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# “Eat plenty of vegetables and drink lots of milk”

How the integration of healthy eating into *Caillou* teaches children everyday knowledge

**This IZI research study involving preschool children investigated the issue of whether, and to what extent, children remember health messages transmitted in – for example – the children’s programme *Caillou*.**

The idea for this research arose from one of those moments in everyday life with children when a parent will be taken aback and speechless, then answers intuitively and later wonders “Where did she get that from?” Mea, 4 years old, looked at a piece of chocolate lying in front of her (she likes chocolate) and asked: “Is chocolate good for you?” Her mother, rather at a loss, replied: “No, actually it’s not. It tastes nice, certainly, but it’s not really good for you.” Mea, in response: “But bananas are good for you, aren’t they?” And when this was confirmed she asked for a banana and kept the chocolate in reserve “for later”.

Identifying what had prompted Mea’s question was a relatively quick matter. A week earlier, the family had watched a *Caillou* episode that dealt with precisely this topic. Asked how she got the idea that bananas are good for you, this 4-year-old said: “I thought of it myself.” Even when prompted with the possibility that she might have seen it on *Caillou*, she said no. It was this “learning without noticing” that we subsequently fol-

lowed up in detail in the IZI studies involving preschool children.

## *Caillou* on TV

The *Caillou* animated series is based on the picture books with the same title, and has been produced in Canada since 1998. To date, 131 episodes have been made, each running for 11 minutes. The series centres on 4-year-old Caillou. He lives with his father and mother and 2-year-old sister Rosie in Canada. The grandparents live nearby, and he has many friends at preschool.

Each episode consists of 2 stories about everyday life. Caillou might forget about a toy car while enjoying an ice-cream and then might have to remember where he left it; or a member of the fire brigade visits the nursery school and Caillou not only has the wonderful experience of riding on the emergency vehicle, but also has to find a way of sharing the fireman’s helmet with his best friend.

## *Warm, mutually regardful atmosphere*

The appeal of the *Caillou* series lies in its warm, mutually regardful atmosphere. Caillou has questions and problems, faces everyday challenges, and learns about the myriad ways in which people differ – Sarah, for instance, whose family lives in China, or the wheelchair-bound girl

at the swimming pool who teaches him how to dive. The programme sets out to combine attractive stories, told from the child’s perspective, with socially positive values and messages.

In episode 73 – the one seen by 4-year-old Mea – advice on healthy nutrition and healthy lifestyle was deliberately incorporated into the script. Its basic message was that to grow tall and strong you must eat and drink healthy things like bananas and milk, and also take lots of exercise and get plenty of sleep.

## The study

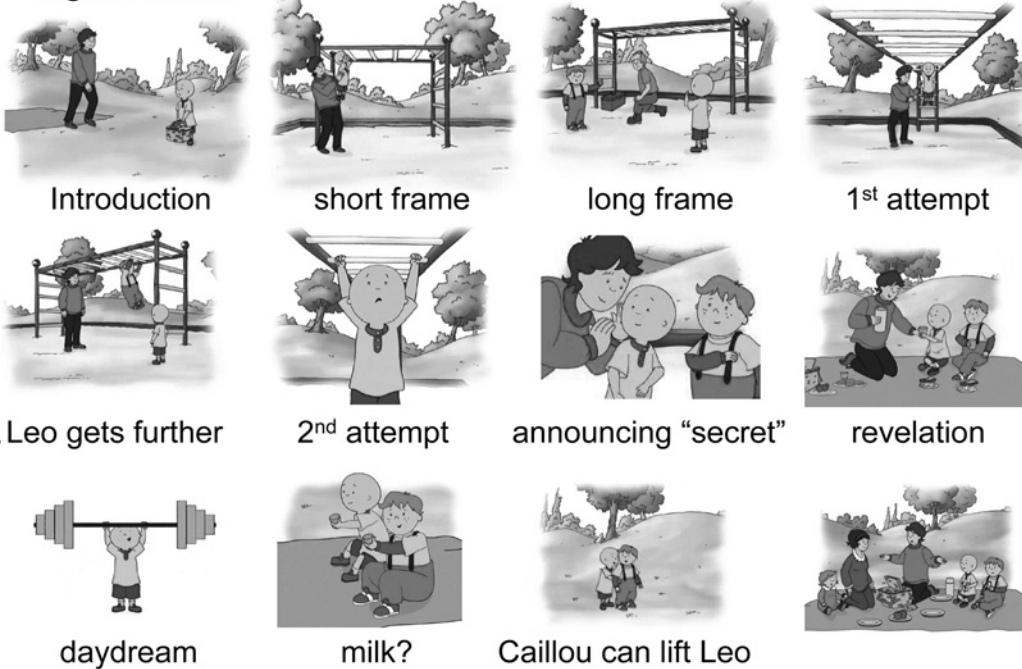
We began with a small-scale reception study in Germany focusing on the following question: do children remember what they are told about how to grow tall and strong?

20 nursery-school children (group A) saw episode 73 and were interviewed immediately afterwards, one-on-one. They were asked, for example, what one needs to do to grow tall and strong. Their answers were compared with answers from a control group. What interested us then was the positioning of the message in the dramaturgical structure of the episode. We created a “re-cut” version of the programme, showed it to 22 children (group B), and asked them exactly the same questions.

The children’s answers were evaluated whether they were able to name

# Caillou Episode 73

## Original version



Screenshots from Caillou © SuperRTL

Ill. 1: *Caillou* episode 73 original version: health message comes near end of story

specific words or word-fields named in the programme, such as healthy eating, individual food items, sleep and lots of exercise – and whether there were differences between the groups. The study is based on a specific theory of action-oriented reception research. Using this approach, it describes only a very small area of learning, namely the remembering of words and contexts.

### Caillou in 2 variants

#### Caillou, episode 73, original version "A little bit stronger every day"

In this sequence, Caillou goes off for a picnic with his family and his friend Leo (see ill. 1). Before they sit down to eat, the 2 boys and Caillou's father amuse themselves on the playground. On the 4-rung climbing frame, Caillou manages to swing himself along the whole length, suspended by his arms. He visualises himself as an ape, and this is shown on screen. In this way he manages all 4 rungs. His fa-

ther and Leo think this is great. And now the 3 notice that workmen nearby are putting together a new climbing frame, even longer and more testing than the first. Caillou again makes it as far as the fourth rung, but then his strength gives out. Leo manages one rung more. Caillou insists on trying again, but once again his arms hurt too much, and he has to give up. A gentle, understanding voiceover comments on his motivation and his feelings. Caillou is sad because he has not been able to swing along the full length. His father points out sympathetically that this doesn't matter, Caillou just needs to grow a little bit taller and stronger. Both boys respond at once, begging the father to tell them "how we can get tall and strong". The father dresses up the answer as a big secret, not revealing it until the children have asked several times. Back together on the picnic rug, he tells them: "To grow tall and strong, you have to eat healthy things like vegetables and fresh fruit and sandwiches. And you must also drink healthy things, like

milk and fruit juice." While listing these food items, the father points at the bananas that Caillou and Leo are holding, and hands them a sandwich each. Then he pours out milk for them. Caillou interrupts, laughing: "But Daddy, I know all that already!" The father continues: "And another thing that helps is to get a lot of sleep at night, and to take lots and lots of exercise during the day. And lots of exercise simply means you spend lots of time just playing!" Leo responds: "Well, then it's really simple to grow

strong! Those things you have to do are my favourite things!" And Caillou: "Me too! I am going to grow very, very, very strong!"

There follows a short daydream sequence in which Caillou pictures himself effortlessly lifting an outsized dumbbell. As he returns to reality his father is again offering milk all round, and the boys again hold out their mugs with alacrity. Caillou's little sister Rosie too wants some more, holds out her mug and says "Moo!". The others all laugh with her. A little later, when the boys are playing together in the field, Caillou lifts his friend, bigger and heavier than himself, off the ground as part of the game. The female narrator's friendly voice comments: "Caillou knew it was going to be a long time before he got really big and strong. But he was determined to get a little bit stronger every day."

#### Caillou, episode 73, revised version

In the "re-cut" version, the nutrition message is not the solution to the problem as it was in the original, but

# Caillou Episode 73

## Re-cut version



Introduction



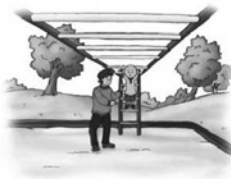
announcing "secret"



daydream



short frame

long frame &  
1<sup>st</sup> attempt

Leo gets further

2<sup>nd</sup> attempt

ending

Screenshots from *Caillou* © SuperRTL

Ill. 2: *Caillou* episode 73 in revised form: health message comes at opening of story

comes in the second scene, initiating the sequence's action (see ill. 2). The family arrives for its picnic, and the father reveals to Caillou the secret of growing strong. Caillou then daydreams about his great strength. The scene with his failure on the climbing frame follows only now. The ending, as in the original, shows him lifting his friend Leo off the ground.

## Results

### *Do children pick up and remember verbal formulations from the programme?*

We asked 64 children the question: "What can you do to grow tall and strong?"

42 children had watched one of the 2 variants of the *Caillou* programme, and 22 children (the control group) had watched other children's programmes in which nutrition and health played no part. The control group children mostly (60 %) responded to the question with a "Don't know". They did not possess the spontaneous, verbally communicable knowledge that would

have enabled them to answer this not particularly everyday question. Instead, they replied using such formulations as "painting" (Jonas, 3 years old), "if you work hard" (Severin, 5 years old), "grow tall, get tall" (Franziska, 4 years old). 5 children specified aspects of nutrition and exercise, e.g. "eating Kellogg's cereals", "eating vegetables", "sliding down a pole, eating toast and Nutella", "dancing, and bouncing on a trampoline". This knowledge is presumably based on everyday experience and on advertising (Kellogg's breakfast cereals and breakfast spread Nutella). None of the children used the word "healthy", and none used the expression "plenty of sleep".

Children who had watched a version of *Caillou* episode 73, "A little bit stronger every day", replied with formulations like "eating a lot of bread, milk, grape juice and healthy food" (Lena, 4 years old), or "You have to eat a lot and drink things that are good for you and take a lot of exercise" (Tim, 4 years old). But there were also very typical small-child answers such

to the everyday real-life television experience. Even with that proviso, the findings are at least an indication that we are looking at a successful mode of communication of socially desirable content.

### *Do differences show up depending on where the message is integrated into the script?*

Initially, from the results of the quantitative comparison of the child groups A and B who had seen *Caillou* in one or another of the 2 versions, there were no obvious differences to be read off. A similar number of children in each group mentioned at least one of the foods named in the programme, and the same applied to mentions of both sleep and exercise. In both groups the most frequent mentions were of foods. After the re-cut variant, there was rather less frequent mention of foods, of exercise rather more. Given the small sample, however, this is in no way significant (see fig. 1).

However, the qualitative analysis yielded discernible patterns. Children who had watched the original episode

as "having a birthday party" (Julia, 3 years old). About half the 42 children, after watching the programme, mentioned at least one of the healthy foods specified in the programme; sleep and exercise respectively were mentioned by about 20 % in each case (see fig. 1).

The findings speak for themselves. The words used by Caillou's father become part of the interviewed 3- to 5-year-olds' active knowledge. It is an experimental setting, and to that extent has only limited application

would in some cases reproduce wording used in the script. For instance, 5-year-old Sandra answered: “Eating lots of healthy things. [...] Vegetables, fruit, bread and milk and water and juice.” And Leon (4 years old): “You have to eat a lot and drink a lot, and sleep a lot at night and eat a lot of things that are good for you and drink something good.” The children of group A (original version) kept more closely to the media script.

Among group B children, frequency of mention of individual food items that had been specified during the sequence was almost exactly the same as in group A; however, group B children were more likely to combine things mentioned in the programme with other things that had not been mentioned. For example, Tom (5 years old) replied as follows: “Eating. [...] Vegetables, bread, meat, drinking milk, cocoa and juice, and eating yoghurt”. Meat, cocoa, and yoghurt had not been mentioned in *Caillou*. Similarly, Marie (5 years old) included spaghetti in her answer: “Eating a lot and drinking a lot. [...] You have to eat spaghetti, and vegetables.” Or the focus might be on the quantity and not the quality of the food: “Eating a lot and sleeping a lot and running around a lot and drinking a lot”

(Anna, 3 years old). The formulations used by group B here resemble those of the control group, except for being supplemented by words from the programme.

We suggest the following connection: the children already have a subjective theory with regard to the topic, and at least some are able to articulate it spontaneously. The significant elements here are dimensions such as “a lot” and positive food enjoyment experiences, such as with pizza and spaghetti that are easily remembered and have been endorsed by parents as potentially valuable foods. However, there were also brand and product names, and their significance should probably be traced back to advertising.

These, then, are the pre-existing subjective concepts, and the words and word-fields from the programme are now added in. In this process it often happens that the “approved” foods mentioned in the programme are mingled with generally undesirable answers like Nutella, pizza, spaghetti, or cocoa. In group A (original version), this virtually never occurred. Here the messages presumably are filed differently in the knowledge storage system. A qualitative difference emerged, one that was also visible in

quantitative terms. The group A children used the word “healthy” more frequently. 40 % of group A children referred to the need to eat or drink healthily, compared with only 14 % of group B. The general tendency was for the term “healthy” to be treated as a broad, inclusive category that would then be stretched to cover the individual foods mentioned. This would suggest that in the original version, in which the health message in effect represents the final resolution of the action, the children have grasped this in an organised way and conceptualised it, as opposed to simply adding new words to words already stored. In other words, they are able to make better, more systematic use of the message.

A further phenomenon is that milk as a food that promises increased strength was mentioned by twice as many children in group A as in group B. In the control group, no child mentioned this. In each variant of the episode milk features twice, either shown being consumed, or in the form of a verbal mention.

Both times milk is linked in the artwork, in a pedagogically skilful manner, to positive fictional figures and their actions, having had verbal mention just previously: during the father’s remarks, and immediately after Caillou’s daydream about being strong. In response to the father’s invitation, “Would anyone like some more milk?”, Leo and Caillou eagerly clamour “Me, me, me!”. And even Caillou’s little sister holds out her mug, shouts “Moo” and laughs. Thus the programme’s original version ends harmoniously and on a note of fun. Milk becomes the practical solution to the problem; in addition, it is contextualised in an emotionally positive manner with humour, integrated – cleverly in terms of didactics – into the narrative, with reinforcement by prompt repetition, and emphasised by means of an emotional marker. The foods mentioned are simultaneously visible in the image,

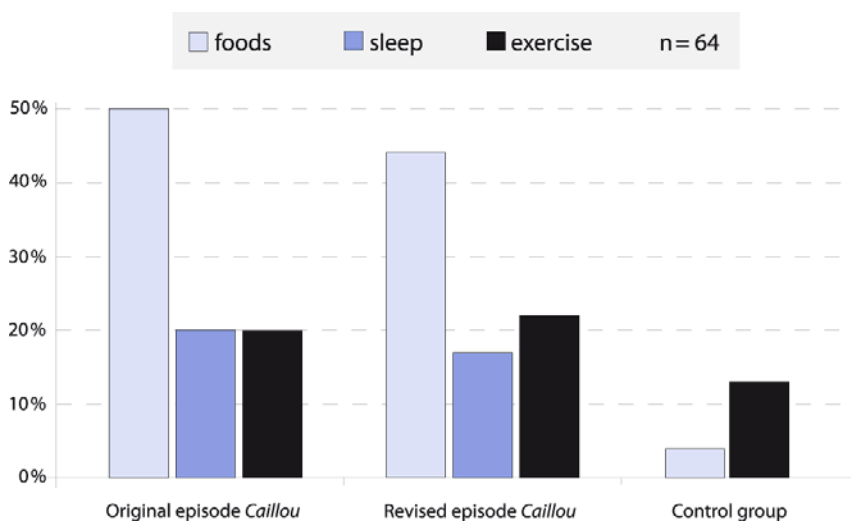


Fig. 1: Question: “What can you do to grow tall and strong?” – Percentage of children naming at least one of the “foods” mentioned in the programme in comparison to naming “sleep” and “exercise”

and indeed milk comes to the fore yet again. It may be supposed that this enhances memorisation of the word. In variant B, the milk-drinking is followed immediately by the scene of failure on the climbing frame. Thus milk is one of the things that are mentioned by the father and help to generate shared humour, but it cannot prevent Caillou's failure to swing himself all the way along the frame. Milk was nevertheless still mentioned by some children though it did not appear to them as an excellent means of becoming tall and strong.

### Discussion of the findings

Why do the children interviewed remember the message in this *Caillou* story almost word-for-word – even in the re-cut variant?

For preschool children the programme as a whole is highly enjoyable. It is narrated consistently from the perspective of a 4-year-old and shows him dealing with the challenges of everyday life. In doing so it introduces basic issues such as being small and growing bigger, and keeps very close to the everyday experiences of preschool children. Also, the educational context depicted is ideal. Children are loved for their own sake, treated with respect, and allowed to develop and explore the world autonomously; and in so doing they gain a sense of their own competence. At the same time, the social framework represented by the adults provides de-

pendable guidance and security counterbalanced by unfailing recognition of the children's perspective and of their desire for autonomy.

Responses to Caillou's feelings either come from the adults in the story or are spoken by the female voiceover. All feedback is approving. This format design establishes optimal conditions for preschool children to enter imaginatively into the action and to learn alongside Caillou. Into this educational context, highly attractive to children, a number of messages have been implanted – with considerable skill in terms of dramaturgically effective integration into the action and of learning-oriented realisation.

### *Caillou's educational context is responsible for the learning benefit*

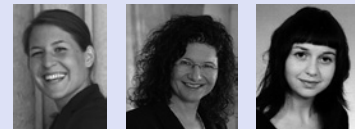
The findings suggest that messages contained in a fictional text such as *Caillou* stand a particularly good chance of becoming integrated into the knowledge resources of preschool children if they are placed at the dramatic climax and contextualised in an emotionally positive way. Additionally, certain words should be presented several times virtually simultaneously in spoken and visual form, and supported by a positive emotional marker. However, this observation can only be generalised with caution: not simply because the diagnostic value of the sample used is limited by size,

middle-class bias etc., but also and more particularly because it is in all probability the educational context depicted by the specific format that makes this learning benefit possible in the first place.

### Postscript

Asked once more, 6 months later, if she knows what makes children grow up tall and strong, Mea now replied with a "Don't know". But she is still convinced that bananas are good for you, and emphasises that she prefers bananas to chocolate. Although not exactly true, that is still an astonishing statement. ■

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