




nesta

Do Subtitles Compromise the Entertainment Value of Children's TV?

February 2021

[nesta.org.uk](https://www.nesta.org.uk)

 [@nesta_uk](https://twitter.com/nesta_uk)

Why did we do this work?

- Literacy matters
- [Research shows](#) same-language subtitles can help children learn to read while doing something they love: watching TV
- While we might wish kids didn't watch so much TV, the reality is that they do spend at least some of their time doing so
- Given all this, turning on TV subtitles as the broadcasting default could lead to improvements in childhood literacy
- **So what's the blocker?** In the absence of evidence, Broadcasters tend to assume that subtitles negatively impact viewing experience -- turning on their subtitles means running the risk of losing viewers
- This question of whether subtitles negatively impact viewing experience is one we can test! And that's why we did this work.

The Experiment

? What did we do?

- Compared children's enjoyment of cartoons with and without subtitles using a range of measures
- Our primary outcome of interest was whether the child said they would like to watch "another video like the one [they] just saw" at the end
- Our hypothesis was that the subtitles would not alter viewing experience and that we would see no difference in enjoyment ratings between children who saw subtitled content and those who did not.



A randomised controlled trial

In which viewers were assigned at random to content with or without subtitles.



3,000 children aged 6-11

Previous research suggests this age range is most likely to benefit (in terms of literacy improvement) from same language subtitles.

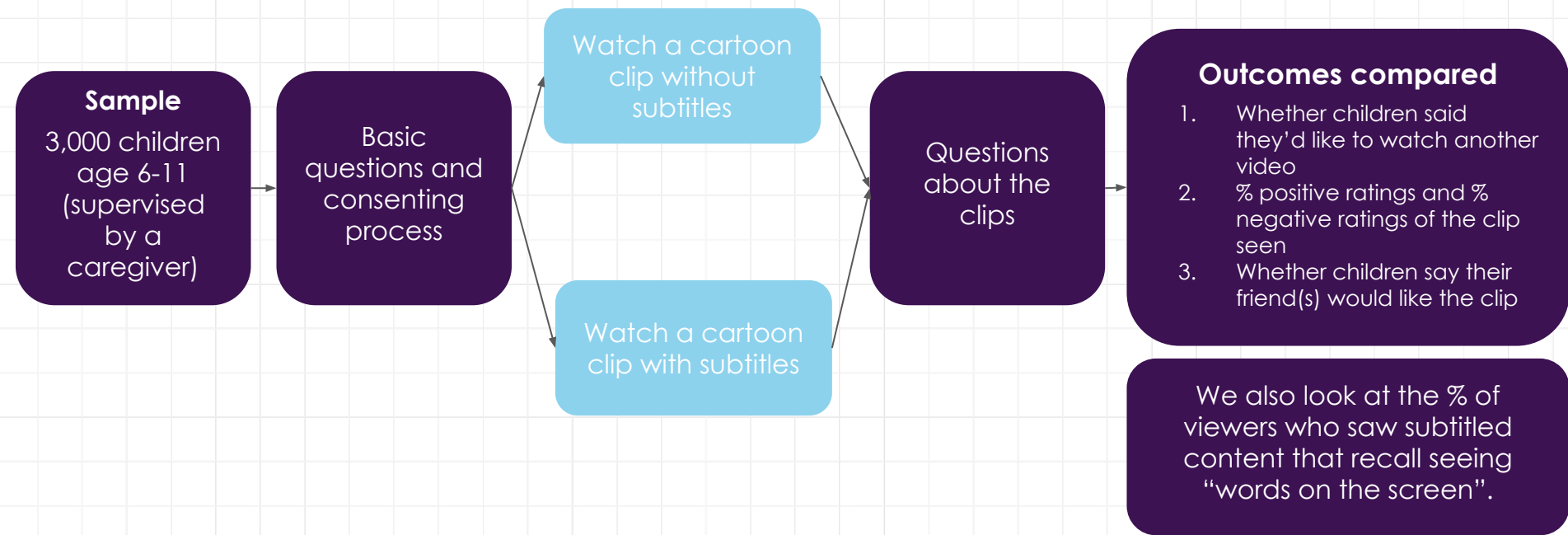


Cartoons with and without subtitles

There were two different clips: one targeting a male audience, and one female. Children selected which they preferred. If they chose "I don't mind" they saw one at random.



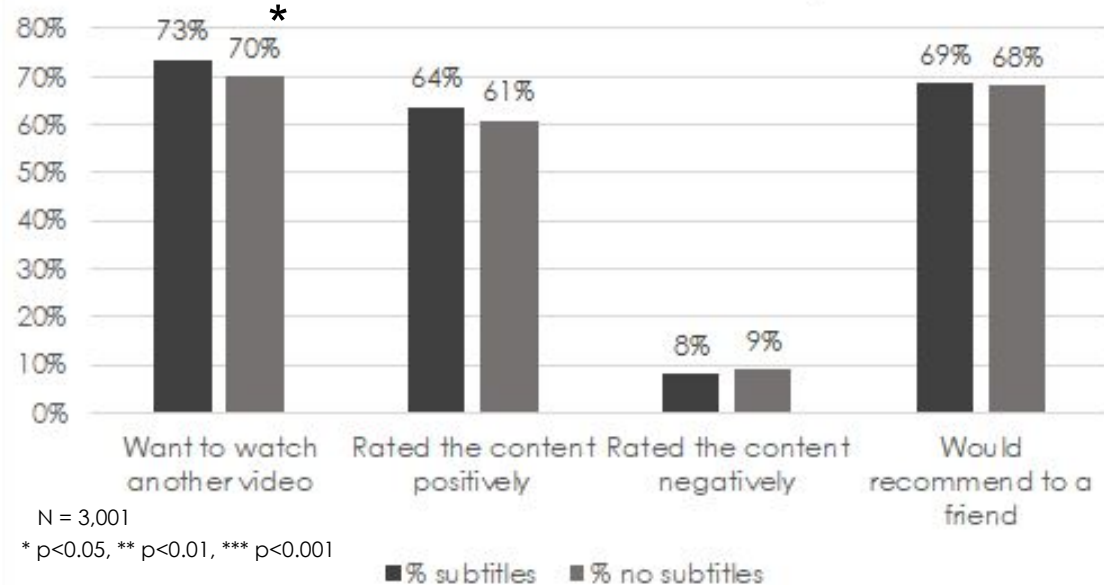
Overview of the Experiment



The Results

Children who saw subtitled content were more likely than those who did not to say they wanted to watch another video clip

Differences Between Groups



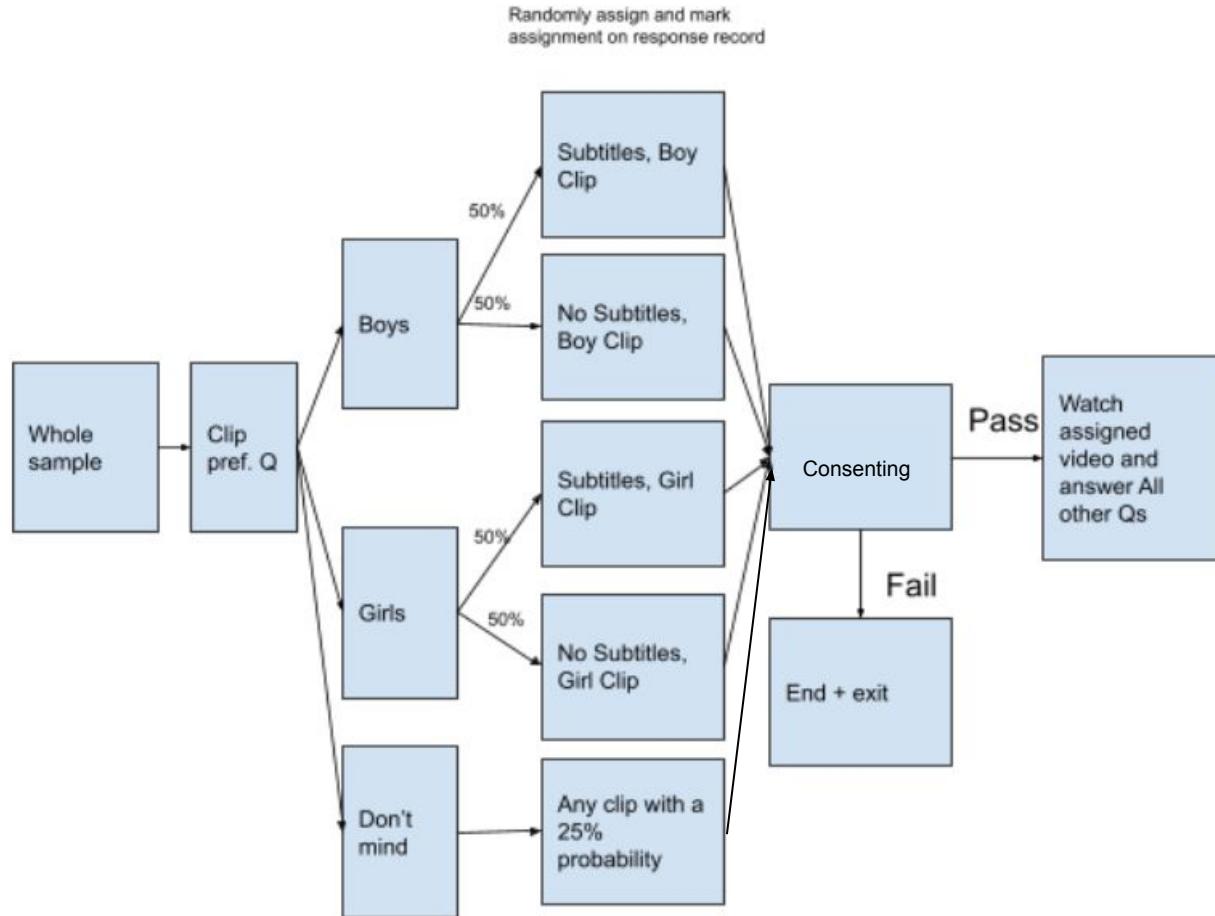
Other findings

- The non-subtitled content scored less well on every measure than subtitled content (this difference was not significant for anything other than our primary measure)
- 15% of children who saw subtitled content did not correctly recall that there were words on the screen.
- 9% of children who saw content without subtitles incorrectly reported recalling words on the screen.
- Caveat: the random allocation of participants was not as close to 50/50 as we'd expect. All balance checks reassure us the groups are comparable but this is worth noting.

So what...? We are told the results of our two experiments in this area have already persuaded the BBC, Sky, and Amazon Prime to drop their concerns and accelerate adoption of subtitles by default on kids' content. Time will tell!

Appendix

Detailed design of the experiment



- Since the cartoon company we worked with did not have gender-neutral shows for the age range we were looking at (6-11 year olds) we had one clip designed for boys and one clip designed for girls
- We let users choose which clip they saw rather than assigning them based on their sex/ gender
- Users could choose to watch either video or say that they don't mind
- The chart shows how assignment happened (at random) in each scenario
- All analysis was pooled based on subtitles/ no subtitles

The cartoon clips used



A clip from [Johnny Test](#) (largely watched by boys)



A clip from [Sabrina](#) (largely watched by girls)

Analytical Outputs

Dependent variable:

WatchMore

Subtitles 0.034**
 p = 0.041**
 (0.016)

Constant 0.703***
 p = 0.000***
 (0.012)

Observations 3,001
R2 0.001
Adjusted R2 0.001
Residual Std. Error 0.448 (df = 2999)
F Statistic 4.182** (df = 1; 2999)

Note: *p<0.1; **p<0.05; ***p<0.01

R Code (all models):

```
mydata <- read.csv("TrialData.csv")
```

```
Model1 <- lm(WatchMore~Subtitles,  
data=mydata)
```

```
Model2 <- lm(Positive~Subtitles, data=mydata)
```

```
Model3 <- lm(Negative~Subtitles,  
data=mydata)
```

```
Model3 <- lm(Friendcode~Subtitles,  
data=mydata)
```

```
library(stargazer)  
stargazer(Model, Model2, Model3, Model4  
type="text", report=('vc*p*s'))
```