

TRIZ-Summit Cup – 2019/2020

The official English version, moved to L^AT_EX.

November 10, 2019

1 Category: 8–10 years

Nomination «Inventive activity»

1. In creating an animated cartoon film it is necessary to resolve several contradictions:

- The number of drawings of which the film consists, should be as large as possible, so that the picture should be continuous, without jumps, and it should be as small as possible, in order to reduce time for creating an animated cartoon film.
- The drawings, of which the cartoon film consists, should have the largest possible number of details, so that the characters should be emotional, and should contain the smallest number of details in order to facilitate the process of creating the animated cartoon film.
- The camera filming individual drawings, should be immobile, so that the picture should be distinct and include the objects, which gradually change their position, and should be mobile, in order to include different shooting angles and different volume of space, surrounding the object.

How were these contradictions solved in different techniques of creating animated cartoon films?

2. G.S. Altshuller in his book «Find the idea» proposed a method of creating plots for an animated cartoon film (or a tale), which could be called «Fairy Tales with contradictions». An algorithm for creating such a tale (a plot for an animated cartoon film) is as follows:

1. Select a character or an object of a fairy tale plot
2. Imagine the environment of the character in a nutshell.
3. Apply the technique of fantasizing (increase, decrease, do-it-reverse, animate, imagination binomial, etc.).
4. Formulate an anti-idea and contradiction. Create a plot based on solving of this contradiction.

5. Introduce a restriction or create a new contradiction in the plot using cl. 3. Solutions of the contradiction-development of plot.
6. The result is a very fast moving plot.

Invent a plot for an animated cartoon film, using this algorithm.

Nomination «Fantasizing»

1. In 1974 American science fiction author James Teepttry wrote a story «The girl, who was plugged in». There is such an episode in this story: the film is projected with the aid of lasers to the clouds above the city and all citizens, looking upwards, can watch the film. Nowadays it almost ceased to be science fiction – laser shows on the clouds have become popular. However, these are not exactly films. Invent a new fantastic method for demonstrating films.

2. Soviet science fiction author Nickolay Vassilenko in his story «The Curved mirror» (1977) described a fantastic mirror: when a person looks into it, he sees not the reflection, but a small film, in which the essence of the human being, who looks into the mirror, is presented in the image of a certain animal. Write a science fiction story, based on this idea, however, change the idea with the help of one of the techniques for fantasizing.

Nomination «TRIZ Tools»

1. What elements does a cartoon camera consist of? In what way are they interconnected? Which functions are played by each element? Of what materials is it possible to manufacture characters of an animated cartoon film? Invent your own character for an animated cartoon film and a small story about him.

2. Compile a collection of cards on using the techniques of fantasizing in animated cartoon films and screen adaptations of fairy tales. Analyze this collection of cards. What techniques are most often used for creating typical characters or images (for example, imagine how the image of a curious, mischievous and courageous Buratino is created: long (increased) nose seems to be created «to be peeped into other people's affairs»; «personalized» wood log «does not drown in water and cannot be burnt by fire»). Compare, how similar images are created in different animated cartoon films (screened fairy tales): kind and evil magicians, hero warriors, beautiful princesses, capricious princesses, etc. What is your favorite animated cartoon film? Which particular episodes in this animated cartoon film do you like? Are any techniques for fantasizing used in them?

Nomination «Research»

Compile a collection of cards on inventors (or scientists) and their inventions (discoveries). Analyze this cards collection. What problems are solved by the characters of these animated cartoon films? What techniques were used for solving problems? How are they found solutions (discoveries) used in the life of people?

Nomination «TRIZ Videos»

1. Select several techniques, which are used by film directors, cameramen, sound engineers and screenplay writers (editing, pauses, special effects, slow-motion and quick-motion shooting, etc.) for obtainment of certain effects in cinema. Use these techniques in your videos. Describe your idea in greater detail in the description accompanying the video. Is it possible to intensify these effects using TRIZ methods?

2. Videos on history of photography, cinema and inventions, which were made in these fields. Videos should be short (from 2 to 5 minutes). All authors of the given video should be mentioned: screenplay writer, film editor, actors, etc.

This work is directed at forming methodological material for TRIZ teaching.

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¹<http://triz-summit.ru/en/contest/competition/video/>,
<https://www.youtube.com/channel/UCjMNOjboWRBQA72DJvaC7ew/featured>

2 Category: 11–14 years

Nomination «Inventive activity»

1. In 1909 the American film-maker David Griffith shot a mute short film «Lonely villa»² (which lasted only 7 minutes). This is an action film about an attempt at robbery of a lonely villa. Most probably, this was the first thriller movie (action film causing tension and excitement with the spectator). Three points of view are presented in this film:

- the family staying inside the house and trying to rescue from robbery;
- the gangsters attacking a rich house;
- head of the family and policemen, which appear «at the last moment».

Griffith had an objective to show (during 7 minutes) the starting of this story, penetration of gangsters into the house, the fear of the housewife and her three daughters and (the most important) – the rescue. Prior to creation of «Lonely villa» the films contained such plots, which embraced one event and reflected the sequence of actions of the characters chronologically (the time in the movie coincided with the time of the event in life). What's to be done, in order to show different lines of the plot during a short time and at the same time to intensify the impression (tension) with the spectators? What film technique did David Griffith use for the first time? What other film techniques did Griffith invent and for the creation of what effects were they used? Select a problem or several problems, which were solved by D. Griffith and analyze them according to the following pattern: formulate contradictions, IFR, enumerate resources, which are present in the problem, techniques for resolving contradictions, which could be applied to this problem. Which techniques of filming do you know and for the solving of what problems are they used?

2. In creating an animated cartoon film it is necessary to resolve several contradictions:

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- The camera filming individual drawings, should be immobile, so that the picture should be distinct and include the objects, which gradually change their position, and should be mobile, in order to include different shooting angles and different volume of space, surrounding the object.

How were these contradictions solved in different techniques of creating animated cartoon films?

²https://www.youtube.com/watch?time_continue=13&v=5RdbnyNYAv8

Nomination «Fantasizing»

1. The American science fiction author Thomas Sherred in his story «The Attempt» described a film, which was shot with the aid of a time machine. Invent a fantastic method for creating films. How will the films be shot in future?
2. In the story «The Flying Eagle» by Pavel Amnuel (1970) a dramatist, inventing the plot for a would-be play, does not write the text, as they do now, but creates a video film, imagining that the play has already been staged. He does not need actors, he himself plays the characters embodying their acting manner and their behavior. Invent a story based on this new idea, but change it using some technique of fantasizing.

Nomination «TRIZ Tools»

Describe a technological operation principle of cinema. Of what parts does the CINEMA consist? How do these parts interact for the purpose of obtainment of a cinematographic effect? What effects (physical, chemical and physiological) are used in film shooting and demonstration? How did perception and mentality of people change during decades of existence of cinema? What do you think: what effects will be used in the cinema in future?

Nomination «Research»

1. What genres of cinema do you know? Create the chronology of origination of different genres of the cinema. Is it possible to use the examples of genres of film art for illustrating the Lines of system evolution, known in TRIZ (for example, dynamization, mono-bi-poly-trimming, transition to micro-level)? What genres of film art do you like best of all and why?
2. In 1927 the first show of the film «The Jazz Singer»³ took place. It was the first sound film in the history of cinematography. It is difficult for a modern reader to imagine a film without words and sound effects. However, by far not all the film-makers immediately accepted this revolutionary change. «Muteness, two-dimensionality and monochrome nature of the film are not its shortcomings, but its «structural essence». Film art does not need to overcome them, since new expressive means will only hinder its further improvement», – that is what Yury Tynyanov wrote about peculiarities of film art in 1930-ies. Try to prove the righteousness of opposing viewpoints, first from the standpoint of those who oppose to introduction of sound in the cinema, and then from the standpoint of followers of this technology. What do you think: what new sound effects will appear in the film art in future?

Nomination «TRIZ Videos»

1. Select several techniques, which are used by film directors, cameramen, sound engineers and screenplay writers (editing, pauses, special effects, slow-motion and quick-motion shooting, etc.) for obtainment of certain effects in cinema. Use these techniques in your videos.

³<https://my.mail.ru/mail/wikki0508/video/5622/29304.html>

Describe your idea in greater detail in the description accompanying the video. Is it possible to intensify these effects using TRIZ methods?

2. Videos on history of photography, cinema and inventions, which were made in these fields. Videos should be short (from 2 to 5 minutes). All authors of the given video should be mentioned: screenplay writer, film editor, actors, etc.

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3 Category: 15–17 years

Nomination «Inventive activity»

1. The founder of the genre of science-fiction film is the French filmmaker George Méliès. Each of more than 500 short-length films shot by Méliès, are distinguished by inimitable «filmmaker's mannerism». While shooting the film «A visit to the wreckage of cruiser «Man» (1897–1898) it was necessary to show a distinct picture of people working under water in the episode «divers at work», and also a distinct picture of wreckage of the cruiser. Underwater photography existed in those times, however, they were looked upon as something exotic: sufficiently good quality could not be attained even in a rather transparent water. For example, look at one of the first photographs made under water, made in France in 1893 (we hope, you'll agree that the quality is insufficient for a film). How did they manage to shoot a good quality underwater sequence?



The film by George Méliès «In the Kingdom of Fairies»⁵ uses a similar effect. It is surprising, but the same special effect was used by the filmmaker Alexander Ptushko in the screened fairy tale «Sadko» in sequences, where the action takes place at the bottom of the sea, in the realm of the Sea King.

What other special effects are used in cinema and for solving what problems are they used? What contradictions appear thereby and what techniques are used for resolving these contradictions?

2. In the history of the biggest corporate film company – Hollywood – there are episodes, which are associated neither with the creative process, nor with the invention of new technical means for film-making, but with a purely law problem. By the turn of the 20th century the man, who possessed main patents for film-making equipment was Thomas Edison (that very inventor of a filament lamp). However, the majority of film-makers of that time were main owners of independent companies. Besides, they all worked with equipment, which they themselves improved and adapted to making films based on their own ideas. Because of that they did not consider it to be necessary to pay interest to Edison for using his patents. On December 18, 1908 Edison announced the creation of Motion Picture Patents Company (MPPC), which entered the history of cinema as the Edison Trust. Several film companies entered this Trust, but the majority preferred to remain independent. The day of December 24, 1908, when the jurisdiction of the Trust entered into force, became known in the history of American cinematography as «black Christmas». According to the rules introduced by Edison, independent companies had to pay the Trust huge amounts of money for their right to shoot and demonstrate films. The police closed 500 out of 800 film theaters in New York at the pretext of violation of patent rights. What decision did the independent companies take,

⁵https://www.youtube.com/watch?v=paM_BPyRT1o&t=542s

in order not to depend upon Edison Trust?

Do you know of any examples of commercial marketing solutions, which contributed to the evolution of film art or braked it?

Nomination «Fantasizing»

1. A device is described in the novel by American science fiction author Philip Dick «Do androids dream of electric sheep?»⁶, which enables a group of people to experience feelings of a selected person and to perceive the world in the same way as he perceives it. Thus it is possible to shoot films and the spectators will feel everything that the actor felt during the shooting process. Invent a new fantastic idea, changing the idea of Dick with the aid of a «staged matrix» of G.S. Altshuller.

2. Alexander Belyaev in his novel «The Ruler of the World» (1929⁷) described «theater of thought», in which the actors don't act on the stage, but only imagine their acting, while the spectator «catches» these thoughts and «watches» the performance mentally. Write a science fiction story about the shooting of such a «thought-based film», changing the idea of Belyaev by using one of the techniques of fantasizing.

Nomination «TRIZ Tools»

It is possible to single out several Lines of development in the evolution of technical systems, for example, «mono-bi-poly-trimming»; «dynamization»; «emptiness»; «transition to microlevel»; «personal – personal-corporate – corporate». Compile a collection of cards, illustrating these Lines of development in the field of cinema or photography. Take into account that both cinema and photography are at the same time art and production technology as well as a commercial product (film theaters, advertizing, attending consumer services, etc.).

Nomination «Research»

1. What genres of cinema do you know? Create the chronology of origination of different genres of the cinema. Is it possible to use the examples of genres of film art for illustrating the Lines of system evolution, known in TRIZ (for example, dynamization, mono-bi-poly-trimming, transition to micro-level)? What genres of film art do you like best of all and why?

2. In film history there are people whose achievements and contribution to the development of cinema are rather significant, while their names are forgotten. Collect information concerning the biographies of these film-makers. What problems did they solve and what techniques did they use? What do you think, what Qualities of a Creative Personality helped them to achieve their goals? Often, having solved a particular problem the person stops and, being satisfied with his achievements, cannot create anything new. It is surprising, but the company of Lumière brothers, who have entered history as creators of cinematography, ceased to

⁶<http://lib.ru/INOFAANT/DICKP/sheeps.txt>

⁷<https://www.litmir.me/br/?b=3062&p=1>.

produce films in 1900, only 5 years after the first commercial show of films on December 28, 1895 – the birthday of cinema. What do you think, what can be an obstacle for a person in attainment of significant results in creative activity?

Nomination «TRIZ Videos»

1. Select several techniques, which are used by film directors, cameramen, sound engineers and screenplay writers (editing, pauses, special effects, slow-motion and quick-motion shooting, etc.) for obtainment of certain effects in cinema. Use these techniques in your videos. Describe your idea in greater detail in the description accompanying the video. Is it possible to intensify these effects using TRIZ methods?

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4 Category: students

Nomination «Inventive activity»

1. The founder of the genre of science-fiction film is the French filmmaker George Méliès. Each of more than 500 short-length films shot by Méliès, are distinguished by inimitable «filmmaker's mannerism». While shooting the film «A visit to the wreckage of cruiser «Man» (1897–1898) it was necessary to show a distinct picture of people working under water in the episode «divers at work», and also a distinct picture of wreckage of the cruiser. Underwater photography existed in those times, however, they were looked upon as something exotic: sufficiently good quality could not be attained even in a rather transparent water. For example, look at one of the first photographs made under water, made in France in 1893 (we hope, you'll agree that the quality is insufficient for a film). How did they manage to shoot a good quality underwater sequence?



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Do you know of any examples of commercial marketing solutions, which contributed to the evolution of film art or braked it?

Nomination «Fantasizing»

1. In science fiction stories by the Japanese author Kobo Abe «Totaloscope» and the Italian writer Lino Aldani «Onirofilm» (both stories were published in 1965) films are described, which were shot with the full participation effect and feedback with the spectator. Change this idea using such techniques of fantasizing, using several techniques instead of one. Describe the result.

2. The American science fiction author Frank Herbert in his space epic «The Dune» (1965¹⁰) described how one of the characters controls the behavior of other characters using special voice intonations. At that the person, who is being controlled, understands it fairly well but cannot do anything: he has to obey. Think of a plot for an adventure film of the future taking the idea of Herbert as a basis, but changing it with the development of plot using the techniques of fantasizing.

Nomination «TRIZ Tools»

Trends of technical systems evolution is the basis of TRIZ. There are several possible classifications of these trends. We offer you one of such classifications.



This are from top to bottom and from left to right

¹⁰<https://www.litmir.me/br/?b=196731&p=1>.

- The law of increasing ideality.
- The law of increasing completeness of the system.
- The law of increasing coordination.
- The law of increasing conductivity (of energy, streams, etc.).
- The law of uneven development of parts of the system.
- The tendency of development of technical systems along S-curves.
- The tendency of displacement of humans in technical systems.
- The law of increasing controllability.
- The law of dynamization.
- The law of transition to the supersystem.
- The tendency of coagulation and expansion of technical systems.

Analyze the stages of cinematography evolution using the system of Trends of Technical Systems Evolution. How can one forecast further development of film art taking into account the tendencies in cinematography evolution?

Nomination «Research»

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