SIGGRAPH Asia 2024 – Course Notes Breaking the Story Formula

Craig Caldwell, Ph.D.

University of Utah, Salt Lake City, Utah

Abstract

Audiences want stories that meet their expectations... just not in the way they expect it. That is the fine line a storyteller must walk, and it is one of the biggest challenges in media today. To achieve that goal, directors and producers rely on animators, VFX artists, and interactive designers. The Story has evolved over thousands of years, and the expected structures (formulas) have been codified in the Hero's Journey, Save the Cat, and Story Circle (Embryo).

In this session, we will look at how filmmakers have been subverting story 'formulas" while using recognized story 'forms' to break from expectations. Such approaches includes 'forms' such as Time (Christopher Nolan), Setting (Cohen Brothers), and Endings (Michael Arndt). We will also explore breaking Genre structures (i.e., Comedy, Action, Hybrid Genres) and the impact of their Tropes (i.e., Anti-Hero as Hero/Villain). What impact do cultural differences have on story expectations (i.e., Eastern (Kishōtenketsu) versus Western (MonoMyth) storytelling [Do we read images differently? Do all stories have conflict?]) When breaking from norms, is it a Story's Structure or its Storytelling (narrative) that provides the most significant latitude? Where do Unreliable Narrators, Subtext, Cause-and-Effect, Choices, Arcs, and AI... come into play?

This session reveals an audience's expectations in storytelling, which, if you are going to break from expectations, it is advantageous to know ahead of time. This session is for those who want to understand how story norms have been broken in creating content for animated films, VFX, video games, and interactive media. This presentation contains many visuals to illustrate the concepts.

About the Presenter

Craig Caldwell, USTAR (Utah Science Technology and Research) Professor, Digital Media Cluster, University of Utah and DeTao Master Academy, Institute of Animation and Creative Content, SIVA Songjiang, China. Industry experience: 3D Technology Specialist, Walt Disney Feature Animation in Burbank, CA, and Creative Training at Electronic Arts, Tiburon Studio. Academic background: Head of the largest Film School in Australia, Griffith University. The Griffith Film School is known for its interdisciplinary program in Film, Animation, and Games. Previously, I was Head of the Media Arts Department at the University of Arizona. A founder of the highly ranked Entertainment Arts and Engineering Program, Master Games Studio, University of Utah. Recent conference presentations include FMX, Sundance, Mundos Digitales, SIGGRAPH, and View Conference. Recent guest lectures include HKUST (GZ), Animation Nation Singapore, Gobleins, and Istanbul Technical University.

The following notes are adapted from the speaker's book - Story Structure and Development, A Guide for Animators, VFX Artists, Game Designers, and XR Developers. 2nd Edition (January 2025), CRC Press, Taylor & Francis publishers

1. Evolution of the Dramatic Story

Every day, we tell each other stories, but these are not the dramatic stories we see in the movies or encounter in interactive games. Dramatic stories are more than *what*-is-happening; they are about the "why" what-is-happening. The dictionary definition of a story is *a "sequence of events.*" Yes, dramatic stories are still a sequence of events, but the fundamental difference is that they are a sequence of *"connected"* events.

Stories not only connect audiences to what individuals think but also to what is essential within a culture. The critical questions in a dramatic story are: *What* does your character want? *Why* do they want it? *How* do they go about getting it? *What* stops them? What are the consequences? When we talk about dramatic stories, this is what we are referring to. You could define dramatic stories as a main character who goes after something, but there is an obstacle in their way that results in conflict), and by the end of the Story, they are changed and see the world differently.

The *Why* underscores how we use stories to understand life and why things work the way they do. Stories are the devices we use in our search for meaning in life, to make sense of why we are alive. They give us a perspective on the priorities in our lives. For generations, cultures have proposed answers to these questions through myths (Figure 1.1): Greek plays, Shakespearean plays, Chinese proverbs, African folk tales, and interpreted dreams.²

Joseph Campbell, whose research has become the *Hero's Journey* story structure, emphasized that audiences have evolved from searching for clues to the meaning of life to *the experience* of being alive through stories.³ (Figure 1.2) We repeatedly return to our favorite media for that "experience." Successful stories engage audiences emotionally by linking the external action in the Story to the internal emotions of the characters. When it works well, a viewer's emotions are connected with the main character's emotions, triggering identification with the Story

Story formulas, such as the Hero's Journey, Save the Cat's Beat Sheet, and Dan Harmon's Story Embryo, offer structured approaches to narrative construction. They can be invaluable tools for organizing complex stories and crafting compelling first drafts. However, over-reliance on these formulas can lead to predictability and a lack of originality. Robert McKee (Figure 1.3) highlights the issue with rigid formulas in screenwriting, noting that prescriptive "page-by-page"



Figure 1.1 Western & Eastern Mythology

Sometimes I think they (the audience) are missing the point. It is not a puzzle to be unpacked... it is an emotional experience to be had.



Figure 1.2 Director Christopher Nolan

guidelines can stifle creativity. Instead of adhering strictly to formulaic events at specific pages, McKee⁴ advocates for focusing on the underlying structures—the forms—of a story. These structures can be adapted and reconfigured to suit the narrative's needs, allowing for more flexibility and innovation.

2. Modern Storytelling Techniques

Contemporary storytelling often experiments with nonlinear structures. Rather than following a strict beginning-middle-end format, stories might start at the end, interweave different timeline elements, or disrupt the chronological order. This approach plays on audiences' ability to piece together narrative fragments and derive meaning from non-traditional sequences.

Quentin Tarantino (Figure 1.4) is a prominent example of this technique. He draws inspiration from novels, where nonlinear storytelling is common. In his films, he employs nonlinear narratives to create a more engaging and cinematic experience. Tarantino's method illustrates how shifting traditional narrative structures can enhance storytelling, creating a unique and impactful viewing experience.

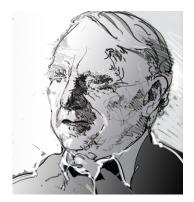


Figure 1.3 Robert McKee



Figure 1.4 Quentin Tarantino

Quentin Tarantino uses this new audience capability in his nonlinear film approach. This approach evolved from the flexibility he preferred when reading a novel." *In a book, you can start in the middle of the Story. They (characters) are doing something that is taking place in the here and now. Now, it comes to Chapter 3, which happened two years before. I thought that if you did it the way they did in novels, it would inherently be cinematic. The cross-cutting would be neat. Putting it in chronological order would not be cinematic but drab.*⁵

Dramatic stories follow a distinct but familiar structure —connected actions, with conflict that intensifies, which force difficult choices with consequences. Audiences anticipate the increasing conflict to force a crisis, which leads to a climax, with a surprise along the way that the audience did not anticipate, leading to a resolution (which gives meaning to the Story), and in the end, the character (or their universe) is changed. These are the universal components of a dramatic story today.

Formulas provide a helpful framework for storytelling, but their true value lies in understanding and adapting their underlying structures. By recognizing the flexibility within these frameworks and experimenting with narrative chronology, writers can break free from predictability and craft stories that are both original and compelling. Embracing this adaptability allows for a more creative approach to storytelling, aligning with modern audiences' expectations and preferences.

3. Subverting Time and Characters

Christopher Nolan's films are renowned for their innovative manipulation of time, a technique he employs with a sophistication akin to how others might play with narrative structure. Nolan's approach involves presenting the past, present, and future out of chronological order, compelling audiences to reconstruct the Story themselves. In *Memento*, Nolan⁶ (Figure 1.5) intertwines two narrative threads—one unfolding backward in black-and-white and the other forward in color—creating a disorienting but engaging puzzle for viewers. Similarly, *Tenet* explores time in reverse, while Interstellar delves into the relativity of time with its portrayal of time dilation. This subversion of temporal order not only captivates audiences but also challenges their perception of narrative coherence.

Turning to characters, it's worth considering whether their development has become formulaic as well. Traditionally, stories have featured clear archetypes, such as heroes and villains—think of the classic dichotomies in *Star Wars* or *Snow White*. However, the 21st century has seen a rise in antiheroes—reluctant or flawed protagonists who challenge traditional notions of heroism. Characters like Star-Lord from *Guardians of the Galaxy* or many modern superheroes fit this mold, reflecting a shift in storytelling that Taylor Swift even references the Anti-Hero (Figure 1.6).

This trend has become so pervasive that it might be viewed as a new formula in itself. Director James Gunn, for instance, has indicated a desire to move away from the anti-hero trope in his upcoming *Superman* film, suggesting a potential shift in how we approach character development in superhero narratives.

More recently, we've seen the emergence of the Hero/Villain archetype—characters who oscillate between good and bad actions, leaving audiences uncertain of their true nature. Figures like Loki, Walter White from *Breaking Bad*, Megamind, and Joel from *The Last of Us* embody this duality (Figure 1.7). Dan Harmon⁷, creator of *Rick & Morty*, captures this ambiguity, noting that his character Rick transcends traditional hero/villain boundaries, embodying traits of both depending on the situation.



Figure 1.5 Christopher Nolan

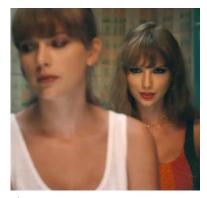


Figure 1.6 Taylor Swift



Figure 1.7 Duality – *Rick & Morty*

4. Breaking Genre Tropes & Plots

Genres contain the clearest set of story expectations that audiences view as formulaic. Genres include Science Fiction, Mystery, Western, Comedy, Horror, etc.⁸ Subverting genre expectations involves pushing the boundaries of traditional genre conventions to create something unexpected. Director Martin Scorsese (*The Departed, Roosevelt*) recognizes that

"For better or worse, the Hollywood director is an entertainer in the business of telling stories. Therefore, they are saddled with conventions and stereotypes, formulas and clichés, and all these limitations were codified in specific genres. This was the very foundation of early cinema. Audiences loved genre pictures. Eventually, genres were organized to serve assembly line production... westerns, musicals, detective films, and so forth.9" (Figure 1.7)

Genres are recognized by their tropes and plots (descriptions and examples of conventions and devices). What would be the tropes for the Western genre? - frontier setting, lone cowboy, lawmen and outlaws, honor/morality theme, women with a past, violent justice, guns, bar/saloon, horseback riding, mechanized transportation (railroad or similar), showdown and shootout between good and bad at the end (e.g., *The Quick and the Dead, The Good, the Bad, and the Ugly, Winchester '73...)*¹⁰.

Plot for the Western genre would include Protect the Ranch story, Build an Empire story, Revenge for a Wrong story, Natives versus Settlers story, Technology reaches the Frontier story, Outlaw's Story, and Lawman's Story. What are strategies for disrupting genre expectations?



Figure 1.8 Martin Scorsese, directors work *within a Genre structure*.

Genre Subversions: Subverting genre conventions involves upending audience expectations through unexpected plot twists, unconventional character developments, or thematic elements that challenge established norms. In *No Country for Old Men*, the Coen Brothers defy typical genre expectations by eschewing the climactic showdown between good and evil. Instead, the film presents a more ambiguous resolution, reflecting a deeper meditation on fate and morality.

Unforgiven offers another notable example of genre subversion¹². In this film, the once-heroic cowboy is portrayed as a weakened, morally conflicted figure in his later years. The clear-cut morality of the Western genre is challenged when the final shootout, traditionally seen as an act of heroic justice, appears instead as a dishonorable and desperate act. Furthermore, the film subverts the genre by having its protagonist, William Munny, leave behind the rugged frontier life for a more modern, urban setting—a nod to historical figures like Wyatt Earp, who himself relocated to Los Angeles. This departure from the classic Western archetype marks a profound rejection of the genre's traditional values. For further exploration, see the Neo-Western genre, which continues to evolve and reframe Western tropes in contemporary contexts.

Character Subversion: Character subversion involves reimagining traditional genre archetypes to reveal unexpected dimensions. In *Breaking Bad*, Walter White begins as a sympathetic, morally driven protagonist but gradually transforms into a complex anti-hero. This evolution subverts

typical expectations by showing how a seemingly righteous individual can become deeply flawed and morally ambiguous, challenging the traditional notion of a clear-cut hero.

Cultural and Historical Context: Placing a story in an unconventional cultural or historical context can also subvert genre expectations. The Western genre, traditionally set in the American frontier, has been reimagined in various unexpected forms. For instance, *The Mandalorian* and *Star Wars* incorporate Western motifs into their narratives, blending them with science fiction elements. Similarly, the character of Wolverine in *Logan* presents a gritty, modern take on the Western archetype, exploring themes of redemption and aging in a futuristic setting. These examples illustrate how genres can be recontextualized to challenge and expand upon traditional genre conventions.

Genre Deconstructions: Analyze the tropes and clichés of a genre, then generate a self-aware narrative highlighting the absurdities or inconsistencies within the genre's conventions. The horror film *Scream* (1996) subverted the slasher genre by making the characters aware of the genre rules and conventions with self-referentiality in the dialogue. Parodies are comedic deconstructions where the Story exaggerates and pokes fun at the clichés and stereotypes associated with a genre (e.g., *Megamind, Shrek, Revolting Rhymes, Deadpool.*)¹³

Genre Form and Style: Unconventional narrative structures or visual techniques to disrupt genre conventions. Quentin Tarantino introduced a nonlinear narrative structure (e.g., *Pulp Fiction*) to subvert traditional storytelling conventions. In *Marie Antoinette* (2006) modern music was used in the French 1700s dance scenes. In the *Spider-Verse* movies, there is a visual merging of 2D and 3D. Different visual and aesthetic choices than those usually associated with a genre open up new storytelling experiences because they disrupt audience expectations.

Genre Homages: Incorporate a genre's conventions and aesthetics into a new work. Homages celebrate the unique characteristics and traditions of a genre while adding a different perspective or modern twist (e.g., *Body Heat, Mad Max, Django Unchained*).¹⁴

Genre Transcendence: Move beyond the constraints of single genre categories by creating works that defy classification. Christopher Nolan (director) approaches the challenge differently - "breaking the rules isn't interesting. it's making up new ones that keep things exciting." Most of us look at breaking the rules to get something new, so this philosophy is a bit different. In the first *Toy Story*, they fell into this approach by consciously rejecting the tropes that defined the animation genre. The director and story creators listed the animation tropes they would not have in the film: No Fairy Tales, No songs – particularly "I want songs", No boring Main Character, No Villain, and the movie is not going to be just "for kids." 16

Genre Mashups/Hybrid: Combine elements from two or more genres to create a new hybrid genre. This can involve incorporating elements of drama, comedy, action, romance, and other genres into a cohesive narrative. For instance, blending science fiction with historical fiction has led to all sorts of stories. *Cowboys & Aliens* is an example of a film that mashes up the Western and science fiction genres.¹⁷

5. Eastern vs. Western Storytelling

Storytelling is directly impacted by one's sense of self and the different social structures within Eastern and Western cultures. The collective nature of Eastern society is consistent with their broad, contextual view of the world necessitated by the close cooperation needed to survive. They see events as being highly complex and affected by many factors out of their control. In comparison, Western society's individualistic (independent) nature is consistent with their early survival mode under isolated conditions and their focus on categorizing objects in isolation from their context. They believe that if they can know the scientific rules governing objects, they can be controlled. Eastern versus Western translates to collectivism vs. individuality.

Narrative Structure

<u>Western stories</u> typically involve a central protagonist overcoming external conflicts and obstacles to achieve a specific objective. They follow a more linear narrative structure with a clear beginning, middle, and end, even if it isn't presented in that order. There is a focus on cause-and-effect relationships, with the audience expecting clear resolutions.

Eastern narratives, on the other hand, tend to have a more cyclical, episodic structure focused on harmony. Viewers are to figure out what is happening from the exposition provided. Its story structure leans toward nonlinear, circular storytelling. The narrative unfolds with story elements whose interconnectedness becomes evident near the end of the Story. The endings are more ambiguous with their implied resolution, indicative of the Kishōtenketsu (Figure 1.9)¹⁸ 4-act story structure; is conflict a necessary structure?

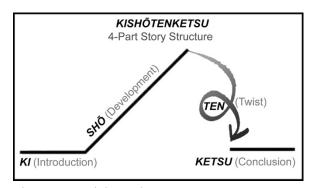


Figure 1.9 Kishōtenketsu, an eastern story structure, conflict is not a necessary component

Character Development:

<u>Western stories</u> emphasize the individual hero's journey, personal growth, and triumph over adversity. Characters are well-defined, with clear motivations and arcs. Westerners manipulate their environment (categorizing objects) versus adapting to it.

<u>Eastern stories</u> emphasize internal journeys, self-reflection, and the interconnectedness of characters. There is frequently an ensemble cast, where multiple characters offer contrasting perspectives on the central themes. These different viewpoints encourage the audience to contemplate and draw their conclusions. Eastern stories emphasize character development in their relationships with others. Change comes from internal conflicts, which lead to self-awareness and action. "*The character's motivation is to do something beneficial for their country, clan, and society. Self-sacrifice is expected.*" Differences include the desire for individual distinctiveness vs. a preference for being harmonious with the group.

- Western cultures prefer confident characters (tall poppy) versus humility in Eastern cultures.
- Western promotes expressive characters, while Eastern characters are more about self-control (that does not necessarily mean conformity).

- Field dependent (environment context) versus field independent (more character-focused independent of context).
- Western characters are results-oriented, while Eastern characters have other factors that are just as important (i.e., harmony, tradition)

Cultural Influences:

Western storytelling reflects individualistic values, with a focus on action, external conflicts, and the pursuit of goals. Storytelling (Hollywood) is often shaped by individualistic philosophies, with life being a series of choices (free will) and the pursuit of happiness. Themes of heroism, justice, self-reliance, and good over evil are common. Eastern narratives, influenced by philosophies like Buddhism and Taoism, emphasize harmony, introspection, and the interconnectedness of all things. They often explore ambiguity, leaving room for interpretation and personal reflection. Eastern culture prioritizes a sense of collectiveness which for them is key to an efficient and safe society. Eastern themes include fate, destiny, and the impact of nature (*Wandering Earth* [China, 2019], *Concrete Utopia* [Korea, 2023], *Godzilla* [Japan])

Conflict:²⁰

Western Films: Western storytelling centers around conflict that is more confrontational, with a clear distinction between winners and losers. The tests in the middle of the Story are there to determine one's worthiness. The resolution involves the defeat of external adversaries (equalizer).

Eastern Films: Conflict is not central to the Story; that is not to say there isn't conflict.²¹ In *Parasite* (Figure 1.10), there is violence, but it is only near the end (Korean films are more of a hybrid of Eastern with Western influences). Conflict is more in the sense of negotiation, with the Story's resolution grounded in acceptance or compromise. Eastern films do not require violent climaxes, which result in a decisive resolution.



Figure 1.10 Parasite

Endings:

Western stories typically strive for definitive resolutions – conflicts resolved, and goals achieved, leading to a "happily ever after" ending. Eastern narratives frequently have more openended or ambiguous conclusions, inviting the audience to contemplate the deeper meanings and draw their own conclusions. These differences in storytelling traditions stem from the distinct cultural values, philosophies, and worldviews that have shaped the respective societies over centuries. Understanding these contrasts can provide valuable insights into the diverse perspectives and ways of perceiving the world.

Visual Style:

Western stories, especially in Hollywood, place a greater emphasis on realism, spectacle, and special effects (Marvel [Avengers, Figure 1.11]). The focus is on using the external world in visually striking ways to serve the character's goals (Game of Thrones). Due to the Western scientific methodology, the emphasis is on categorizing things, which impacts how audiences attend to information. Westerners – sharp focus character, the background is blurry. Easterners –

everything will be in focus. Eastern stories put more emphasis on symbolism and graphic/stylized compositions (anime). Techniques include the use of long takes, minimalism, and metaphoric imagery. With the culture's greater emphasis on the collective, the visual style incorporates more connectedness between character and setting (everything in focus).

Western stories are conflict-centric (*Avengers*), while Eastern stories may have conflict, but it is not central to the Story. Eastern emphasis is more on worldbuilding, playfulness, and imagery. In *My Neighbor Totoro*, the crisis of Mae's disappearance occurs only in the film's final Act, whereas in a Western film, this would have happened in the first Act. The difference is significant because the majority of Western audiences, having limited familiarity with Eastern story structure, would have long lost interest in the Story due to story expectations as to when things happen and what to expect next. Adapting stories between cultures is not straightforward because of audience expectations.

Where it gets interesting is the blending of movie preferences. In Korea, there is a merging between Eastern and Western storytelling. In China, with the advent of more Western films available to audiences, they adapt their expectations knowing each are structured differently. Ethan Chang²² differentiates the films between those that use the Western structure, those that combine structures with Chinese elements. and those made for Asian audiences with Chinese IP (Figure 1.12). Western studios that make films for Asian audiences must be careful of violating cultural norms which undermining a story's believability. In the first scene in the live-action Mulan version, voung Mulan was fiercely independent; a behavior that did not ring true for Chinese audiences. Though her attitude changed by the end, the audience would not have seen that if they had already stopped watching. In the animated version of *Mulan*, she was motivated by family concerns right from the beginning; Chinese audiences could relate to that behavior right from the beginning.



Figure 1.11 Conflict-Centric

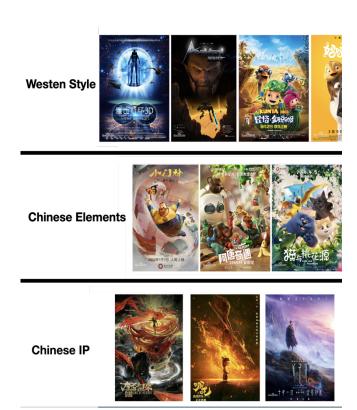


Figure 1.12 Eastern, Western, and blended cinematic styles. Courtesy of Ethan Chang

6. Conclusion - What to do next?

These notes are just a sampling of how story components differ by culture and how traditional story formulas have been subverted. Story has a number of components, and we haven't covered Character details or Narrative in games and XR.

There are excellent sources for additional insights in Story. These include the "audiobook" of Robert McKee's <u>Story</u> (the audio CDs) The actual book is a bit more demanding to read but I find his audio fantastic. There is also a book, with a terrible title, <u>Creativity Rules</u> by John Vorhaus that covers Story well. For additional specifics check out <u>Story Structure</u> and <u>Development</u> 2nd Edition in January 2025 (Figure 1.12).

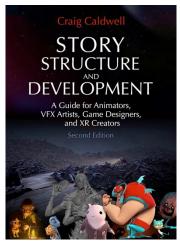


Figure 1.12

7. References

- 1. R. McKee, *Story, Substance, Structure, Style, and the Principles of Screenwriting* (New York, Harper-Collins Publisher, 1997), 19.
- 2. J. Campbell, *The Hero with a Thousand Faces* (New York, New World Library, 2008).
- 3. Ibid., 129.
- 4. B. Think, Interview with Robert McKee (Los Angeles, YouTube, 2012) https://bigthink.com/videos/the-destructiveness-of-formulaic-screenwriting/
- 5. R. Rodriguez, *Quentin Tarantino Interview with Robert Rodriguez*, (Online, YouTube, 2014), https://www.youtube.com/watch?v=dhXZJfLBE3I
- 6. S. Binder, Christopher, *Nolan Directing A Video Essay on Nolan and Time*, (Online, StudioBinder, 2022), https://www.youtube.com/watch?v=QrRe3QL08Xs
- 7. D. Harmon, *Rick and Morty Season 4*, (Adult Swim, Variety, 2020) https://www.youtube.com/watch?v=eQuigYaCNWU
- 8. W. Prompts, *Notes from Robert McKee's "Story" 09: Genre and Expectations*, (Online, Tumblr, 1998), https://writing-prompts-for-friends.tumblr.com/post/190979971973/notes-from-robert-mckees-story-09-genre-and
- 9. M. Scorsese & M.H. Wilson, A Personal Journey With Martin Scorsese Through American Movies (DVD, Lionsgate, 2012)
- 10. K. Phipps, 50 Greatest Western Movies Ever Made, (New York, Vulture: New York Magazine, March 13, 2024), https://www.vulture.com/article/50-best-western-movies-ever.html
- 11. F. Gruber, *The Pulp Jungle*, (Los Angeles, Sherbourne Press, 1967),
- 12. Screened, *The Neo-Western Genre in Movies*, (2020) https://www.youtube.com/watch?v=qLxLLmy5Su4
- 13. T.V. Tropes, https://tvtropes.org/pmwiki/pmwiki.php/Main/GenreDeconstruction
- 14. S. Binder, *Movie Genres Explained Types of Films & the Art of Subverting Film Genres* (Online, StudioBinder, 2023) https://www.youtube.com/watch?v=rDVVE8ZHJ3o
- 15. K. Miyamoto, Screenwriting Wisdom from Christopher Nolan (Online, Screencraft, July

- 24, 2023) https://screencraft.org/blog/screenwriting-wisdom-from-christopher-nolan/
- 16. J. Lasseter, "Filmmakers Reflect," (10th Anniversary Toy Story DVD, Buena Vista Home Entertainment, 2005) https://www.youtube.com/watch?v=4vhapt0KcDg
- 17. https://tvtropes.org/pmwiki/pmwiki.php/Main/HybridGenre
- 18. J. Kindree, *Is conflict necessary?: Kishōtenketsu and the conflict-less plot*, (Florida, WordPress, 2019 https://wordsliketrees.wordpress.com/2019/01/27/is-conflict-necessary-kishotenketsu-and-the-conflict-less-plot/
- 19. L. Alfieri, A. Kole, *Storytelling & culture: East meets West Part 1*, (Online, blooloop, July 1, 2021). https://blooloop.com/theme-park/opinion/western-and-eastern-storytelling/
- 20. L. Alfieri, A. Kole, *Storytelling & culture: East meets West Part 2*, (Online, blooloop, August 25, 2021). https://blooloop.com/theme-park/opinion/culture-and-storytelling/
- 21. L. Devil, Western vs Eastern Storytelling What's the Difference? (A General Overview), (YouTube, 2020) https://www.youtube.com/watch?v=ZGiajG2g-Nc
- 22. E. Chang, *Bloks*, ethancw@qq.com