

Playful Subversions: Young children and tablet use

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Abstract

Drawing on data from empirical studies of small children (4- to 8-year-olds) using tablets in educational settings, we explore the ways they resist the expected use of the various applications in order to invent their own forms of interaction. We propose the category of playful subversion to conceptualize the different kinds of technology appropriation and the pleasures of playful tinkering. We identify four aspects of playful subversion in relation to tablets – invention, definition, assignation, and performance – and argue for a less normative understanding of children's interactions with technology.

Keywords

Children, playfulness, subversion, tablets, technology

Introduction

Clara, a 5-year old, is a keen player of the game *Township* on her mother's tablet. She enjoys tending to the everyday life of a cartoonish town with houses, farms and factories. In *Township*, a train brings construction materials in exchange for items made at the factories, while a helicopter caters to residents' 'orders' in exchange for money and experience points. The money and construction materials allow Clara to build more houses, community buildings and factories, in a never-ending cycle of resource management and growth. From a gameplay optimization perspective, the production wheels need to be in

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motion at all times – with farm animals eating and spawning milk or eggs, and factories making goods – so that consumer demands can be met, and the expansion/construction cycle goes on forever in a satisfying simulation of control and amiable capitalism.

However, Clara does not play following this gameplay optimization model, despite being aware of the game's intention. Clara wants all her animals and residents 'to be happy'. So when the game prompts her to make them work (with 'Z Z Z' letters flying over inactive places to indicate laziness), she instead checks that all cows are sleeping peacefully, and people in the factories 'can go home to their children'. When she herself has gone to bed, her mother plays the game too, setting farms and factories to produce wildly. Clara's mother's 'benefit-oriented' play unintentionally allows her daughter to play against the grain of the game – in sum, to substitute the game's logic with her own. By using the resources her mother has carefully produced, Clara subverts her mother's capitalist instincts.

This kind of 'adaptation' of game rules – where children choose alternative modes of interaction behaviour and interpretations that are not based on game goals or usefulness – is generally a common occurrence in children's play (Karoff, 2013b). It also appears in 3- to 5-year-olds' tablet play and to a lesser degree in older children (6- to 8-year-olds) (Marsh, 2004, 2014). In this article, we expand on this idea and argue that children's playful resistance is not only relevant in play or gaming situations but that it extends to general interaction with the tablet. We propose the concept of playful subversions to describe *the play-driven practices that go against or challenge digital designs, and authoritative figures, such as teachers and parents*.

We base our assertion in our empirical studies of children using tablets, in the course of which we have found numerous occasions of children going against the authority of the machine (how the application is supposed to function) or the adults (who tell them how things are supposed to work). Our first impulse was to dismiss this exclusively as a disruption – due to a lack of knowledge or a will to be oppositional. However, a closer analysis reveals a more complex picture of the pleasures and the creative opportunities that playful resistance (subversions) might afford. While much has been made of the 'playful' general turn in media studies (Frissen et al., 2015; Sicart, 2014), studying situated forms of play (Sutton-Smith, 2001) by children can offer a more complex comprehension not only of play but also of children's new media literacy practices.

In the following sections, we look at children's resistant practices through the theoretical lens of playfulness (Barnett, 1990; Karoff, 2013b; Linderoth and Mortensen, 2015; Sicart, 2014). We label these practices as 'subversive' because children defy distinct authorities and digital structures – such as game design narratives, design of the device, instructions and teachers. We propose four main aspects of playful subversions: *invention, definition, assignation and performance*. Finally, we suggest that despite the closed format of digital devices – such as tablets – these playful subversions are children's ways of challenging, experimenting and learning with digital platforms. This is particularly important because the discourses around children and technologies are often focused on 'useful' learning – such as the acquisition of digital literacy (Gillen et al., 2010; Gilster, 1997; Lankshear and Knobel, 2008; Weber and Dixon, 2010). A focus on

playful subversions makes alternative forms of agency visible and might challenge current perceptions of young generations as passive consumers of digital technologies.

Methodological context

This article draws upon the empirical data we have collected during the course of two different studies about children and the use of tablets (each of the authors involved in one study). Playful subversion was not a topic in either of our studies – rather it emerged from the empirical data (which included videos, fieldnotes and interviews). We became intrigued as we encountered more and more examples of what could be defined as subversive behaviour. Consequently, we pooled our data and reviewed and recoded them focusing on different manifestations of playful subversion.

The first study is part of a PhD research project that investigates the ways in which children aged between 4 and 7 years play and interact with tablet devices. Transnational and cross-cultural issues are explored by collecting data in both Denmark and Japan. The project maps different aspects of ‘play with digital technologies’ within educational contexts across two very distinct cultures. The focus upon tablets is due to their rapid adoption by both Danish and Japanese households throughout the past 5 years. The project follows a grounded theory approach (Charmaz, 2014) whereby hypotheses are raised after the data collection. Children have been observed interacting with tablets while at their educational institutions and not in domestic settings (which would arguably produce different outcomes). All observations have been filmed. In total, 84 children have been observed in both countries, including the observations done with 19 children during the pilot-study phase in Denmark. The pilot phase allowed us to produce a set of codes defining a taxonomy of interaction to guide the next rounds of data collection in both countries. At the time of writing, the project had just entered its final phase. The project was concluded in February 2017.

The second study whose empirical data we draw upon is a just concluded 3-year project entitled ‘Children as learning designers in a digital school’ (2014–2016), funded by the Danish Ministry of Education. The focus of the project was to explore how children’s digital production can have an impact on learning processes, engagement and motivation. It was a very complex project with many partners and involved five participating researchers (including the author). The overall method of the project was inspired by both design-based research (Cobb et al., 2003; Magnussen and Sørensen, 2011) and action research (Argyris and Schön, 1996; Nielsen and Nielsen, 2010). Researchers designed the frame for six experimental interventions (Argyris, 1970) where school children had to produce digitally in various genres and contexts but left the final shaping and operationalization of these interventions open for the practitioners (teachers) to mould according to their needs and class dynamics. During the 3-year project period, the children’s attitude towards their tablets – as well as the way they used them – changed considerably. In this article, we draw on examples referring to the smaller children (1–2 class) who were 7 and 8 years at the beginning of the project.

There are some clear distinctions between the two studies. The group of children at school (7- to 8-year-olds) had initiated their alphabetization process, so most of them could read and thus engaged differently with the device. In the case of the younger group,

they were yet to learn to read and write (although some could write their names). They did not thus engage with tablet text. The school project was a longitudinal study in Denmark and focused on specific productions such as stories, mathematic exercises, documentary films, games and learning. The other project (pre-school) was focused on transnational dimensions of play practices between Denmark and Japan. Despite these methodological differences, *playful subversion* kept appearing spontaneously in very different contexts, thereby leading us to form our initial hypothesis that it might be a ‘natural’ way of interaction with the tablets.

In our joint analysis, we isolated two key aspects in the data sets: the *types* of play and *how* they subverted modes of use of the device. These types of play – which we identified as playfulness – explored a variety of affordances based on both the materiality and the design of the device, and its applications (apps). The subversive aspect came to fore through playful performances and their outcomes, helping us identify the categories proposed in this article.

Play and playfulness

We advocate for an interdisciplinary understanding of play – drawing on the disciplines of games studies, cultural studies and media studies, particularly on work about children and media (Drotner and Livingstone, 2008; Livingstone, 2009; Livingstone and Haddon, 2009).

Play has become a central concept in the study of culture in the past few years, especially in relation to technology, building on the humanistic approach of early scholars such as Huizinga and Caillois (Caillois and Barash, 1961; Huizinga, 1949). Video game scholarship has rehabilitated play as the key to understand the kinds of interaction and agency provided by computerized entertainment (Dovey and Kennedy, 2006: 42). Theorists such as Mary Flanagan (2009) have insisted in the complexity of behaviours afforded by games and play and the subversive possibilities of play. Play has also been linked to both child development and educational studies (Fleer, 2010; Papert, 1993; Papert and Harel, 1991; Piaget, 1999; Vygotsky, 1966, 1978).

While play is a self-contained activity, playfulness does not necessarily imply the same thing. Playfulness exists in its own mode and is sometimes constrained to a brief moment or an attitude that does not evolve into an activity – for example, a bit of word-play that makes everyone laugh during a serious philosophy lecture. Playfulness is an ability and readiness to engage in play, as a stable play disposition (Barnett, 1990). More recently, the idea of playfulness has grown to subsume other forms of interactions that are not necessarily play,¹ such as Sicart argues in *Play Matters*, where playfulness becomes ‘a mode of being’ (Sicart, 2014: 26), in the spirit of Sutton-Smith, for whom playfulness is present in activities such as conversation, travelling and even work (Sutton-Smith, 2001).

Our empirical data confirm that tablets afford both full play activities (such as using an actual app game) and playfulness (such as messing around with the operating system, recording funny sounds and playing with letters in input fields). Play activities and playful interaction are both ‘fun’ which could be observed through the children’s expressions, laughter and replies to the question as to why they liked playing on tablets.

In fact, playfulness proved to be an inherent part (maybe the most inherent part) of using the tablets – even if the children were not playing a game – from moving icons around to using the reflection affordance of the glass. Looking at oneself on the device, making faces, finding what the camera ‘sees’ in the room and taking pictures are all playful activities. The discovery of these features exerts pleasure and amusement – such as when Siri² suddenly appeared in all first-grader iPads after an operating system upgrade – and the children spent the best part of an hour ‘talking’ to Siri in delight, testing its limits and competing to find the funniest way of interacting with it. The children were engaged and having fun, however not necessarily developing any particular set of rules (game) or extending the activity further than that.

This kind of playfulness is usually dismissed by educators and parents as ‘fooling around’. The only kind of play that is accepted is controlled play, such as that afforded by educational games. The adults we talked to in our studies were strongly attached to an idea of play as useful or play as progress (Sutton-Smith, 2001), in a context where devices are mostly seen as learning tools. The fun or playfulness that operating systems and apps might also afford is overlooked – probably because it is more difficult to grasp and harder to quantify in pedagogical models.

But play and playfulness cannot be totally controlled. As Sicart (2014) points out, play is always ‘a struggle between order and chaos, between the will to create and the will to destroy’ (p. 25). Among the main characteristics of play, he considers play to be creative (Sicart, 2014: 37), ‘disruptive of its own context’ (p. 33) and ‘autotelic’ (p. 35). These characteristics were certainly present in our observations of playful behaviour and resonate specially well with the notion of subversion.

Subversion

The Oxford Dictionary defines subversion as the ‘undermining of the power and authority of an established system or institution’. In this article, we talk of subversion when children playfully go against what the tablet software or hardware have been originally intended or designed for or the instructions given by the educators. This does not include mistakes as such, but rather behaviours that purposefully make use of the artefacts in an alternative way. We are aware that ‘subversion’ might carry some political or even negative connotations. However, we chose this word specifically because it points to the fact that going against the machine, so to speak, might require an extra effort since algorithmic interaction is so strongly limited. That is, altering the purpose of electronic systems (hard rules) is in principle harder than twisting social norms (soft rules). Like Mortensen (2008) notes, in the context of games, ‘If something has not been permitted by the program, it is not possible’ (p. 205). But even programs with very clear limits and affordances, like an operative system, can be used in unexpected ways that defy the adults in charge. We have therefore also collected situations where the tablet affords resistance against authority (educators, teachers, parents), as long as it is centred around some sort of digitally supported play.

This kind of subversion is illustrated in Figure 1 – a screenshot from a game made by children using Hopscotch (an app designed to teach children programming on their iPads). The games were created during one of the research interventions³ in the Danish

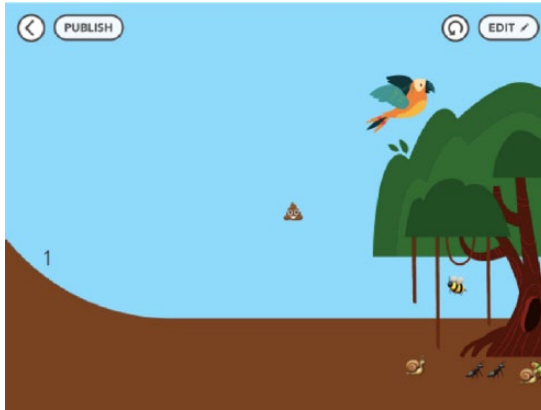


Figure 1. Game created by children with ‘dirty’ mechanics.

school project, where the objective was to draw specific figures using the game sprites and to practise some geometric notions. A few children explored other features of the program instead – mostly creating some interactions that had to do with chasing or avoiding objects – in this case, creating ‘poo’ (see Figure 1). The aim of the children was to shock the teachers and entertain their peers. The ‘pooing parrot game’ and the ‘dog poo eating game’ were received with humour and enthusiasm by the children but discarded by the teacher because the games did not meet the requirements of the activity.

This type of ‘poo’ play can be dismissed as a typical example of children being mischievous; it could indeed also occur in other, non-new media contexts, such as the children being asked to draw something on paper. However, digital technologies do seem to afford a heightened sense of exploration, with multimedia play being a motivator in and of itself (Sørensen et al., 2010). These playful affordances of multimedia were certainly apparent in our fieldwork. And even though social subversion episodes cannot be explained only in terms of technology, since classroom/kindergarten/pre-school situations are extremely complex and would require taking all other factors into account (such as peer relations and teacher–children relations), we would still argue that the tablet affords a higher level of playfulness than other platforms or media, as we will see in the following sections.

Playful subversion in game studies

As already suggested, we are certainly not the first to connect playfulness and subversion, as related ideas can be found in the work of play theorists (Sutton-Smith, 2001) and even performance scholars (Schechner, 1988). The field of game studies has also paid attention to this connection, most notably, in Mary Flanagan’s (2009) book *Critical Play*. She notes that play has always had subversive qualities as well as purely entertaining ones. She draws on examples of Victorian subversive doll play practices, such as ‘reskinning’ (altering characters’ appearances), ‘unplaying’ (enacting forbidden and unfortunate scenes) and ‘rewriting’ (inventing narratives around the dolls, for example, about their

death) (Flanagan, 2009: 32), which are strategies for social resistance. Victorian children subverted the homemaker and mother roles that they were supposed to be preparing for through playing with their dolls. They invented new rules for interacting with the toys – rules that were not what the adults expected. Their activity questioned social norms, even though these children might not have been conscious about what they were doing. Like irony, this kind of subversive play requires that we know the ‘proper’ code of conduct to choose doing something else. Consequently, the ‘doing something else/going against authority’ has to be deliberate and not a product of chance or misunderstanding. This can be directly applied to our tablet observations. Sometimes, the children engage in an alternative interaction possibility because they have not discovered the ‘real’ one, but even when they familiarize themselves with the app and the proper interaction form is understood, they often choose to carry on doing things their own way, as described in the *Township* example at the beginning of this article.

Other game scholars have investigated alternative and contrary ways of play (Apperley, 2010; Linderoth and Mortensen, 2015; Myers, 2010; Newman, 2008).⁴ However, their approaches concern the tension of play versus games – or the tensions within play communities – while our focus here is on what Myers (2010) calls ‘free uninhibited play’ (p. 27). Our subjects have no preoccupation with mastery, and we wish to specifically avoid any normativity around good versus bad play, to instead focus on the pleasures and fun of discovery. Moreover, the kind of subversion we identify here is related not only to games but also to all sorts of tablet activity, including school productions.

Playful subversion and tablet use

In what follows, we introduce examples of playful subversion drawn from our data analysis. We have grouped the intersecting points regarding playful subversion into four semantic categories according to similarities in the different occurrences: *invention*, *definition*, *assignation* and *performance*. Each of these categories is explained and exemplified to illustrate how it is enacted. Elaborating on these categories will provide a framework on how they connect to established concepts within related fields.

Invention

The first identified aspect was invention. It occurs when children resist the expected use of the various apps and invent their own forms of interactions. One illustrative example of this comes from Japan, where the children created an activity or a game by just swiping through images in the existing image library available in an app to find a specific picture, in this case, the one with them making a face to the camera. What initially was a practical operation – a means for another action – was turned into a purpose in itself. This was highly fun and entertaining, with the children engaged and laughing throughout.

The invention of alternative interaction forms is usually appreciated by the peer group, creating a dynamics of children versus adults that only increases the fun. For instance, the youngest Danish children engaged in recording funny sounds and faces to make their peers laugh instead of following the instructions given by the researcher

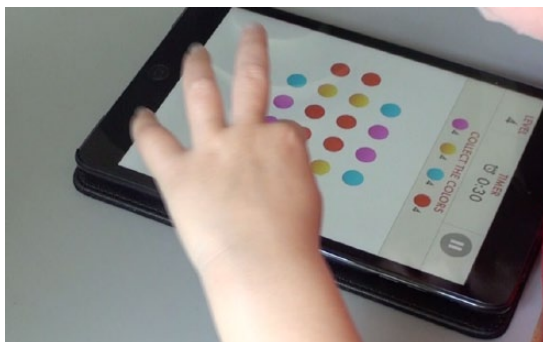


Figure 2. Linking red dots as new rule.

(about using the recording to tell a story). In this case and the previous one from Japan, there was an element of mischief made evident by the laughter and expressions of the children. Children were very much aware that they were doing something they were not supposed to, and this was exciting. The laughter indicated a degree of challenging of the ‘controlled’ environment. Given the children did not know us, this ‘misbehaving’ or ‘pushing boundaries’ with strangers could be considered a kind of subversive behaviour in both the Japanese and Danish contexts.

A different kind of invention refers to children creating their own solution instead of following the ‘suggested’ designed solution of the app. This was also witnessed in both Japanese and Danish contexts, where children appropriated the apps to their own desired play, even verbalizing the goals they had just inferred from briefly playing with the app. They would not necessarily follow some of the game mechanics; for instance, they would go back into previous screens of an app to start over instead of continuing to the next step as prompted by the app design. They invented their own ‘rules of the game’ and overruled the inherent progression of the games.

To understand this overruling aspect, we can apply the lens of cognition. By creating their own rules, the children created meaning to (self) explain what and how they were doing in the game, as it became apparent by what they expressed aloud. In some cases, children were playing the apps for the first time and ignored the direction of the device to instead create their own rules. The game *MatchTheDots* (by *Icemochi*) is about linking dots and giving different number of dots of different colours to be linked, but one of our subjects created the rule ‘to put all the reds together’ and stuck to it managing to go forward on the game by linking the other colours to have more ‘reds’ appear (Figure 2).

The majority of apps for this young group has a designed flow – one should do something first, then something else after that following a narrative. However, quite a lot of children deployed the back button that disrupted the narrative and created their own game. This kind of alternative play is neither exploitative (Myers, 2010) nor related to performative behaviours (Apperley, 2010). It is autotelic, creative and personally satisfying. The child imposes her own goals onto those of the game; the subversion is then a form of agency.

Definition

The second aspect of subversion observed across all the groups was a degree of slippage in naming conventions; the children would insist on their own way of framing the activities. In Denmark, the youngest children referred to all tablet interaction as a ‘game’ (*spil*) – the camera, the drawing pad and the keyboard. While in Japan, children of the same age refer to them as apps (*apuri*). When the Danish children were asked whether they had played with tablets, they replied in the negative, stating that they had only played games on it.⁵ The older Danish children referred to interacting with the same app in different manners depending on who had initiated the interaction: if it was teacher initiated, they talked about ‘doing our homework’, whereas if they themselves had started it, they called it ‘playing’. Children corrected the adults (the names adults give things) and insisted on their own meanings.

The way we name things has – as any discourse scholar will attest – a huge influence on how we understand the world. In the school project, we used the Hopscotch app so that children could learn programming notions in a game-making environment. We observed two classrooms of 7-year-olds; in one classroom, the teacher had introduced the activity as ‘a game’, in an attempt to make it more palatable for the pupils. In the other classroom, the teacher had told the children that they were going to ‘learn to program’. The two classes followed exactly the same video tutorials and exercises, but the perception of the children in the final evaluations was very different. Many children in the class where the activity had been introduced as a ‘game’ reported feeling that it had been fun, but that they had not learned anything. By contrast, the children in the class that had called the activity ‘programming’ were much more assertive about their learning outcomes and were even able to mention some specific programming concepts, but they did not mention fun.

Words can indeed hold us back, as the next example illustrates. The younger pre-school children were asked to use the *Book Creator*⁶ app to tell a story in groups of three or four children. As there were only two devices, they had to alternate who was in charge. Although they appeared to have fun while creating the story (they could draw, take pictures, record videos and sounds) and helping each other, they kept asking when they could play a game – meaning they wanted to play with other apps. Although they were playing while making their stories, they did not necessarily identify the activity as free play because they perceived Book Creator as an educational activity (and thus not a game). This perception reiterates the findings of the previous section (invention) in terms of the importance of context setting to situate playful reactions. In the case of invention, children redefined a functional aspect (browsing pictures) into a playful activity. Here, they refuse to acknowledge interacting with an app as playing.

Sometimes, defining an activity can become an even more performative event. In Schechner’s (1988) view, performance-oriented play is a ‘continuous creative-destruction process’ (p. 3) that transforms situations. For example, at one point, the class was working with Lego Mindstorms. During this exercise, the teachers wanted the students to focus on programming; however, the children were extremely invested in naming the robots and assigning them personalities. This fixation with robot identity made some do the exercise ‘wrongly’ on purpose (i.e. run longer than the 1 m they had been instructed



Figure 3. Child creates own flavour combination instead of following the design suggested on the top left.



Figure 4. Another instance where child creates her own 'ice-cream' combination, based on own taste and ignoring the suggested combination shown on the top left of the screen.

to) 'because Rudolf (the robot) is fast and brave and has to run farther than the others'. For the teachers, the robots were instrumental objects, props to allow for the learning of programming basic notions but ultimately meaningless. For the children, the robots became subjects through the very act of being named – an example of the power of avatar. The children were still learning to program, but by defining the robot character they disrupted the activity ('focusing on the wrong things', as the teacher put it).

As we have seen in the previous examples, children name things and activities in their own ways, framing the way the interactions are perceived and therefore subverting and

outplaying definitions given by the adults or the tablets. This display of will extends to the procedural interaction in the next section.

Assignment

The third aspect of playful subversion that we encountered deals with assigning personal (aesthetic or ethical) values to the tablet characters and/or designs, as we showed in our opening vignette of Clara playing out her ideals in the *Township*⁷ app. A related example from our fieldwork was the act of purposefully ignoring game instructions to find new and more satisfying play forms, which we observed many times. For example, the *Lego Food*⁸ app presents a food order by a customer that the player is expected to fulfil. In our observations, several children made other ice creams that did not cater for the given order, but were ‘nicer’ on purpose. Children followed their own aesthetics and tastes, as in the examples in Figures 3 and 4, with Lego ice creams to have whipped cream or cones as shown.

It appeared that the children thought that exercising their fantasy and attributing their own tastes and aesthetic ideas to the customers were more important than making the ‘right’ ice cream. The winning logic of the game is rejected for a ‘higher cause’.

Aesthetic ideals are a powerful drive for creative interaction. The school project, which was based on the children making digital productions in different genres, yielded many observations of children imposing their aesthetic ideals over the given instruction. For instance, when they were told to draw geometrically meaningful static figures (a square, a triangle, etc.) in the same *Hopscotch* program, many took the instruction further and got the figures to change size or move in weird ways, like disappearing or completely filling the screen. They still learned to use the program, but the results were totally whimsical and surreal. When interviewed, they stated that the point of a program with so many possibilities is ‘to try all sorts of stuff before deciding which one is best’. That is, they transformed a closed task into an open one. The teachers reacted to this in different ways. Some told the children off because they were doing something else, and others interrogated them as to what they had done and raised a conversation about those different programming functions so that their subversive activity was then reabsorbed into the realm of the acceptable.

When children impose their aesthetic or ethical values upon those of the program, they are assigning their own set of procedural rules (Bogost, 2007) and thus changing the rhetorics of the situation. Assigning is not about misunderstanding mechanics but instead about choosing alternative mechanics and/or meaning for their actions by attributing their own values to the digital interfaces.

Performance

The fourth aspect of playful subversion involves the use of the tablet as a prop to facilitate certain kinds of subversive performance, understood in Goffman’s (1959) sense as an activity which influences the other participants. Performance is an important concept in relation to play (Huizinga, 1949; Marsh, 2005; Schechner, 1988; Sutton-Smith, 2001). When discussing performance and the performative nature of interaction, Sutton-Smith (2001) reminds us that ‘most social play is not without the audience at least of the other players’ (pp. 192–193). This social dimension could, for example, manifest itself in children acting ‘against’ each other (fighting each other) or ‘with’ each other, like being an

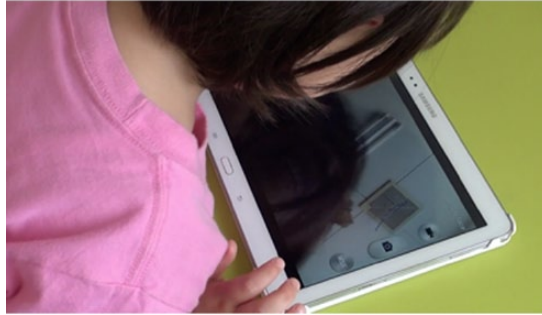


Figure 5. Pushing hands around to control the device.

‘accomplice’ or encouraging each other to transgress. In these cases, the technology becomes a motivator, a prop, where the existence of the device mediates the interaction with a unique proposition or property. There is of course a degree of performance embedded in many of the examples from the other three aspects of subversion, so the devices afford a general performative potential across all categories, but which we have isolated here as a separate category for the clarity of the analysis. We account for some noteworthy aspects in the following paragraphs.

A common catalyst of observed performance can be traced back to a sense of ownership. Although the tablets in the school project legally belong to the school, the children felt that they were their personal property and were very preoccupied with, for example, setting a background image that reflected their tastes (a football player, a pet, their room). It then became equally important to show this image to the rest of the class, to use the tablet as a prop for building a sense of identity in the group. Playfully, these pictures were changed every so often, getting into social rhythms of sharing and renewing identities. This is not subversive as such because the children know that the tablets are not theirs, but it is an indicator of the value they attribute to them and how important it is to have control over them.

Stating and performing who the boss is (who ‘owns’ the tablet) become paramount. In both projects, there were group activities where a few children would have to hold a tablet together to accomplish a task or collaborate on a project. Sometimes, disputes would erupt about who was in ‘command’. This command fight was expressed either by shifting the physical position of the device or by pushing each other’s arms and hands (see Figure 5). Similarly, in the school project, we observed small struggles in the groups depending on which tablet was being used for the group work, where the ‘owner’ of the



Figures 6. Seeing her own face and noticing other objects on the screen, room lights and ventilation vent.



Figure 7. Trying to find the actual object's locations in the room by looking around and up.

tablet would try to settle disagreements on the content of the activities by having the group accept his or her opinion 'because we are writing on my iPad'.

The group tasks in both studies allowed us to examine the social/performative role during shared activities. In some cases, children, who were in the group but not in charge of the device, helped the others; in other cases, they tried to disrupt by either erasing their friends' drawing and making a new one or adding to it. In addition, when recording stories, the goal of the sound became to make others laugh by saying words related to bodily functions or by just making funny sounds. The question of performing control – who is doing the direct interaction with the tablet – became thus an issue that will determine social interaction patterns of disruption or collaboration, which in turn prompted some subversive acts. In the study with younger children, there were two devices each per group of four to six children and they were expected to work in the same space and in teams. Therefore, while paying attention to one team, the other team planned on ways of ditching that activity to, once again, open an app of their own choice. When spotted, they laughed, as planning to digress was also a game-like activity – *will we be caught?* This was interesting because making a story was not an imposition but an agreed activity. Consequently, one could question whether the activity was accepted as a means towards having access to the digital device, indicating a subversive intent upon agreement.

Public performances of control have a dimension of appropriation, as witnessed in Japan, at the display of a medical app during a technology event. Some of the children who were accompanying their parents noticed that some tablets were in display at one booth and immediately overtook them. Without any guidance, they started to use the medical app for their own play, by drawing and taking pictures, features available in the app. The app, which had been designed to help nurses and doctors record and save information regarding patients, became a drawing and picture play app and the booth suddenly was turned into a playground, with a number of children observing the others playing or trying to get hold of tablets themselves, encouraged by the general playfulness. The children, very literally, had conquered the professional's working instrument.

A final consideration of the performative potential afforded by tablets refers to the intimate space that can be created by engaging in a 'secret' activity through the tablet. Two children started making faces at the screen and laughing a lot while doing it. One of the children pointed at something they could see on the screen to find out what that was and where it was in the physical room, and then the other one pointed at the ventilation vent above them (Figures 6 and 7). They kept making faces and playing with the camera together with making sounds when they made the faces. While one was making a funny face, the other took a picture and then launched the picture. Although they could have made faces to each other without a device, it was the reflections and images, together with the 'semi-private' space formed as one raises the device and semi-hides behind it, which promoted the 'game'. They had turned the tablet into an advanced prop for their own game, an instrument to display their togetherness and the special value of the situation.

We have illustrated the performative aspect of tablet play through examples of playful subversion taking place both with and through the device, thus turning it into a social prop for experimentation, motivation, partnering and/or fighting.

Discussion

Throughout the outlined examples of playful subversions, we have highlighted a series of intersecting aspects that tie our observations to existing concepts within play, technologies and media studies. The three most prominent aspects are motivation, appropriation and humour.

If there is one trait that is pervasive in all our empirical material, then it is the heightened sense of motivation that children displayed while participating (or observing their peers participate) in interactions with the tablets. Heightened motivation is a well-documented factor of children's interaction with technology (McCarthy and Wright, 2004; Verenikina and Kervin, 2011; Weber and Dixon, 2010), but what is new here is that the motivation was even higher when the children were engaged in playful subversion. The evidence of the children's statements, laughter and body language indicates that the pleasure they felt in subversion increased motivation and was, in McCarthy and Wright's (2004) words, the cause of emotional fulfilment (p. 126).

Moreover, the motivation continued to be high over time and did not fade in the course of our observations (which in the school project were stretched over 3 years), even in the face of failure. In most interventions, children were overwhelmingly keen to interact with

tablets, curious and interested, as they explored and tried different apps and specific ways of using the devices. It seems that low or no expectation leads to little or no disappointment, thereby allowing the children to go into a motivational high. Their playful subversions helped create a space in which experimentation and fantasy were possible. We observed a high acceptance of failing many times before succeeding, an aspect common to digital gaming (and which many of the children had already experienced on other platforms).

The motivation and engagement of using and playing with the devices seem to inform a strong sense of individual agency (Marsh, 2014), allowing for an appropriation of the technology (Dourish, 2006; McCarthy and Wright, 2004; Papert and Harel, 1991; Pink et al., 2015) that is reinforced by the subversive practices. According to Pink et al. (2015), appropriation is 'the process by which people assign meaning to things, people, places and activities' (p. 60), a definition very much aligned with the four aspects of playful subversion described here. These researchers also acknowledge that the 'meaning' or the value assigned to media technologies is dependent on its surroundings or how groups, places and the society in question make use of and relate to these technologies. Our empirical material very much confirms this approach, with children engaging in distinct inventions, definitions, assignments and performances depending on the context in which they found themselves. Dourish's (2006) and De Souza e Silva and Frith's notions of appropriation (De Souza e Silva and Frith, 2010) complement this discussion, acknowledging that certain technologies encourage an appropriation of space and specific spatial practices, both of which we witnessed in our research. McCarthy and Wright (2004) pinpoint how young children appropriate technology by giving the example of them playing with their Gameboy:

They often seem to crouch over this small object that they have grasped between their hands as their thumbs respond with great speed and dexterity to the sights and sounds of the game. Very often these children are so absorbed in the game that they cannot hear or see anything else around them. They are completely attentive, engrossed, intensely concentrated, and immersed or lost in an activity. (p. 82)

This intense bodily engagement was certainly present among the children we observed using the devices in the subversively playful manner we have proposed here. Nevertheless, in the case of the tablet, this interaction opened to social exchange, bonding and engagement in negotiations, challenging the 'immersed or lost in an activity' perception. Instead, a 'space' (De Souza e Silva and Frith, 2010; Dourish, 2006) dedicated to imagination, ideas and playfulness emerged, allowing for a fun exchange. Children laughed, engaged and smiled while playing and using the tablet subversively. In addition, when asked about why they liked tablets, the immediate answer was, 'Because it is fun!'. Different modes of fun were witnessed, and children 'doing something else/going against authority' would often laugh and get others to laugh. There was obvious pleasure both in the act of transgression and in showing the results of the transgression.

Helle Karoff has noted that a range of behaviours that are on the surface disruptive 'nonsense' (absurd or 'naughty' actions, laughing fits, etc.) contribute to a kind of euphoric play mood which gives a high intensity and cohesion to children's social interaction. When children engage in nonsense, breaking the boundary – and not so much what one can 'learn' from the activity itself – is the goal (Karoff, 2013a). The notions of

nonsense/euphoric play apply only to some of the activities that we have introduced here as playful subversions, but it is her argument about the dionysiac breaking of boundaries that particularly resonates with our data.

Importantly, we have observed that a sense of joy and good humour (sometimes laughter) pervades the playful subversion activities in all of our four categories. The subversive children, like Karoff's nonsense players, are in high spirits, visibly enjoying their inventiveness and alternative ways of interaction. The beneficial effect of humour in connection to creativity has been long acknowledged, although rarely demonstrated empirically. Hauck and Thomas' (1972) experimental results from 1972 concluded that children 'who made unusual associations recalled more information in both incidental and intentional learning than those making usual associations. Humour facilitated retention resulting from incidental learning but not intentional. Intelligence, creativity, and humour were correlated' (p. 52). The ability to make unusual or surprising associations is a basic premise both for humour (Critchley, 2002) and for creativity (Boden, 1990), which probably explains why the children found so much joy in finding alternative interactions.

Conclusion

Through this article, we have introduced the concept of playful subversion observed in tablet use among young children. Despite the differences between the two projects involved, both studies converge in a number of categories that defined ways of subverting tablet use through playfulness. The aspects of invention, definition, assignation and performance emerged in the examples and became key points for elaboration.

These aspects cover creating new spaces and knowledge through tablet use (play), appropriating features, designs and affordances to have fun and bringing meaning and agency to the children involved. Tablets' physical and digital affordances appear to promote a number of interactions and modes of play, innovatively complementing the ones initially designed.

We insist that playful subversion does not equal destructive behaviour (or only a very small part of it). It was remarkable that in nearly all the witnessed examples, the children were still being constructive, becoming literate about technology in the process and actually learning something (from interface symbols and operations to programming notions). Children can build their own rule systems upon the designed ones or discard them altogether by deciding to treat the tablets as toys. Such motivations set the stage for a wide range of interactions through curious exploration and playfulness, not only breeding distinct types of knowledge but also preparing children towards a world where digital spaces become increasingly pervasive and demanding.

Our findings here also point to the importance of approaching children's interactions with technology in a less normative manner and allow children to set their own interaction agendas. Their playful subversion leads to a sense of discovery, a realization of creative possibilities and the conviction that their ethical and aesthetic preferences can be realized, albeit at a modest scale. Scholars have recently highlighted the need to cater for children's online experiences and contexts, to prioritize children's rights during the digital age (Livingstone, 2014; Livingstone and Haddon, 2009). Building from this approach,

our research seeks to document children's own ways of dealing with, and appropriating, digital technology in educational contexts. We have experienced that it is the impulse of both teachers and educators (parents too) to stop children when they 'deviate' and try to put them back on track (to use the devices as they were intended). Instead, we should be more aware of the potentials of deviation and how playful subversion can promote agency and an explorative ground for creative encounters. Understanding the potential of subversive modes of play can contribute towards more nuanced models of official (teachers) and unofficial (parents) education for, and with, young children.

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Notes

1. A related field is the study of what has been called ludification (Raessens, 2006) or gamification (Walz and Deterring, 2014), about how many aspects of our culture have adopted game-like features, for instance, point-promotion systems at workplaces. However, this is mostly about influencing people's behaviour and therefore beyond the scope of this article.
2. Siri is Apple's personal voice assistant.
3. 'Interventions' in this project are understood in Argyris' (1970) sense.

Inspired by Design-based research, the researchers have designed the frame for six experimental interventions. Inspired by action research, the actual shaping and operationalization of these interventions within the frame are left to the practitioners at each school in collaboration with the researchers. (Levinsen et al., 2014)

4. David Myers (2010) distinguishes between dysfunctional play that is harmful to others (also called dark play, as, for example, defined in Linderoth and Mortensen, 2015) and play against the rules. However, dysfunctional play of this kind is often exploitative (Myers, 2010), and discourses around it are typically centred on mastery, like in the idea of superplay presented by Newman (2008). Tom Apperley proposes the notion of counterplay to explain the 'antagonistic relationship between the digital game and the player' (p. 102). Counterplay is related both to using the limits of the virtual space to one's advantage and to performative behaviours that 'deliberately "resist" or ignore coded messages, create aberrant outcomes, and even to change the message' of the game (p. 107), such as modding or in-game performances.
5. This refers to the distinct words in the Danish language, specifically *lege* (free play) and *spille* (play a structured game such as chess, football and video games).
6. Book Creator, <http://www.redjumper.net/bookcreator/education/>
7. Township app, <https://itunes.apple.com/dk/app/township/id638689075?mt=8>
8. Lego Food app: <http://www.lego.com/en-us/duplo/apps/food>

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