



Movies' Effect on Children's Attitudes towards Animals: The Example of *The Boss Baby*

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Abstract

Most of the scientific studies about movies' effects on children focus on the relationship between violence in movies and children's violent behaviors. The second most popular area is movies' effects on developing positive attitudes. However, there are few studies on movies' effects on developing negative attitudes, which is so important. This study was conducted with the purpose of examining the effect of the television series *The Boss Baby* on children's (kindergarten through fourth graders) attitudes towards cats. The study's sample was comprised of 1398 children who continued formal education in five different public schools in Istanbul. The study relied on an experimental design with a pretest-posttest-retention test control group. The study involved three different groups: Experiment-I, Experiment-II, and the Control Group. The Experiment-I group watched *The Boss Baby* as a combined version (4 episodes together), the Experiment-II group watched *The Boss Baby* as a series (one episode every week), and the Control Group didn't watch the movie. In the study, the "Attitude Scale towards Cats" developed by the researcher was used to evaluate children's attitudes towards cats. An ANOVA was implemented to discover if there were a significant difference in the pre-test, post-test, and retention test scores between groups. An independent samples t-test was carried out in order to assess the difference between the sexes. The results suggest that there is no significant difference between groups when it comes to developing negative attitudes. Moreover, being a kindergartener, 1st, 2nd, 3rd, or 4th grader doesn't change the results. The only significant difference is between the girls and boys who were in the Experiment-II group. The girls who watched *The Boss Baby* had more negative attitudes than boys. However, this effect was temporary.

Keywords

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Introduction

When it comes to the effects of the media on children, the attitudes and behaviors of parents differ. Some parents take a prohibitive or restrictive attitude in the context of the media, including cartoons, while others see the media as completely innocent and offer unlimited access to their children. These two extremum point of view towards the media are also seen in scientific studies focusing on the effects of the media on children.

The focus of scientific studies on the media-child relationship has been the effect of violence in movies on children's aggressive behavior. It has been found as a result of many studies in this field that violent scenes in movies cause aggressive behavior in children. In some studies, this effect was found to be short-lived, while in others, it was found to have a long-term effect. While some studies argue that the findings vary from culture to culture, others conclude that there is no connection between violence in movies and children's aggressive behavior.

In some experimental studies, both in the laboratory environment and in the field, it was observed that the tendency of children exposed to violence in television movies to act aggressively increases immediately after the movie (Huesmann & Miller, 1994). Children who watch violent movies inevitably have aggressive feelings and thoughts by displaying aggressive behaviors (Anderson, et al., 2003).

In an experimental study conducted on 3000 Chinese children, it was found that short-term exposure to violent movies triggers high levels of aggressive thinking and behavior. Another result of the study is that girls in the group watching non-violent movies show more aggressive behavior than boys. It was observed that boys in the group watching violent movies showed more aggressive behavior than girls (Zhang, et al., 2019).

Another study that concluded that the effects of films were short-lived was conducted in Turkey. In a study conducted on 5-year-old children in Adana, it was observed that students watching violent movies acted out the characters in the movie during the free play hour, showed aggressive behavior during the establishment stages of the play, and imitated the aggressive behavior and words in the movie. However, this effect was short-lived. In the days after watching the movie, a decrease in aggressive behavior was observed in children and almost completely disappeared on the sixth day. For children watching an educational movie, none of the elements of this movie are reflected in their games. However, the children preferred to set up quieter games. On the other hand, it was observed that female students watched the educational film more carefully while male students watched the aggressive film more carefully (Yaşar & Paksoy, 2011, pp. 287-288).

It was observed that most of the studies in the literature focused on the negative effects of movies, but some studies concluded that movies could be effective in eliminating aggressive behaviors. For example, in an experimental study on 157 children aged 5-6 years, children watched prosocial movies for 5 days. Consequently, it was observed that the aggressive behavior of the children who watched the movies decreased compared to those who did not. This effect was greater in boys than girls (Zhanga, Caob, Tianb, El-Lime, & Gentile, 2020).

Studies that found a high correlation between violent movies and children's aggressive behaviors are more than experimental studies. For example, in a study conducted on 2867 primary school students in the city of Elazığ, a positive correlation was found between watching intensely violent movies and displaying physical violence behaviors and seeing violence as a solution to problems (Tokdemir, et al., 2009). In a study conducted by Björkqvist on Finnish children aged 5-6 years, a similar conclusion was reached, and it was found that those who watched violent movies were more aggressive than other children. (Björkqvist, 1985)

Some academic studies reveal that the effect of movies on children is not only related to mild physical aggression such as hitting, shouting, and pushing but also to acts of physical aggression that fall within the scope of a crime, such as murder and rape. For example, in a study on 40 child murderers

and 200 child rapists aged between 5 and 21, it was concluded that there is a positive correlation between being involved in crime and watching videos with violence and porn content. It has even been found that some juvenile delinquents imitate the violent behaviors they see in the videos (Bailey, 1993).

A meta-analysis study by Paik and Comstock on 217 studies conducted between 1957 and 1990 also reveals that there is a positive correlation between violence in movies and aggressive behavior of children (Paik & Comstock, 1994).

In addition to studies on the short-term impacts of violent visuals, there are studies on the long-term effects of violent movies watched as a child. For example, the study conducted by Huesmann et al. on 329 children aged 6-10 years in the USA was repeated by them 15 years later. According to the results of the study, it was revealed that children who were exposed to violent movies as children resort to violence more in their adulthood and inflict more violence against their spouses. This result applies to both male and female participants (Huesmann, Moise-Titus, Podolski, & Eron, 2003, pp. 208-210). A meta-analysis of 42 independent longitudinal studies involving 4975 participants found that watching violent movies as a child is linked to violent behavior as an adult (Anderson & Bushman, 2002).

On the other hand, depending on socio-cultural variables, the association between violence in movies and violent behavior in youngsters may vary. For example, in a study conducted by Huesmann and Eron (1986) in Israel, it was found that violent movies affect children growing up in the suburbs but not children growing up on farms (as cited in Anderson et al., 2003). The result of the 15-year longitudinal study conducted in Poland by Huesmann and Moise-Titus (1999) is the opposite of the studies conducted in other countries. In the results of the study, it was observed that women who were in adolescence when communism collapsed and was heavily exposed to violent movies showed less violent behavior compared to their peers who were exposed to less violent movies (as cited in Anderson et al. 2003).

Furthermore, the age of the participants can influence the outcome. In a study comparing adults and children, it was observed that the short-term effect of violent movies is higher in adults, and the long-term effect is higher in children (Bushman & Huesmann, 2006).

On the other hand, although there are many research and meta-analysis studies that have concluded that there is a positive correlation between television violence and aggressive behaviors (Browne & Hamilton-Giachritsis, 2005) there are also researches and meta-analysis studies that found the causality relationship to be weak (Freedman, 1984; Savage, 2004, p. 121-122).

For example, in an experimental study of 60 second-grade students, it was revealed that watching violent cartoons does not affect children's aggressive behaviors while playing. However, in general, it was observed that boys are more aggressive than girls (Hapkiewicz & Roden, 1971).

In addition to experimental studies, some studies find the relationship between violent movies and aggressive behavior at a low level. For example, in a three-year study by Milavsky et al. (1982) with 800 high school and 2400 elementary school students, a low level of correlation was found between watching violent television programs and aggressive behavior. Besides, in this study, the relationship between watching violent programs and the aggressive behaviors of high school students is much lower than that of elementary school students. It was observed that the relationship between watching violent programs and the aggressive behavior of girls at the elementary school level was higher than that of boys (as cited in, Yaşar & Paksoy, 2011).

After the association between violent movies and aggression, another subject to be solved in the literature is whether movies influence attitudes. A consensus could not be reached in the studies on this subject. While some studies have found a high or low level of correlation or causal relationship, others have resulted in the opposite. This situation is probably due to the differences in age, gender, education level, country, and period of study.

For example, in an experimental study conducted on university students, it was observed that the experimental group, who watched an anti-nuclear war movie, developed a more intense anti-war attitude compared to the control group (Gunn & Horvath, 1987). On the other hand, in an experiment where people were made to watch a movie against nuclear war, the experimental group's attitudes didn't change much (Schofield & Pavelchak, 1989).

According to the findings of numerous studies, movies with charismatic characters who smoke make young viewers more tolerant of smoking and smokers, increasing their likelihood of smoking. Nevertheless, in an experimental study on 7th and 8th-grade students in Australia, it was revealed that these movies do not affect students' attitudes toward smoking (Charlesworth & Glantz, 2005).

It was found that different results were obtained in two studies examining the effects of movies on attitudes towards minorities. In the first of these, two films showing positive and negative attitudes towards Chinese were watched by children in two different towns in Illinois, USA. While the children who watched movies with a positive attitude toward the Chinese developed friendly attitudes toward the Chinese, the children who watched the other movies developed negative attitudes (Thurstone, 1931). The second one also examined the attitude toward the Chinese minority living in Indonesia. In this study, participants in the experimental group aged 12-25 were shown a movie about the Chinese minority living in Indonesia. But it was clear that the movie didn't help people feel better about the Chinese minority (Nasucha & Sari, 2019).

Some studies suggest that movies affect creating positive views about particular phenomena or people, in addition to studies on the same issue that came to opposing results. For example, a 13-minute film on children with physical disabilities was shown to the experimental group in a study of 227 secondary school students. In the study, it was concluded that the children in the experimental group had more positive attitudes towards students with disabilities (Rizzi, 1984). In an experimental study trying to measure the effect of movies containing characters with AIDS on attitudes towards people with this disease, it was observed that people in the experimental group who watched these movies developed more positive attitudes than those who did not watch them (Kermansaravi, Emani, & Naderifar, 2013). A study also found that when movies are used in group counseling, students become more respectful (Nurdiyanti, Wibowo, & Sugiyono, 2020).

Two studies on the effect of movies on people's political beliefs have reached results that support each other on the same subject. One of them was made using the movie *JFK* (1991), which is about the Kennedy assassination. In the study, while it was seen that the participants in the experimental group who watched the movie were more likely to believe in the conspiracy theories put forward in the movie, it was also seen that they developed an attitude towards politics and decided to vote less and participate in political events (Butler, Koopman, & Zimbardo, 1995, pp. 247-249). The other study was conducted on the movie *Wag the Dog* (1997). According to the findings of the study, moviegoers believed more than the control group that the American government could stage a fabricated war for their political interests in accordance with the scenario (Mulligan & Habel, 2012).

According to some studies, the effect of films is limited to the context of the film and does not cause a general attitude change. For example, in an experimental study to observe whether the negative attitudes of the participants about abortion would change with the effect of the movie, the experimental group watched the movie *The Cider House Rules* (1999), which deals with the story of a woman who becomes pregnant as a result of incest. According to the results of the study, it was seen that the participants in the experimental group developed a positive attitude toward abortion by a woman who became pregnant as a result of incest, but their perspectives towards abortion, in general, did not change (Mulligan & Habel, 2011). So, the movie didn't have an effect that went beyond what it was about.

In another study on attitudes towards rape, it was concluded that the effect of movies on people's attitudes and perceptions vary according to the context. According to the experimental study examining the rape perceptions of university students, male participants who watched movies about a woman raped by her lover found rape reasonable and thought that the woman enjoyed it and got what

she wanted. In the group watching movies about a woman raped by a foreign man, both male and female participants developed negative attitudes towards rape (Milburn, Mather, & Conrad, 2000). Again, in a similar study in which films with sexual violence were watched, it caused the men in the experimental group to accept the rape myths that the woman found what she was looking for and enjoyed it. The same effect did not occur in female participants (Malamuth & Check, 1981).

In some studies conducted, it was found that movies have a weak or no effect on changing attitudes. For example, in an experimental study on high school students, educational films about fire fighting were shown to the experimental group. According to the results of the study, there was no significant change in attitude between the experimental and control groups, even though the experimental group had much more fire extinguishing knowledge than the control group (Bernardi, 1973). In another study, a film about the elderly was shown to university graduates and university students to measure their attitudes towards the elderly before and after the film. It was observed that university graduates had developed more positive attitudes towards the elderly, while the attitude scores of university students had decreased. But for both groups, this effect only appertained to a very short time after the movie (Kubrak, 2020). Finally, in the experimental study conducted on pre-service teachers, environmental education lessons were taught by using films about the environment in the experimental group. In the control group, the movie was not watched. According to the results of the study, there is no significant difference between the two groups in their attitude toward protecting the environment (Benzer, Yıldırım, & Önder, 2019).

The Objective of The Study

Considering the literature, it is seen that the focus of the studies carried out is generally whether the films provide positive attitude change or not. However, the "Do films instill negative attitudes and prejudices in their viewers?" question stands before us as an important problem area. On the other hand, although there are studies with conflicting results in the literature on different age and gender variables, it makes it necessary to include these two variables in the study. Besides, it is predicted that the effect of the movie may vary according to the way it is watched. Watching the movie as a movie will have a short but intense effect, while watching it as a series may have a more comprehensive effect spread over weeks. Therefore, the study aims to determine whether the way of watching movies causes children to develop negative attitudes towards certain groups, taking into account different genders and age groups.

Within this scope, the main purpose of the study is to examine the attitude of kindergarten, 1st, 2nd, 3rd, and 4th-grade students who watched four episodes of *the Boss Baby*² cartoon series at once, watched one episode every week for four weeks, and never watched it towards cats. In line with this main purpose, answers to the following questions were sought:

1. Is there a significant difference in students' who watched four episodes of *the Boss Baby* cartoon at once (Experiment-I), watched one episode every week for four weeks (Experiment-II), and never watched (Control) attitudes towards cats?
2. Does watching four episodes of *the Boss Baby* cartoon series at once (Experiment-I) and watching one episode every week for four weeks (Experiment-II) have a permanent effect on students' attitudes towards cats?
3. Is there a significant difference in the attitudes of the Experiment-I, Experiment-II, and Control groups towards cats by the grade variable?
4. Is the change in the attitude of the Experiment-I, Experiment-II, and Control groups towards cats permanent by the grade variable?

² In all four episodes of *the Boss Baby* cartoon series, cats are shown as treacherous, collaborative, wild, aggressive, two-faced, dangerous and scary.

5. Is there a significant difference in the attitudes of the Experiment-I, Experiment-II, and Control groups towards cats by the gender variable?
6. Is the change in the attitude of the Experiment-I, Experiment-II, and Control groups towards cats permanent by the gender variable?

Method

Study Model

In this study, a pretest-posttest-retention test experimental design with a control group was used. In this sense, a 3x3 split-plot factorial (mixed) design (Experiment-I, Experiment-II, and Control group x pre-test, post-test, and retention test) was used. In the study, the between-group variable was covered by the Experimental-I (watching 4 episodes of *the Boss Baby* cartoon series at once), Experimental-II (watching 4 episodes of *the Boss Baby* cartoon once a week), and Control (no intervention) groups, and the within-group variable by the pre-test, post-test, and retention tests.

Study Group

The study group consists of students from a total of five primary schools, three primary schools from the Üsküdar district of Istanbul and one primary school each from the Küçükçekmece and Sultanbeyli districts. Considering the number of students in the schools, experimental and control groups were formed from each grade by a simple random sampling method as follows.

Table 1. Study Group of the Research

District	School	Grade	Experiment-I group	Experiment-II group	Control Group
Üsküdar	School 1	Kindergarten	1 class	1 class	1 class
		1. Grade	1 class	1 class	1 class
		2. Grade	1 class	1 class	1 class
		3. Grade	1 class	1 class	1 class
		4. Grade	1 class	1 class	1 class
Üsküdar	School 2	Kindergarten	1 class	1 class	1 class
		1. Grade	1 class	1 class	1 class
		2. Grade	1 class	1 class	1 class
		3. Grade	1 class	1 class	1 class
		4. Grade	1 class	1 class	1 class
Üsküdar	School 3	Kindergarten	1 class	1 class	1 class
		1. Grade	1 class	1 class	1 class
		2. Grade	1 class	1 class	1 class
		3. Grade	1 class	1 class	1 class
		4. Grade	1 class	1 class	1 class
Küçükçekmece	School 4	Kindergarten	2 class	2 class	2 class
		1. Grade	2 class	2 class	2 class
		2. Grade	2 class	2 class	2 class
		3. Grade	2 class	2 class	2 class
		4. Grade	2 class	2 class	2 class
Sultanbeyli	School 5	Kindergarten	2 class	2 class	2 class
		1. Grade	2 class	2 class	2 class
		2. Grade	2 class	2 class	2 class
		3. Grade	2 class	2 class	2 class
		4. Grade	2 class	2 class	2 class
Total			35 class	35 class	35 class

As shown in Table 1, 2000 volunteer students participated in the research by completing the pre-test. However, students who watched the movie incompletely, even for a single episode during the process, and did not complete one of the post-test or retention tests, were excluded from the study. For this reason, the study group for the research consisted of 1398 students. There were 439 (31.4%) students in the Experiment-I group, 511 (36.6%) students in the Experiment-II group, and 448 (32%) students in the control group. Of the participants, 715 (51.1%) were girls, and 683 (48.9%) were boys. Of the students in the study group, 99 (7.1%) were studying in kindergarten; 326 (23.3%) were in 1st grade; 336 (24%) were in 2nd grade; 319 (22.8%) were in 3rd grade, and 318 (22.7%) were in the 4th grade.

Data Collection Tool

The "Attitude towards Cats Scale" developed by the researcher for this study was used in the study to measure students' attitudes toward cats.

A 12-item item pool was generated first when designing the Attitudes towards Cats Scale. These items were examined by seven classroom teachers who were in graduate education. The teachers stated that the four items could not be fully understood by the children. These items were edited in line with the recommendations of the teachers. Besides, two more items recommended by the teachers were added to the scale. In this way, a 14-item draft scale was developed.

This developed draft was applied to 84 students studying in the 1st, 2nd, 3rd, and 4th grades. In line with this pilot application, it was determined that there was no item that the students misunderstood or did not understand. No problematic items were found in the item analysis.

Data for the Attitudes Toward Cats Scale were collected from 468 students in kindergarten, 1st, 2nd, 3rd, and 4th grades in several places in Turkey. Kindergarten students were assisted in filling out the scales by their parents. As a result of the factor analysis, one item was taken off the scale because it overlapped with another, one item had a low factor load, and one item could not stand alone as a sub-dimension.

Finally, the scale, which was drawn up in accordance with the 3-point Likert type, consists of one dimension and 11 items. Children marked "Yes" if they thought the statement in the scale item was appropriate for them, "No" if they did not think so, and "Maybe" if they thought it was partially appropriate. Yes, Maybe, and No answers were scored as 3-2-1, respectively.

According to the results of the exploratory factor analysis performed to calculate the construct validity of the scale, it was determined that the common factor variances of all the items in the scale were between .48 and .73. Single dimension that makes up the scale explained 35.001% of the total variance.

Cronbach's Alpha reliability coefficient value, shows how consistent a single measurement made with the measurement tool is within itself, without the need for more than one application to test the reliability of the scale (Can, 2014), is 0.792. Cronbach's Alpha coefficient between $0.60 \leq \alpha \leq 0.90$ is considered quite reliable (Tavşancıl, 2006). As can be seen, the scale is quite reliable.

Data Collection

The study was conducted in accordance with the permission numbered E-59090411-20-23364060 of the Istanbul Provincial Directorate of National Education and permission numbered 83123 of the Marmara University Institute of Educational Sciences Research and Publication Ethics Committee. First of all, it was stated to the parents who were informed about the research that participation in the research was voluntary, and only students with parental consent participated in the study. Before the experimental study, the "Attitudes towards Cats Scale" was applied to the students to record their pre-test scores. The students in the Experimental I group watched 4 episodes of *the Boss Baby* cartoon series at once, while the students in the Experimental II group watched one episode a week for 4 weeks. The students in the control group had never watched *the Boss Baby* cartoon. Students in the Experimental I group completed the post-test form after watching the movie, and students in the Experimental II and Control groups did the same at the end of 4 weeks. The retention test was performed 1 month after each group's own post-test. The "Attitude Scale towards Cats" was used for the post-test and permanence test.

Data Analysis

Before moving on to the data analysis, it was checked to see if the prerequisites for completing the parametric test were met. The students in the randomly selected control and experimental groups are educated in different classes. Consequently, the requirements for each data set to be independent of the others and to be chosen at random from the universe were met. A Kolmogorov-Smirnov test was used to determine whether the pre-test, post-test, and retention test scores of the Experiment-I, Experiment-II, and Control groups had a normal distribution, and some deviations from normal were found in some groups ($p.05$). But Independent Samples t-test and One-Way Analysis of Variance (ANOVA) are very powerful tests. Except for extreme deviations, sample sizes greater than 15 produce valid results in circumstances when the distribution does not show normal characteristics (Green & Salkind, 2005). Since the number of each group was over 400, it was accepted that the assumption of normal distribution was met.

Since the parametric test conditions were met, One-Way Analysis of Variance (ANOVA) was used to test whether there were significant differences between the difference scores of the groups, and independent samples t-test was used to determine whether there was a significant difference between the difference scores according to the gender variable. Analysis of Covariance (ANCOVA) could not be performed because the homogeneity of the regression lines in the groups was not met.

Study Limitations

Due to the COVID-19 pandemic, study data were collected through online forms, the link of which was sent to the mobile phones of the parents. It was not possible to collect additional qualitative data through face-to-face interviews. It is thought that it would be beneficial to support quantitative data with interview notes to be made with teachers and parents in future studies.

Results

In this section, the answers to the determined sub-objectives of the study were sought, the data were analyzed, and the following findings were obtained.

1. *Is there a significant difference in students' who watched four episodes of the Boss Baby cartoon at once (Experiment-I), watched one episode every week for four weeks (Experiment-II), and never watched (Control) attitudes towards cats?*

Table 2. ANOVA results for the differentiation between the pretest-posttest difference scores of the experimental I, experimental II, and control groups

Source of Variance	Sum of Squares	df	Mean Square	F	p
Between-group	0.058	2	0.029	1.153	0.316
Within-group	35.037	1395	0.025		
Total	35.095	1397			

As indicated in Table 2, no significant difference was observed in the pretest-posttest difference mean scores of the experimental I, Experiment-II and control groups compared with a one-way analysis of variance (ANOVA) ($p>.05$). This shows that there is no difference in developing a negative attitude towards cats between watching the *Boss Baby* cartoon series as a movie at once, watching it in four episodes like a TV series, and not watching it at all. Therefore, negative cat images in *the Boss Baby* cartoon do not affect children's positive attitudes towards cats.

2. Does watching four episodes of the Boss Baby cartoon series at once (Experiment-I) and watching one episode every week for four weeks (Experiment-II) have a permanent effect on students' attitudes towards cats?

Table 3. ANOVA results for the differentiation between the posttest-retention test difference scores of the experimental I, experimental II, and control groups

Source of Variance	Sum of Squares	df	Mean Square	F	p
Between-group	0.002	2	0.001	0.050	0.951
Within-group	33.411	1395	0.024		
Total	33.413	1397			

As indicated in Table 3, no significant difference was observed in the posttest-retention test difference mean scores of the experimental I, Experiment-II and control groups compared with a one-way analysis of variance (ANOVA) ($p > .05$). This demonstrates that for the three groups, there is no significant difference between the post-test scores obtained immediately after the study and the retention test scores obtained one month later.

3. Is there a significant difference in the attitudes of the groups towards cats by the grade variable?

Table 4. ANOVA results for the differentiation between the pretest-posttest difference scores of the groups by the grade variable

Grade	Source of Variance	Sum of Squares	df	Mean Square	F	p
1. Grade	Between-group	0.016	2	0.008	0.263	0.769
	Within-group	9.620	323	0.030		
	Total	9.636	325			
2. Grade	Between-group	0.067	2	0.033	1.467	0.232
	Within-group	7.552	333	0.023		
	Total	7.618	335			
3. Grade	Between-group	0.011	2	0.006	0.287	0.751
	Within-group	6.301	316	0.020		
	Total	6.312	318			
4. Grade	Between-group	0.010	2	0.005	0.181	0.835
	Within-group	8.350	315	0.027		
	Total	8.360	317			
Kindergarten	Between-group	0.144	2	0.072	2.361	0.100
	Within-group	2.931	96	0.031		
	Total	3.075	98			

As shown in Table 4, no significant difference was observed in the mean scores of the pretest-posttest scores of the kindergarten, 1st, 2nd, 3rd, and 4th-grade students compared with a one-way analysis of variance (ANOVA) ($p > .05$). Considering the different grade levels, this shows that watching *the Boss Baby* does not make a difference in terms of developing negative attitudes towards cats.

4. Is the change in the attitude of the groups towards cats permanent by the grade variable?

Table 5. ANOVA results for the differentiation between the posttest-retention test difference scores of the groups by the grade variable

Grade	Source of Variance	Sum of Squares	df	Mean Square	F	p
1. Grade	Between-group	0.062	2	0.031	0.973	0.379
	Within-group	10.231	323	0.032		
	Total	10.293	325			
2. Grade	Between-group	0.041	2	0.021	0.908	0.404
	Within-group	7.581	333	0.023		
	Total	7.622	335			
3. Grade	Between-group	0.023	2	0.011	0.521	0.594
	Within-group	6.837	316	0.022		
	Total	6.859	318			
4. Grade	Between-group	0.013	2	0.007	0.324	0.724
	Within-group	6.439	315	0.020		
	Total	6.452	317			
Kindergarten	Between-group	0.107	2	0.053	2.509	0.087
	Within-group	2.042	96	0.021		
	Total	2.149	98			

As shown in Table 5, no significant difference was observed in the mean scores of the posttest-retention test scores of the kindergarten, 1st, 2nd, 3rd, and 4th-grade students compared with a one-way analysis of variance (ANOVA) ($p > .05$). This demonstrates that for the grade level, there is no significant difference between the post-test scores obtained immediately after the study and the retention test scores obtained one month later.

5. Is there a significant difference in the attitudes of the groups towards cats by the gender variable?

Table 6. Independent Samples t-test results for the differentiation between the pretest-posttest difference scores of the groups by the gender variable

Group	Gender	N	Mean	S	t	df	p
Experiment-I	Female	213	0.0205	0.14552	1.727	437	0.085
	Male	226	-0.0068	0.18260			
Experiment-II	Female	263	-0.0228	0.14444	-2.224	509	0.027
	Male	248	0.0070	0.15815			
Control	Female	239	-0.0068	0.15531	-0.108	446	0.914
	Male	209	-0.0052	0.16210			

As indicated in Table 6, it was observed that there was no significant difference in the mean of the pretest-posttest score differences of the male and female students compared with the independent samples t-test in the Experiment-I and Control groups ($p > .05$). It was observed that there was a significant difference between male and female students in the Experiment-II group ($p < .05$). This shows that the female students who watched *the Boss Baby* cartoon in the form of a TV series for four weeks developed more negative attitudes towards cats compared to the boys in the same group.

6. Is the change in the attitude of the groups towards cats permanent by the gender variable?

Table 7. Independent Samples t-test results for the differentiation between the posttest-retention test difference scores of the groups by the gender variable

Group	Gender	N	Mean	S	t	df	p
Experiment-I	Female	213	-0.0051	0.14713	-0.043	437	0.966
	Male	226	-0.0044	0.18743			
Experiment-II	Female	263	-0.0162	0.15346	-1.556	509	0.120
	Male	248	0.0040	0.14033			
Control	Female	239	-0.0004	0.14081	0.437	446	0.662
	Male	209	-0.0065	0.15669			

As shown in Table 7, it was observed that there was no significant difference in the mean of the posttest-retention test score differences of the male and female students compared with the independent samples t-test in any of the groups ($p > .05$). This demonstrates that for the gender variable, there is no significant difference between the post-test scores obtained immediately after the study and the retention test scores obtained one month later.

Discussion and Conclusion

According to the results of the study, it was revealed that exposure to negative cat images in *the Boss Baby* cartoon in the form of a movie or a TV series for four weeks did not have any effect on the attitude of children towards cats. When the kindergarten, 1st, 2nd, 3rd, and 4th-grade students are evaluated separately, there is no significant difference between the groups. Therefore, depending on the age factor, the film does not have any attitude-changing effect. In terms of gender, there was a significant difference only in the Experiment-II group, who watched *the Boss Baby* cartoon as a TV series. It was observed that female students in this group developed more negative attitudes than male students. But this differentiation was temporary. According to the results of the retention test, as in other groups, no significant difference was found between male and female students in this group.

According to many studies in the literature, it may seem surprising that movies that seem effective in developing positive attitudes are ineffective in developing negative attitudes. On the other hand, given the effect of film violence on audience aggression or the positive link between these behaviors, it is reasonable to assume that bad stereotypes in films will cause viewers to adopt negative attitudes. But in this study, the contact hypothesis can explain why *the Boss Baby* cartoon didn't make people dislike cats, which was the opposite of what was expected.

According to the contact hypothesis first put forward by Gordon Allport, when people come into contact with outgroup members in their social lives, they develop positive attitudes towards them (Allport, 1954). In the following years, many studies were conducted on the contact theory, and the theory was developed. For example, in a study conducted by Christian and Lapinski (2003) on 132 American high school students in the USA after the September 11 attacks, it was found that students who have Muslim friends are less affected by negative Muslim stereotypes in the media than those who do not. Still, in a study conducted with 372 university students in the USA, it was revealed that contact with Muslims reduces negative attitudes towards Muslims (Abrams, McGaughey, & Haghghat, 2018). The study by Pickel and Öztürk (2018), in which they compared European countries in terms of Islamophobia, revealed that Islamophobia is seen more intensely in Eastern European countries with fewer Muslim minorities and limited access to Muslims than in Western European countries that have the opportunity to have intense contact with Muslims.

In a study conducted by Lee, Farrel, and Link (2004) on 1388 adults in the USA, it was revealed that people who have a relative or friend homeless have more positive attitudes towards the homeless. Similar studies have been done for other countries in the world. For example, McLaren (2003) has found that contact with immigrants in 17 European countries reduces prejudice against immigrants. Another

study of 6,000 people on prejudice against immigrants in Belgium, the Netherlands, France, and Sweden came to the same conclusion (Coninck, Rodríguez-de-Dios, & d'Haenens, 2020).

Two studies conducted in Turkey also shed light on the subject. The first found that cities with a dense Syrian immigrant population, such as Gaziantep, acquired a more favorable Syrian attitude than those with a low Syrian rate, like Istanbul and Diyarbakir (Dal & Tokdemir, 2021). The other study showed that as the frequency of contact with Turks increases, foreign students living in Turkey have more positive attitudes towards the local people, and they integrate into society more easily (Koçak & Temel, 2021).

In addition to these studies, meta-analysis studies that look at the contact hypothesis from a variety of angles have come up with data that support it. In a meta-analysis study conducted by Pettigrew and Tropp (2006) on 515 studies, it was revealed that establishing contact with the outgroup prevents negative attitudes. It was stated that 24 out of 27 recent studies reviewed by Paluck, Green, and Green (2019) support the contact hypothesis. In the meta-analysis study conducted by Zhou, Page-Gould, Aron, Moyer, and Hewstone (2018) on 115 studies, it was revealed that even having a friend who made friends with the outgroup decreased negative attitudes towards the outgroup.

The fact that sly, treacherous, aggressive, deceptive, dangerous, and evil cat images in *the Boss Baby* cartoon did not affect children's attitudes towards cats in this study can also be explained by the contact hypothesis because there are thousands of cats on the streets in the city of Istanbul, where the study was conducted. These cats have been adopted by the people of Istanbul as pets rather than stray cats. People adore cats and create cat houses for them, provide food and water, and demonstrate their affection by stroking and playing with them. Cats also feel close to people and respond to the love of everyone, children and adults. Unlike the cartoon, children are in constant contact with their cute, playful, docile, and safe cat friends. 91% of the 2000 children who participated in the pre-test of the study answered yes to the question "Do you like cats?" which is a result of this positive contact. Therefore, the fact that *the Boss Baby* cartoon did not have any effect on children's attitudes towards cats as a result of the study suggests that it may be since the study was conducted in a city where positive contact with cats was constantly established.

This study demonstrates that the media's influence on children's attitudes is limited and that its potency varies depending on information, emotions, beliefs, and experiences gained in daily life. To reveal this result more clearly, it is thought that it would be useful to repeat a study on the effect of the *Boss Baby* cartoon on the attitude towards cats in a country where cats are not common and compare the results of that study with the results of this study.

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Annex 1. Attitudes Towards Cats Scale

Attitudes Towards Cats Scale	Yes 	Maybe 	No 
I like cats.			
I like to play with cats			
Cats are scary.			
Cats are cute.			
I would like to have a cat in my house.			
Cats are unreliable.			
Cats are friends of humans.			
I don't like cats			
Cats are bad.			
I like watching cat videos.			
Cats hurt people.			