awards, including the Golden Globe for Best Television Series (2016), the AFI Awards for TV Program of the Year (2016), and the American Society of Cinematographers Award for Outstand-

ing Achievement in Cinematography (2017). The style of the cinematography, designed by Tom Campbell, has become the trademark of the whole series, as highlighted by specialized websites². In the interviews, Campbell claims that the unusual patterns used in the series to express the alienating effects of technology were aimed precisely to become a visual reference (see Collins 2015; Albert 2018).

The starting point of this research is that visual style is not a mere coating but "what articulates, modulates and develops a thematic structure/pattern" (Martin 2014: 24). Moreover, I argue that these filmmaking choices are visual manifestations of embodied metaphors and that they form a redundant network designed to

1 For instance, a rating of 98% on the American television and film review website Rotten Tomatoes based on 146 critiques, with an average of 8.35/10.

2 For example: <https://video.filmschoolrejects.com/mr-robot-unconventional-framing/>
<https://nofilmschool.com/2016/09/socially-anxious-framing-mr-robot-and-how-its-used-tell-stories>
<https://www.provideocoalition.com/much-headroom-joy-unconventional-compositions/>

evoke emotions. Embodied metaphors are inherent to human thought and essential to express abstract concepts. Perceptual and sensory-motor experiences are activated in our brains through the metaphoric *mise-en-scène* created by filmmakers, who calibrate these embodied cognitive structures shared with the viewer according to the desirable level of empathy they wish to unleash (Gallese, Guerra 2012). The metaphors also serve as emotion markers (Smith 2003) – redundant elements which do not contribute to the narrative but which are essential for maintaining the mood. In *Mr. Robot*, the abundance of such recurring resources creates a network designed to maintain the dark, pessimistic, confusing atmosphere of this acclaimed television series.

The present study falls into four parts. In the first part, the connection between the unconventional compositions of *Mr. Robot* with embodied metaphors is examined using primary metaphors as analytical units. In the second part, it is measured how often the unusual patterns are used in order to determine whether they form a redundant network of elements to generate and maintain the mood. In the third part, the effects of these stylistic devices on the smooth editing of dialogues and, consequently, on the viewer's gaze are explored. Finally, the significance of these different analyses is discussed.

UNCONVENTIONAL COMPOSITIONS AND EMBODIED METAPHORS

As stated by Mascelli (1965), composition is not a mechanical process because it involves several factors, such as emotions or artistic values. Nevertheless, cinematography manuals gather certain conventions as general guidelines (e.g., Millerson 1985; Arijon 1991; Katz 1991; Tomaric 2013; Schroepel 2015). One of the best-known is the Rule of Thirds, according to which the main focus should be situated at one of the four intersection points created when the frame is divided into equal thirds, horizontally and vertically. Moreover, when

an object or subject is facing one side, sufficient space should be left in front of the gaze or direction. Thus, conversations are cut with the characters looking at each other from opposite ends of the frame, leaving looking room or breathing room between their faces that helps convey the physical space they occupy. In the same way, the headroom, or distance between the character's head and the top of the frame, should be neither too short nor too long – approximately one-third of the distance down from the top of the frame to the subject's eyes. A balance also needs to be reached in terms of the mass between the main subject, or positive space, and the area surrounding it, or negative space. Negative space defines and emphasizes the main topic, drawing the eye to it. It provides breathing room and prevents the image from appearing too cluttered, but if the main character only takes up a small fraction of the frame, the negative space becomes much more noticeable. To help achieve a visual balance, the quadrant system splits the frame in half vertically and horizontally, creating four equal areas where the masses can be distributed. Symmetry, however, must be avoided.

The composition recommendations above are mostly contravened in *Mr. Robot*. As shown in **Figure 1**, either the headroom is excessive (top row), or the breathing room is at the back positioning the faces at the edge of the frame closest to the person to whom the characters are speaking (center), or the characters are placed in a lower quadrant (bottom row).

According to embodied film theory, viewers do not perceive images passively; instead, they process them creatively through embodied information. Films are simulations created by and for embodied minds (Grodal 2009). Coëgnarts (2017) proposes to combine conceptual metaphor theory and embodied simulation theory into a unified embodied model to understand conceptual meaning in cinema. He suggests that viewers are able to attribute mental states to characters because the way the characters' mental states are

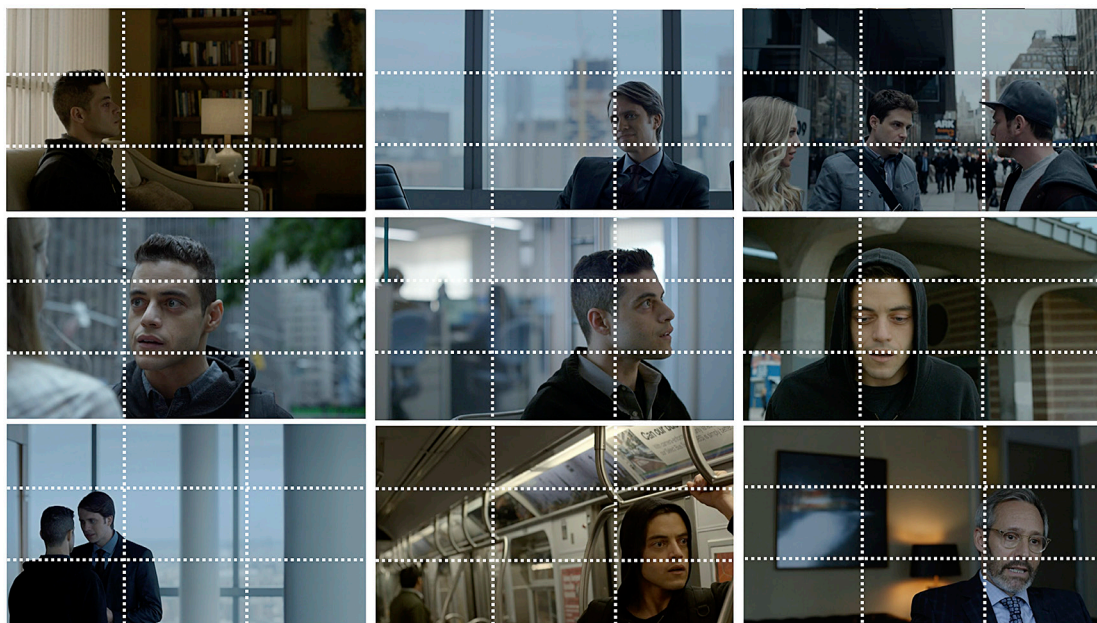


FIGURE 1. Examples of unconventional compositions in *Mr. Robot*: too much headroom (top row), wrong breathing room (center), and both (bottom row). The dotted lines grid corresponds to the rule of thirds.

embodied through *mise-en-scène* matches the viewers' own experience. The meaning is metaphorically mapped within the sensory-motor system through, for example, conceptual metaphors. Several authors have hitherto argued that embodied metaphors are used to arrange the elements in a certain frame because they are inherent to human thought and essential to express abstract concepts (see Forceville, Jeulink 2011; Forceville, Renckens 2013; Ortiz 2011, 2014, 2015; Winter 2014; Coëgnarts, Kravanja 2012a, 2012b, 2014, 2105, 2016a, 2016b; Bálint, Tan 2015; Fahlenbrach 2016; Coëgnarts 2019, 2020).

Cognitive linguistics commonly distinguishes between "primary" and "non-primary" metaphors. Primary metaphors arise from our most basic physical and perceptual experiences of the world, and are thus assumed to be universal, whereas non-primary metaphors stem from specific cultural context. Numerous publications have traced primary metaphors in different languages, and have generally concluded that, indeed, there is an embodied base. However, their cultural dimension has also been considered. Thus, Grady and Ascoli (2017) claim that experiences lead to natural cognitive associations that could be established as conventional patterns, depending on the linguistic and cultural surroundings. Winter and Matlock (2017) suggest that metaphors have multi-causal origins and not only does the embodied experience provide speakers with correlations but so do culture, language, gesture, and environment.

Despite these disagreements, using primary metaphors as units of analysis allows us to draw the attention to sensory-motor experiences. At the same time, they show which elements in the source domain are projected onto the target domain³. For this reason, Forceville (2016) points out that research on visual metaphor should maintain the distinction between crea-

tive/resemblance and primary/correlation metaphors – two broad categories that are not mutually exclusive, as Coëgnarts and Kravanja (2012a) emphasize.

According to Grady (1997), the primary metaphor UNDERSTANDING IS SEEING⁴ is motivated by the correlation between visual perception and conscious awareness of information. Verbal examples include "I see what you mean" and "I *can't* see your point." This metaphor is visually present when the image is deliberately out of focus to express that a character is confused, puzzled, or disorientated, as in the case of *Mr. Robot*. Other primary metaphors with visual manifestations are LACK OF CONTROL IS BEING DOWN and UNHAPPINESS IS DOWN. The former stems from the fact that a person placed in a physically higher position exercises greater control over people and situations in a physically lower position. The latter is based on the correlation between elevation and feeling safe through power and control. Verbal examples are "He has a whole team *under* his command" and "I'm feeling *down*." The wrong headroom in which the characters are usually shot in the *Mr. Robot* series can be related to these metaphors; that is, the composition expresses that they are *under* some corporation's control and that they are feeling *down*. Both metaphors can be associated with the constant perception of the gravitational pull, defined by Arnheim (1954) as the force we constantly live under to maintain an upright position. Since we perceive the elements within a framed image as also being subject to this force, those at the top seem to have overcome this gravitational pull, while those at the bottom have been defeated by it. This embodied experience is also implicitly stated by Giannetti (2002) when he remarks that the area near the top of the frame can suggest power, authority, and aspiration, whereas areas near the bottom tend to evoke subservience, vulnerability, and powerlessness.

3 Metaphor is considered as the partial mapping of a source domain onto a target domain, where the source domain helps us to structure, understand, and reason about the target domain.

4 By convention, the metaphors are written in small capitals and their verbal manifestations in italics.

The correlation between an object's dimension and its intrinsic value, as in "Today is the *big day*", leads to IMPORTANCE IS SIZE/VOLUME, whereas being in a central position and having control over surrounding objects, as in "This issue is *central* to achieving a negotiation", gives rise to IMPORTANCE IS CENTRAL. Arnheim (1957) stated that the apparent size of a framed object in the film medium should be applied to indicate its relative power. Thus, shots in which objects appear to be different in size or in a marginal position may function as a source domain to express the target domain of importance. Massive negative space (**Figure 2**, top row, left) can be understood as a visual manifestation of IMPORTANCE IS CENTRAL, whereas LACK OF CONTROL/UNHAPPINESS IS DOWN together with IMPORTANCE IS SIZE and IMPORTANCE IS CENTRAL underlie the representative quadrant framing in *Mr. Robot* (**Figure 2**, top row right and bottom row). In other words, the framing expresses metaphorically that the characters are *diminished* and *on the edge* of being *put down* by a hidden force or a conspiracy.

As Giannetti (2002) asserts, the framing can also be a metaphor for confinement, whether literal or psychological. By placing the characters near the borders, with insufficient looking room, they seem trapped. It visually conveys the primary metaphor MENTAL STATES ARE PLACES, deriving from how a certain place affects us. Verbal examples are "I feel *out of place* here" or "The director finds himself in a difficult *position*." Elliot is shot without breathing room, particularly during dialogues, because he suffers from social anxiety and speaking with other people puts him *in a suffocating situation*. On the other hand, he has a dissociative identity disorder, being at the same time a cybersecurity engineer and hacktivist, Elliot and Mr. Robot. These dualities are occasionally conveyed by not maintaining the visual axis. When editing shots of people talking or looking at each other, the characters' gaze should be in opposite directions. To convey the physical space that they occupy,

the usual ratio is to fill two thirds of the screen area with the person featured in the shot, leaving the third area with breathing room. Furthermore, when characters are positioned on one side of the screen, they must remain within the same visual axis throughout the edited scene. This stable spatial bodily orientation allows viewers to concentrate on the story, whereas breaking with these matching conventions leads to awkward visual jumps that divert attention. In *Mr. Robot*, the changes in the character's position can be related to AGREEMENT IS BEING ON THE SAME SIDE, which stems from our observation of how people who share the same beliefs tend to congregate, e.g., "I hope you will be *on my side* when it comes to voting." **Figure 3** presents different examples where the visual axis changes, precisely expressing *not being on the same side*. For instance, Elliot is placed differently when he believes that Gideon has suspicions rather than when Gideon praises him, thus conveying the dissonance (top row). Another example is how the characters' visual axis in the master two-shot is not the same as the visual axis in the angular shots, expressing their ambiguous *situation* (center). A further illustration is when the characters are placed in different frame areas in consecutive shots (bottom row) because they play cat and mouse, changing their *positions*, unable to reach *a settlement*.

Sometimes, the formal features of objects and lines within the frame seem to confine the characters. They appear to be enclosed in their location, isolated in their own frames, not sharing their physical space. This meaning derives from the primary metaphors EMOTIONAL INTIMACY IS PROXIMITY and RELATIONSHIPS ARE ENCLOSURES, which stem from the correlation between emotional intimacy and physical nearness. They are verbally present when we say "She has *distanced* herself from us" or "It's a *closed* group of friends" and also when the characters are in a frame-within-a-frame to express the lack of unity in the relationship. **Figure 4** illustrates different visual manifestations

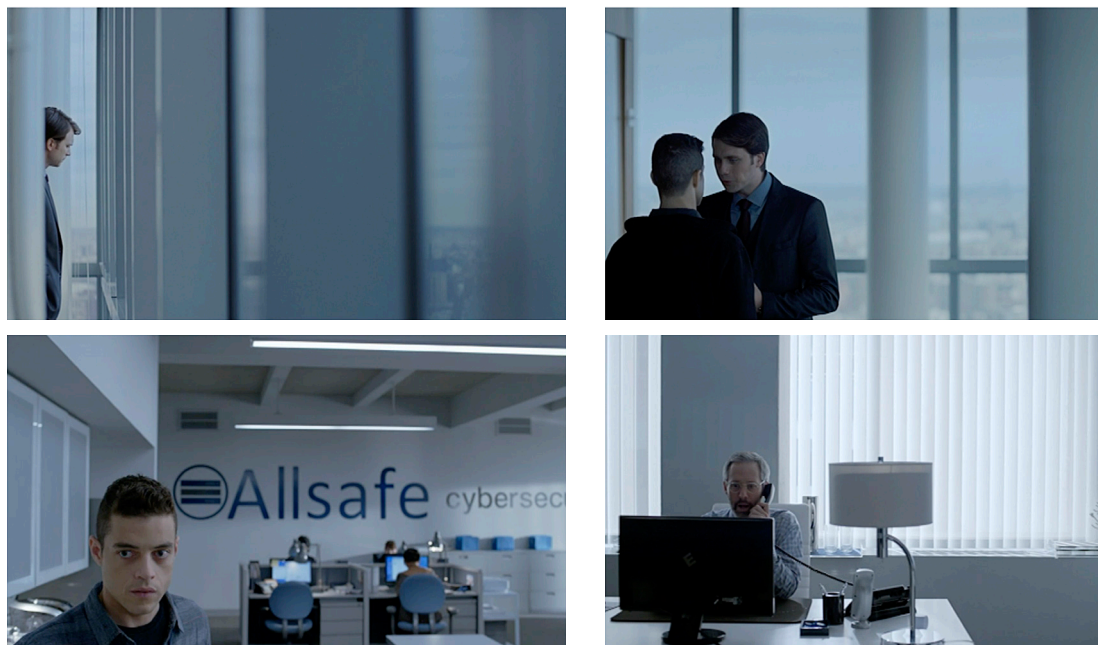


FIGURE 2. Visual manifestations of LACK OF CONTROL/UNHAPPINESS IS DOWN plus IMPORTANCE IS SIZE/CENTRAL.

FIGURE 3. Visual manifestations of MENTAL STATES ARE PLACES and AGREEMENT/SOLIDARITY IS BEING ON THE SAME SIDE.



FIGURE 4. Visual manifestations of EMOTIONAL INTIMACY IS PROXIMITY and RELATIONSHIPS ARE ENCLOSURES.

of these metaphors. In the top row, characters maintain their *own space* divided by permanent *barriers*. In the bottom row, EMOTIONAL INTIMACY IS PROXIMITY and RELATIONSHIPS ARE ENCLOSURES are combined with LACK OF CONTROL/UNHAPPINESS IS DOWN and IMPORTANCE IS SIZE AND CENTRAL. In other words, Elliot does not trust people's intentions, and he feels *trapped, diminished, under* their control.

REDUNDANT NETWORK OF ELEMENTS

Maddock (2018) points out that *Mr. Robot's* unconventional compositions can also be found, for instance, in television series such as *Luther* (Neil Cross 2010), *Broadchurch* (Chris Chibnall 2013-2017), and *Kiri* (Euros Lyn 2018), or in the Tom Hooper films *The King's Speech* (2010), *Les Misérables* (2012), and *The Danish Girl* (2015). In these cases, however, the composition rules are broken in a timely manner, whereas in *Mr. Robot* they form a redundant network to maintain the pessimistic mood.

According to the mood-cue approach proposed by Smith (2003), the *mise-en-scène* is one tool among many other instruments used in filmmaking to evoke a certain emotion together with the editing, music, narrative situation, or performance. These elements are never used in isolation, but rather create a redundant whole, which increases the likelihood of achieving the desired emotional state in viewers of differing sensitivities. The audience does not have to be aware of these emotion markers, whose function is to generate and maintain a specific mood.

In the mood-cue approach, the beginning of the film is key, as it establishes the emotional state that will run throughout the film. In *Mr. Robot*, the equivalent would be the first episode, entitled "eps1.0_hellofriend.mov". However, Todd Campbell became the cinematographer in the second episode, "eps1.1_ones-and-zeros.mpeg" so this was the episode analyzed. The unconventional compositions explored were the following: out of focus (UNDERSTANDING IS SEEING), wrong headroom

(LACK OF CONTROL/UNHAPPINESS IS DOWN), wrong looking room (MENTAL STATES ARE PLACES), visual jumps (AGREEMENT IS BEING ON THE SAME SIDE), massive negative space (IMPORTANCE IS CENTRAL), lower quadrant (LACK OF CONTROL/UNHAPPINESS IS DOWN + IMPORTANCE IS SIZE), and frame-within-a-frame (EMOTIONAL INTIMACY IS PROXIMITY + RELATIONSHIPS ARE ENCLOSURES).

Table 1 presents the times at which each unconventional composition appears, as well as the duration in seconds. The most frequent are the wrong looking room (WLR), which occurs 50 times for a total duration of 7:22 minutes, and the wrong headroom (WHR), which occurs 37 times for a total duration of 13:57. The frame-within-a-frame (FWF) takes place 26 times for a total duration of 2:17 minutes. Out of focus (OF) and lower quadrant (LQ) occur 7 times for a total duration of 1:05 minutes and 39 seconds, respectively. Negative space (NS) was found twice. The total duration of these unconventional compositions was 25:39 minutes. Although some compositions occasionally take place together, this duration is actually significant considering the episode lasts 41:59 minutes. Furthermore, 46 visual jumps (VJ) were identified due to changes in the characters' visual axis.

The distribution of these compositions was also analyzed within the beats, the most basic storytelling units in television according to Newman (2006). Each beat pushes the plot forward, reminds us of certain details, and tells us something new that we wish to know while at the same time increasing our desire to know more. Fourteen beats were identified, and the analysis was as follows:

1. From 00:00 to 4:26. Tyrell offers Elliot a job as head of the cybersecurity for E-Corp, but he declines. The FWF is the most frequent composition. It can be related to the *distance* between the two characters and the impossibility of them connecting. At the end of the beat, there is also a massive negative space surrounding Tyrell, expressing

WLR		WHR		FWF		OF		LQ		NE		VJ
Time	Dur.	Time	Dur.	Time	Dur.	Time	Dur.	Time	Dur.	Time	Dur.	Time
04:26	00:16	00:16	03:42	00:19	00:10	14:55	00:02	03:03	00:10	03:58	00:13	03:03
04:45	00:10	05:39	00:02	00:43	00:06	14:59	00:02	03:42	00:06	37:42	00:06	03:14
05:03	00:03	05:43	00:59	00:54	00:07	21:34	00:38	28:31	00:03			03:42
05:12	00:03	10:22	00:19	01:01	00:11	23:38	00:03	28:41	00:02			11:16
05:43	00:59	13:19	00:03	01:19	00:02	24:51	00:09	31:56	00:03			13:18
10:41	00:03	13:25	00:24	01:31	00:04	26:10	00:07	32:08	00:10			14:10
10:46	00:03	14:08	00:06	01:36	00:05	35:50	00:04	32:58	00:05			14:42
10:51	00:08	14:48	00:04	02:03	00:04							15:14
11:03	00:04	15:14	00:04	02:25	00:05							16:43
13:25	00:24	15:21	00:04	02:34	00:03							17:29
16:52	00:08	15:32	00:06	02:41	00:02							17:48
17:34	00:04	15:39	00:51	04:11	00:07							18:10
17:41	00:02	16:33	00:10	16:18	00:05							18:13
18:13	00:03	17:48	00:08	17:58	00:07							18:16
18:20	00:03	18:23	01:09	18:08	00:02							18:20
18:56	00:04	19:59	00:13	23:22	00:11							19:06
19:01	00:05	20:33	00:54	23:44	00:06							19:12
19:12	00:05	21:34	00:49	23:55	00:04							19:47
19:26	00:03	22:40	00:02	24:04	00:04							19:59
19:34	00:13	22:56	00:06	24:46	00:05							20:26
20:14	00:12	23:16	00:10	25:08	00:02							20:29
20:29	00:04	23:59	00:04	25:13	00:03							20:33
20:35	00:04	24:08	00:09	26:25	00:03							20:41
20:41	00:02	25:31	00:01	27:07	00:03							20:46
20:46	00:06	25:34	00:18	27:12	00:12							20:56
20:56	00:03	25:55	00:15	31:36	00:04							21:05
21:05	00:09	26:17	00:23									21:16
21:16	00:04	26:44	00:22									21:23
21:23	00:01	27:12	00:12									21:34
22:20	00:03	27:27	00:04									22:20
22:28	00:02	27:36	00:03									22:40
22:45	00:04	27:42	00:36									02:49
22:52	00:02	28:20	00:16									23:05
23:02	00:03	34:03	00:10									23:20
25:25	00:02	38:39	00:11									23:32
25:34	00:09	39:11	00:10									24:51
25:52	00:18	41:01	00:18									26:10
26:17	00:04											26:18
26:33	00:07											27:11
27:03	00:02											28:18
27:27	00:04											28:36
27:36	00:03											29:25
27:42	00:36											29:38
28:20	00:16											30:34
29:25	00:12											38:50
29:42	00:52											40:21
31:56	00:03											
32:08	00:03											
34:03	00:10											
38:39	00:19											
Total	7:22	13:57		2:17		1:05		00:39		00:19		

TABLE 1. The time and duration of the unconventional compositions analyzed.

the fact that he feels *diminished* before the corporation.

2. From 4:26 to 6:42. Elliot is driven home and comes across Shayla. He asks for a refill, but Shayla is hesitant because she does not have withdrawal meds to go with it. While they talk, WHR and WLR are applied, which convey feeling *down and suffocated, on the edge*.
From 6:42 to 9:35. At home, Elliot hacks Tyrell, but it was so easy that he panics. He destroys all the components and throws them away. This beat does not include any of the unconventional compositions studied. When Elliot is working with the computer, the headroom is correct. However, there is a fast-cutting or hip-hop montage when Elliot tears down the memory chips and disk drives.
4. From 9:35 to 13:02. Gideon praises Elliot for saving the company, although he has suspicions. Gideon asks Elliot to keep investigating and shows him a video released by fsociety. The dialogue maintains the looking room at first, but when Gideon asks why Elliot did not tell him about the data file, his visual axis changes and the WLR appears. When Gideon seems satisfied with the answer, Elliot has looking room again. There are VJ when his mental state changes. In short, his *situation* is constantly changing.
5. From 13:02 to 14:23. Angela and Ollie run into Elliot, and invite him to dinner. He accepts and hurries off home when he notices two E-Corp security men. Angela and Ollie buy a CD from a hacker. The dialogue is shot with WHR and also with WLR when Elliot is speaking. They are *under* some hiding control and Elliot feels he is *suffocating*.
6. From 14:23 to 17:42. Elliot finds Darlene in his flat. Both take the subway, and they go to fsociety's hideout. There are two OF occurrences when Elliot finds Darlene in his shower, related to his *confusion* about the situation. When they talk, there are instances of WHR and WLR, again expressing Elliot's *overwhelming* feelings.
7. From 17:42 to 23:15. Elliot meets the other hackers. Mr. Robot tells him about the Steel Mountain plan, but Elliot refuses because it would kill people, and then leaves. There are several VJ, due to changes in the visual axis when the characters speak, along with instances of WLR. These jumps represent metaphorical disagreements and make sense considering that Mr. Robot and Elliot are the same person.
8. From 23:15 to 23:26. Elliot comes back home, and during the subway trip he wonders whether he should turn in the fsociety. Elliot's perplexity is highlighted using VJ, WHR, and FWF.
9. From 23:26 to 28:44. Elliot finds the drug dealer Fernando Vera in Shayla's flat, dressed only in underwear. Elliot feels uncomfortable and is worried about his friend. He thinks about reporting Fernando. This beat includes WHR, WLR, VJ, OF, FWF, and LQ. Such density of resources stresses Elliot's uneasiness and restlessness.
10. From 28:44 to 30:54. Once Fernando is gone, Elliot finds Shayla bruised and drugged, but she asks Elliot not to avenge her. Again, the dialogue is shot with WLR and there are VJ due to the visual axis changes, expressing the opposite feelings.
11. From 30:54 to 31:30. Elliot realizes that Mr. Robot is right. He is confident and none of the unconventional compositions are present.
12. From 31:30 to 35:23. Elliot talks to Krista, his therapist, about not being in control. His framing is correct, but Krista is in the LQ and with WLR. There are interspersed images of him informing about the illegal activities of Fernando when he is talking about choices, so he seems to be *on top* of the situation. However, when she reminds him what happened with his father, the framing changes to WHR and WLR.

1	WHR	FWF	FWF	FWF	FWF	FWF	FWF	FWF	FWF	FWF	FWF	FWF	VJ	LQ	VJ	LQ	NE	FWF
	00:16	00:19	00:43	00:54	01:01	01:19	01:31	01:36	02:03	02:25	02:34	02:41	03:03	03:14	03:42	03:58	04:11	
2	WLR	WLR	WLR	WLR	WHR	WHR												
	04:26	04:45	05:03	05:12	05:39	05:43												
4	WHR	WLR	WLR	WLR	WLR	VJ												
	10:22	10:41	10:46	10:51	11:03	11:16												
5	VJ	WHR	WHR	WHR	VJ													
	13:18	13:19	13:25	14:08	14:10													
6	VJ	WHR	OF	OF	WHR	WHR	WHR	FWF	WHR	VJ	WLR	VJ	WLR	WLR				
	14:42	14:48	14:55	14:59	15:14	15:21	15:32	15:39	16:18	16:33	16:43	16:52	17:29	17:34	17:41			
7	VJ	WHR	FWF	FWF	VJ	WLR	VJ	VJ	WLR	WHR	WLR	WLR	VJ	WLR	VJ	WLR	WLR	VJ
	17:48	17:58	18:08	18:10	18:13	18:13	18:16	18:20	18:23	18:56	19:01	19:06	19:12	19:12	19:26	19:34	19:47	
	WLR	VJ	WLR	WHR	WLR	WLR	WLR	WLR	WLR	WLR	WLR	OF	WLR	WLR	WHR	WLR	WLR	
	20:14	20:26	20:29	20:33	20:35	20:41	20:46	20:56	21:05	21:16	21:23	21:34	22:20	22:28	22:40	22:45	22:52	
8	WHR	VJ	FWF															
	23:16	23:20	23:22															
9	OF	FWF	FWF	WHR	FWF	WHR	FWF	OF	FWF	FWF	WLR	WHR	WHR	WLR	WHR	OF	VJ	
	23:38	23:44	23:55	23:59	24:04	24:08	24:46	24:51	25:08	25:13	25:25	25:31	25:34	25:52	25:55	26:10	26:10	
	WHR	WLR	VJ	FWF	WLR	WHR	WLR	FWF	VJ	WHR	WHR	WHR	WHR	VJ	WHR	LQ	VJ	
	26:17	26:17	26:18	26:25	26:33	26:44	27:03	27:07	27:11	27:12	27:27	27:36	27:42	28:18	28:20	28:31	28:36	
10	VJ	WLR	VJ	WLR	VJ													
	29:25	29:38	29:42	30:34														
12	FWF	LQ	LQ	LQ	WHR	WLR												
	31:36	31:56	32:08	32:58	34:03													
13	OF	NE																
	35:50	37:42																
14	WLR	WHR	VJ	WHR	VJ	WHR												
	38:39	38:50	39:11	40:21	41:01													

FIGURE 5. Frequencies of the unconventional compositions by beat.

13. From 35:23 to 37:55. Angela calls Elliot, but he ignores the phone. The CD guy hacks Angela's laptop. The hacker's framing is a black NS.
14. From 37:55 to 41:59. Elliot explains to Mr. Robot that he has come up with a plan to destroy the Steel Mountain without using an explosion. Mr. Robot asks Elliot about his father. He tells the story, and after that, Mr. Robot pushes him off the railing, onto the rocks below. WHR and VJ are present in this final beat.

Figure 5 illustrates the frequency of these unconventional compositions by showing each time they appear. WLR is found in dialogues with Shayla, Gideon, Mr. Robot, Fernando, and Krista. It is linked to how stressful Elliot feels in the presence of others owing to his social anxiety. There are VJ in almost all the beats, and they are related to Elliot's mental instability. WHR is utilized over the chapter, expressing an ominous mood, as if something pulls down the characters. All in all, these redundant unconventional compositions related to embodied metaphors convey the isolation and the distrust experienced by the characters.

DIFFERENCES IN THE GAZE'S BEHAVIOR

Framing the characters without sufficient looking room breaks the rules of editing dialogues. Not maintaining the visual axes creates awkward visual jumps that disorientate the spectator. Berliner and Cohen (2011) argue that the classical conventions of continuity editing have remained relatively stable because they were developed to exploit and accommodate the processes and limitations of the human perceptual system. As noted by Heimann *et al.* (2016), matching rules are close enough to normal vision, which also includes short interruptions of sight during saccades and blinks, and bodily movements, such as head turns to changes of perspective. They suggest that sensory-motor networks might play an important role in film perception and, therefore, it should be considered when

exploring spectators' experience of editing. Empirical studies have implied that film cuts elicit physiological and behavioral signs of an orienting response in spectators. Magliano and Zacks (2011) corroborate that cuts are not consciously perceived, and therefore that the event is perceived as unbroken when the edition respects the 180° rule, but not when the centerline is crossed.

Smith (2013) points out that audience fixations in a film scene are a consequence of endogenous control, such as narrative, or exogenous control, such as the *mise-en-scène*. According to the results obtained with eye-trackers, the viewer's gaze is highly coordinated. This tendency toward similar gaze patterns between multiple viewers of the same scene is a phenomenon called attentional synchrony. The shot size presenting the greatest attentional synchrony is the close medium shot, which typically depicts a single actor, framed centrally or slightly off-center in conversation either with the camera or with an off-screen character. This synchrony appears as a tight clustering of gaze on faces around 360–400 milliseconds after the cut when a dialogue scene uses the shot-reverse-shot technique in accordance with position/look matching conventions (Smith *et al.* 2012). To explore the extent to which this synchrony is affected by *Mr. Robot's* unusual composition, particularly the WLR, an eye-tracking study was carried out.

Method

Participants

Twenty healthy volunteers (14 women, 6 men, M_{age} : 20.9, $SD = 2.02$) participated in the experiment. None of them presented any personal history of neurological or psychiatric illness, drug or alcohol abuse, or current medication, and they had normal or corrected-to-normal vision. They were recruited from the student population of the Faculty of Economic and Business Sciences of the University of Alicante (Spain). Informed consent was obtained from all participants. The experiment was approved

by the ethics committee of the University of Alicante.

Apparatus

The Tobii X2 eye-tracker with a sampling frequency of 60 Hz was used for this experiment. It was run on a consumer-standard personal computer with a 17-inch LCD screen. Participants sat comfortably in a chair, 65 cm away from the screen, in a silent room with a dimmed light. At the beginning of each session, the system was adjusted with a standard nine-point calibration.

Stimuli

The Untouchables (Brian De Palma 1987) was chosen to be compared with *Mr. Robot* because the former follows the classical conventions of continuity editing. Both DVDs were available at the University of Alicante library. The dubbed version in Spanish was used to ensure appropriate understanding. To select the scenes, the content was converted into MP4 format using ImTOO DVD Ripper software and then imported into the editing program Final Cut (Apple Inc.) because it was available at the media laboratory, easy to use, and precise.

As the face gaze bias seems confirmed (see Treuting 2006; Smith, Henderson 2008; Olk, Kappas 2011), as well as the movement area bias (Mital *et al.* 2011), the scenes had to meet the following criteria to be included in the present experiment:

1. Dialogue between two characters.
2. Range between medium shots and close-ups.
3. Filmed with internal reverse angles or parallel positions – that is, the camera covers the performers individually, but not including their backs.
4. Interior scenario, with no other person inside or with no high-motion areas.
5. Sufficient and homogeneous lighting – that is, neither low-key nor high contrast.

Figure 6 illustrates the two conditions. All the scenes selected from *The Untouchables* followed position match and the breathing room (top row) but not the fragments selected from *Mr. Robot* (bottom row).

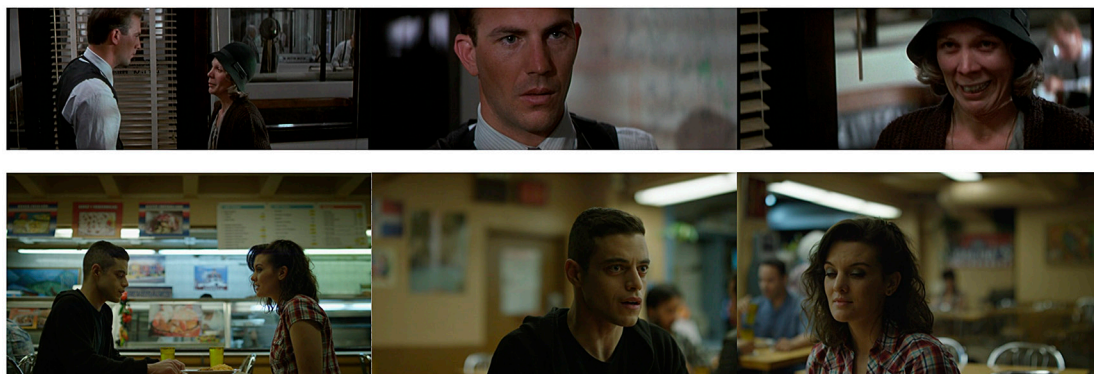


FIGURE 6. Example of condition 1 (top row) and condition 2 (bottom row).

Code	Duration in seconds	Selected Fragments
Untouchables_01	24	3
Untouchables_02	21	3
Untouchables_03	38	6
Untouchables_04	35	6
Untouchables_05	29	6
Mr. Robot_01	29	7
Mr. Robot_02	39	3
Mr. Robot_03	25	7
Mr. Robot_04	23	4
Mr. Robot_05	47	8

TABLE 2. Duration in seconds of each scene and number of fragments analyzed.

As shown in Table 2, the durations varied slightly, with a mean of 29.6 seconds ($SD = 7$) in *The Untouchables* and 32.6 seconds ($SD = 10.1$) in *Mr. Robot*. Due to the properties of the stimulus, the number of fragments with the shot-reverse technique was 24 in *The Untouchables* and 29 in *Mr. Robot*, but it was considered to be sufficiently balanced. Appendix 1 illustrates all the selected scenes and fragments.

Experimental design

The study featured a paired design: the same participant gave both time values (*The Untouchables* and *Mr. Robot*), allowing us to focus on the differences. The dependent variable was the time that the gaze took after the cut to rest on the character's face – that is, the milliseconds from the cut to the first fixation on the new content. The recorded timestamp of the last frame before the cut was identified, and then subtracted from the recorded timestamps of the first frame where the participant's gaze was directed at the character's face (see **Figure 7**).

Procedure

Participants were informed that they were going to watch videos while their eyes were tracked. Each scene appeared in random order and only once. The videos were separated by a two-second-long gray screen. The total duration was approximately ten minutes by participant.



FIGURE 7. After the cut, we identified each participant's first fixation on the character's face and then subtracted the cut's timestamp. In this example, it was 2284 for the participant represented by the red confetti minus 1919, so the time needed to reorientate the gaze was 365 milliseconds.

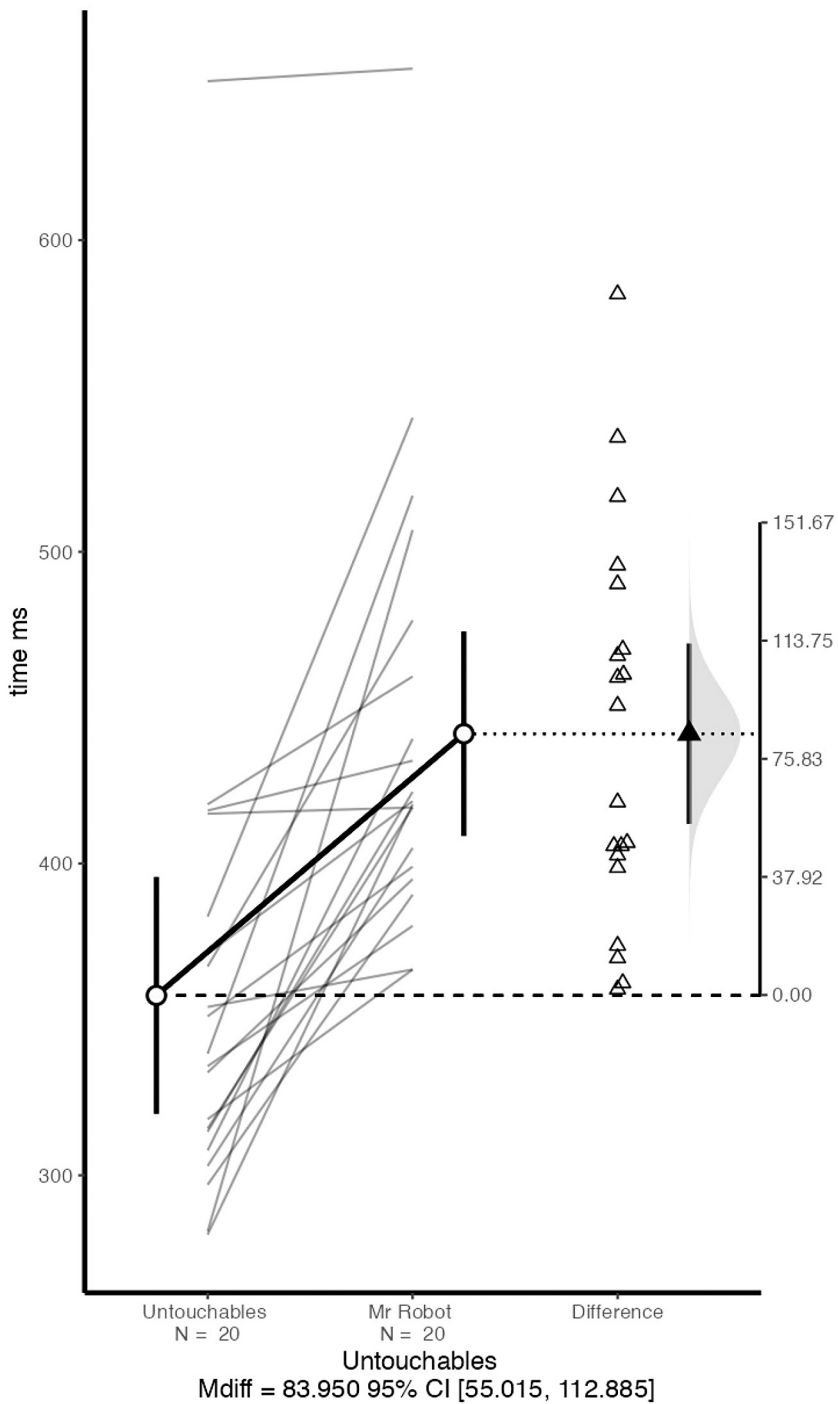


FIGURE 8. The paired mean difference between *The Untouchables* and *Mr. Robot*.

Data treatment

Eye movement data was recorded from a total of 1,060 trials: 20 participants and 53 trials (24 for condition 1, and 29 for condition 2). The data was analyzed according to the estimation statistics framework (see Cumming 2012) using R computer software⁵ and the open statistical platform jamovi⁶.

Results

The mean response time for *The Untouchables* was $M = 357$ ms, 95% CI [320, 396], and for *Mr. Robot* it was $M = 441$ ms, 95% CI [409, 474]. The standardized mean difference was $d_{\text{avg}} = 1.09$, 95% CI [0.70, 1.59], a value considered large. The effect size for the difference between the groups was calculated using Cohen's d , resulting in a value of 1.36, which is also a large effect. The paired mean difference between *The Untouchables* and *Mr. Robot* was 84.0 [95.0% CI 59.4, 1.12e+02]. The p value of the two-sided permutation t -test was 0.0. Figure 8 shows the Gardner-Altman estimation plot. Both groups are plotted on the left axes as a slopegraph where each paired set of observations is connected by a gray line. The paired mean difference is plotted on a floating axis on the right as a bootstrap sampling distribution. The mean difference is depicted as a black triangle. The 95% confidence interval is indicated by the ends of the vertical error bar.

These results reveal a statistically significant difference between the mean test scores of the two conditions. Specifically, *Mr. Robot* presented a higher mean response time than *The Untouchables*. The latter could suggest that breaking the Hollywood rules is more time-consuming, perhaps because the participants' gaze has to look over a greater distance to find each character's face. In other words, continuity

editing conventions work more efficiently in relation to the viewers' perceptual system, as they allow viewers to concentrate on the story. The additional time needed to locate the characters' faces could indicate that a more significant amount of cognitive effort was required to follow the dialogue. All in all, this exploratory experiment seems to confirm that breaking classical continuity editing conventions can affect the attentional patterns and that *mise-en-scène* can influence the viewer's perception.

DISCUSSION AND CONCLUSIONS

The analysis carried out shows that *Mr. Robot* uses unconventional compositions redundantly to evoke sensory-motor experiences related to abstract experiences and emotions. Seven resources were examined: the wrong looking room, the wrong headroom, the frame-within-a-frame, the out of focus, the low quadrant, the massive negative space, and the visual jumps. These choices are not a mere coating, but rather metaphors that sustain the plot's ideas of powerlessness, distrust, and alienation: the characters feel *down*, *under* some corporation control, *small* before the conspiracies, *on the edge*. Elliot has *two sides*: he is unable to *open up*, and he feels he is *suffocating*, with *barriers* in his relationships. These resources have already been described in the literature regarding sensory-motor patterns and *mise-en-scène*, but their use in this television series is extraordinarily abundant. Thanks to these embodied visual metaphors, the viewer may feel what the characters feel, sharing their emotional state more intensely than when conventional compositions are used. Moreover, the eye-tracking results seem to corroborate that attentional synchrony is somehow affected by the unusual breathing room displayed in *Mr. Robot*, and the clustering of gaze on faces took longer than in orthodox compositions. In other words, classical continuity editing conventions seem more efficient at addressing the viewer's gaze, making it easier to follow the dialogues. Again, this visual strategy helps to immerse

5 R Core Team (2021). R: A Language and environment for statistical computing. (Version 4.1) [Computer software]. Retrieved from <https://cran.r-project.org>. (R packages retrieved from MRAN snapshot 2022).

6 The jamovi project (2022). *Jamovi* (Version 2.3) [Computer Software]. Retrieved from <https://www.jamovi.org>

viewers in the obscure fictional world conveyed in the show.

All the redundant resources studied appear since the beginning of the episode and are constantly repeated, taking up over half the episode. The first to be used is wrong headroom, a metaphor for lack of control and happiness, followed by the frame-within-a-frame, expressing isolation. Wrong headroom becomes more intense a few minutes later, the characters featuring in the lower quadrant, thus giving more space to the corporate building, which seems to be a menacing power. The character's visual axes are not maintained, creating visual jumps and thus making the story more confusing. The dialogues are shot without sufficient looking room, so the viewer can feel the characters' anxiety. The abundance of such repeated resources leads us to conclude that they form part of the network of emotion markers serving to create, maintain, and reinforce the ideas of isolation, loneliness, anxiety, and unease. These emotion markers are visual metaphors based on a sensory-motor experience. Thus, the viewer is led to share the characters' feelings through the embodied simulation that occurs when we interpret images metaphorically.

This study is not without limitations. First, only a part of the striking cinematography of *Mr. Robot* has been related to primary metaphors, but other *mise-en-scène* choices were not unexplored, such as the lighting, color, or lenses. In the eye-tracking experiment, the sample size imposes limitations on the generalizability of the results. Likewise, the redundancy of unconventional compositions was only examined in depth in one episode, but new visual strategies might spread as the plot develops and becomes more and more convoluted. Another potential limitation is the choice of *The Untouchables* as a representative example of continuity editing conventions. Despite these limitations, the study suggests that the cinematographer's decisions to express the characters' alienation, isolation, loneliness, anxiety, and unease are based on sensory-motor experiences we all share through embodied metaphors. By using bodily experiences, filmmakers can connect the minds of fictional characters and viewers.

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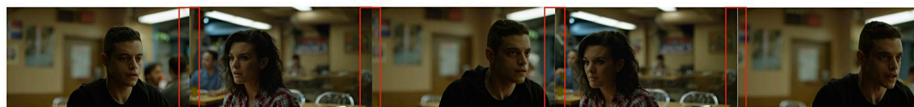
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Mr. Robot (scene 1, eps.1.5_br4ve-trave1er.asf)

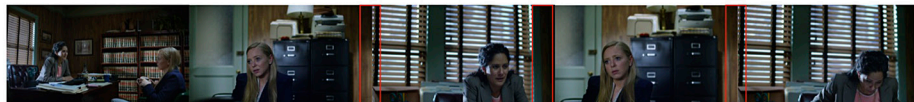


M_01_01 (429 ms) M_01_02 (399 ms) M_01_03 (438 ms)



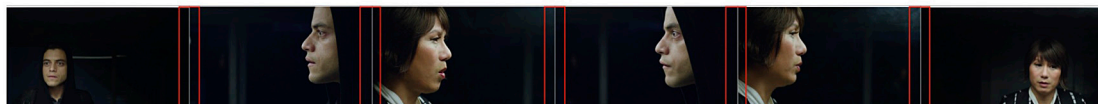
M_01_04 (436 ms) M_01_05 (429 ms) M_01_06 (478 ms) M_01_07 (534 ms)

Mr. Robot (scene 2, eps.1.5_br4ve-trave1er.asf)

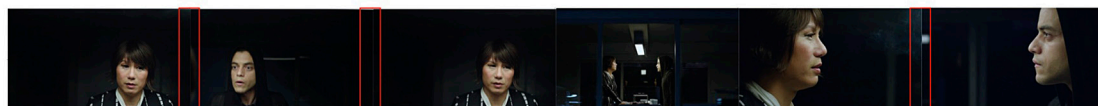


M_02_01 (484 ms) M_02_02 (448 ms) M_02_03 (485 ms)

Mr. Robot (scene 3, eps.1.7_wh1ter0se.m4v)



M_03_01 (414 ms) M_03_02 (402 ms) M_03_03 (481) M_03_04 (501 ms) M_03_05 (418 ms)

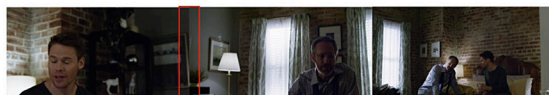


M_03_06 (375 ms) M_03_07 (448 ms) M_03_08 (436 ms)

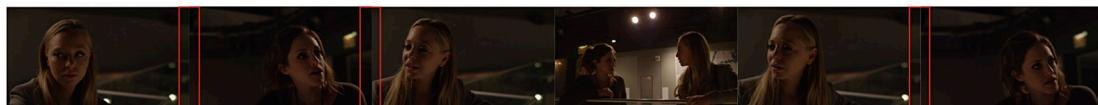
Mr. Robot (scene 4, eps.1.8_mirr0r1ng.qt)



M_04_01 (438 ms) M_04_02 (428 ms) M_04_03 (424 ms)



Mr. Robot (scene 5, eps.1.8_mirr0r1ng.qt)



M_05_01 (406 ms) M_05_02 (406 ms) M_05_03 (464 ms)



M_05_04 (445 ms) M_05_05 (423 ms) M_05_06 (242 ms) M_05_07 (368) M_05_08 (402 ms)

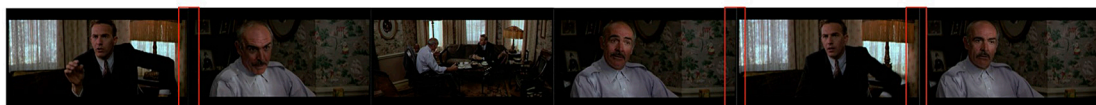
APPENDIX 1. Fragments for the eye-tracking experiment.

Untouchables (scene 1)



U_01_01 (367 ms) U_01_02 (440 ms) U_01_03 (428 ms)

Untouchables (scene 2)



U_02_01 (443 ms) U_02_02 (450 ms) U_02_03 (413 ms)

Untouchables (scene 3)



U_03_01 (146 ms) U_03_02 (lost) U_03_03 (262 ms) U_03_04 (129 ms) U_03_05 (269 ms)

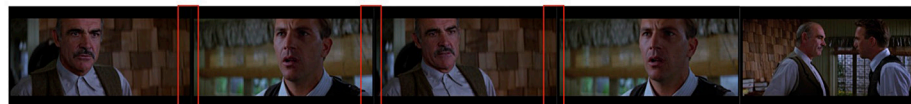


U_03_06 (87 ms)

Untouchables (scene 4)



U_04_01 (339 ms) U_04_02 (408 ms) U_04_03 (596 ms)

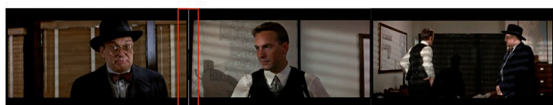


U_04_04 (476 ms) U_04_05 (379 ms) U_04_06 (356 ms)

Untouchables (scene 5)



U_05_01 (341 ms) U_05_02 (296 ms) U_05_03 (390 ms) U_05_04 (399 ms) U_05_05 (446 ms)



U_05_06 (396 ms)