



International Toy Research Association
8th World Conference

TOYS AND MATERIAL CULTURE:

Paris
11-12-13
July

Hybridisation,
Design
and Consumption

Book of abstracts

experice

IC industries
CA culturelles &
création
artistique

UNIVERSITÉ PARIS 13

USPC
Université Sorbonne
Paris Cité

The 8th World Conference of the International Toy Research Association is organised in conjunction with *Experice* (Experience, cultural resources and education) and *Labex ICCA* (Cultural Industries and Artistic Creation) of the Paris 13 University – Sorbonne Paris Cité University.

The **International Toy Research Association** (ITRA), founded in 1993, is devoted to the scientific study of toys in all their facets. ITRA brings together toy researchers from all corners of the globe (see www.itratoyresearch.org for further information). This is our 8th World Conference to discuss research, collaborate on international projects and exchange information with other researchers, students and leaders in the toy industry. More than 80 international delegates attended our previous meeting in Braga, Portugal in 2014.

The **Experice** ([//experice.univ-paris13.fr/](http://experice.univ-paris13.fr/)) research centre focuses on education outside school, informal learning, play and childhood material culture. It participates in the Labex ICCA.

The predominant theme for the 8th ITRA Conference is *Toys and Material Culture: Hybridisation, Design and Consumption*.

Beyond toys, the conference will explore the place of tangible objects and novel forms of material culture in play. What are the similarities and the differences, the relationships, between toys and other material devices, such as board games, cards, digital games and media-connected objects? Are there, in play, or in the trans-mediated toys themselves, new forms of materiality?

PROGRAMME

Wednesday 11th of July

9:00 – 10:15 Registration [RdC] and coffee [1st floor]

10:15 – 11:00 Open session – Auditorium [1st floor]

11:00 – 12:00 Keynote 1 – Auditorium [1st floor]

Thibaud Clément: “Narrative placemaking”, material culture and play at the Happiest Place on Earth

12:00 – 13:30 Lunch and Poster Session – Salle Panoramique [4th floor]

13:30 – 15:30 Session 1

Three streams:

1. Symposium 1: “Hybrid toy research”
2. “FabLabs, GameLabs, ToyLabs”
3. “Diversity of toys and practices”

15h30 – 16h00 Coffee Break [1st floor]

16h00 – 17h30 Session 2

Four streams:

1. “Hybrid play with toys”
2. “History ”
3. “Preschool children and toys”
4. Workshop: “My research in 180 bricks”

17:45 – 18:30 Tribute to Brian Sutton-Smith – Auditorium [1st floor]

19:30 Free evening: Enjoy Paris

Thursday 12th of July

9:00 – 11:00 Session 3

Four streams:

1. Symposium 2: “1st Things 1st then what? Toying with design’s social agency”
2. “Recess”
3. “Board games”
4. “ Experiences with Toys”

11:00 – 11:30 Coffee Break [1st floor]

11:30 – 13:00 ITRA Prize (sponsored by the BTHA) – Auditorium [1st floor]

13:00 – 14:00 Lunch – Salle Panoramique [4th floor]

14:00 – 15:30 Session 4

Four streams:

1. Symposium 3: “Pleasurable Performances of Girlhood Identities in Toys’ Imaginative Cultures”
2. “Semiotics”
3. “Design and education”
4. “ Toys, generational and education”

15:30 – 16:00 Coffee Break [1st floor]

16:00 – 17:30 Session 5

Four streams:

1. “Bedrooms and material culture”
2. “Ways of design”
3. “Toys and narratives”

19:00 Visit and dinner at the French playing card museum

Friday 13th of July

9:00 – 11:00 Session 6

Three streams:

1. Symposium 4 – “Design Education: Creating Objects and Situations for Play”
2. Symposium 5 – “Toys in Greek and Roman antiquity”
3. “Toys and education”

11:00 – 11:30 Coffee Break [1st floor]

11:30 – 13:00 Session 7

Three streams:

1. “Design and play”
2. “Re-thinking the toy”
3. “Screens”

13:00 – 14:00 Lunch – Salle Panoramique [4th floor]

14:00 -15:00 Keynote 2 – Auditorium [1st floor]

Mark Steinberg: “Delivering Toys: The Convenience Store as Media Mix Hub”

15:00 – 16:30 Closing ceremony and ITRA General Meeting – Auditorium [1st floor]

17:00 – 18:30 ITRA Board meeting – [Room 408]

KEYNOTES

“NARRATIVE PLACEMAKING”, MATERIAL CULTURE AND PLAY AT THE HAPPIEST PLACE ON EARTH

Thibaut Clément

Sorbonne Université
France

The opening of Disneyland in 1955 marks the rise of an original business model, founded on the synergy among the Disney studio’s activities in the areas of filmmaking, television, merchandising, and theme parks. Long before the advent of “media convergence,” this strategy of cross-promotion has allowed the Walt Disney Company to expand the same coherent universe across complementary media platforms. However, Disney parks are narrative not by mere virtue of their association with pre-existing Disney narratives but also thanks to staging techniques which, inherited from filmmaking and known internally as “Imagineering,” turn participants into the protagonists of their own, first-person narratives. In addition to “theming” the parks’ lands (i.e. tying them with canonical story-worlds), Imagineers subject users’ progression through space to a sequence, each step of which adds up to a minimal, three-act narrative – that of a sometimes perilous, sometimes tranquil journey into unknown territory.

The Disney parks’ material environment is expressive not just of narratives, but of the very culture that produced them. Not content with reiterating intersubjective norms, the parks even actively shape their users’ individual subjectivity, inviting them to “internalize” emotional or behavioural cues encoded in the built environment. Explicitly designed as the repository of “objectified” values which users need only consult to determine appropriate courses of actions, the park’s landscape is meant to work as a cognitive artefact (Vygotski, Hutchins) to facilitate decision-making or even the self-elicitation of desired emotions—most prominently happiness, tinged with a sense of thrill and nostalgia. By investing users with a role upon which to pattern their conduct, the parks’ and attractions’ storylines provide normative *scripts* for their sanctioned “good use”: this allows parks to operate as “socio-technical settings” (Latour), that is to say the whole array of more or less successfully pre-scripted social relations (especially between user and designer) mediated by material artefacts.

The mode of behaviour thus especially encouraged in Disney parks is that of “play” (Bateson) or “mimicry” (Caillois) – namely, the ostensible and stylized reproduction of pre-existing patterns of action. This is especially evident during breaches to the park’s fictional order, during which workers and visitors typically engage in acts of “cognitive reframing,” encouraging naysayers and openly sceptical guests to display (if not adopt) the desired wilful suspension of disbelief and criticality.

DELIVERING TOYS: THE CONVENIENCE STORE AS MEDIA MIX HUB

Marc Steinberg

Concordia University
Canada

The “media mix,” is a pervasive and structuring aspect of transmedia adaptation in Japan; it is a cornerstone of both toy production and material culture in general. Elements of the media mix are ubiquitous, and environmental. Yet what is the infrastructure of this ubiquity? In this presentation, I will explore one such infrastructure: the convenience store as a site of the logistical circulation of toy media in Japan. Often neglected, the convenience store is a crucial site of toy media retail in Japan, including the design and consumption of toys and character-based candies that are designed for sale solely within the convenience store. Hence I will argue that the convenience store must be analysed as (1) a site of toy media design and production; (2) a site for toy media consumption; and (3) one of the key means or *media* by which the media mix was disseminated.

Japan has over 50,000 convenience stores operating nationwide, which translated into approximately one store for every 2540 people. Approximately 11 new stores open every day in Japan, and there are an estimated 16.7 billion visits to a convenience store per year, meaning about one person visits every three days. While convenience stores stock an array of items – from stockings through ice cream, beer, gum, toys and fried chicken – this presentation will focus on the types of media-related goods that the convenience store sells. At the intersection of a logistical regime of just-in-time delivery, and a media regime of nation-wide ad campaigns, the ubiquitous convenience store is one of the main sites for the perpetuation of media franchising. In other words, to answer the question of how the material culture of toys operates, and to think about the design and consumption of toys in general, we must develop an analysis of the sites of media retail. In the case of Japan this means developing an analysis of the convenience store.

Finally, I will conclude by analysing a recent media mix property (video game, comic, and toy series) – *Snack World* – which turns our attention to the convenience store. *Snack World* features the convenience store within its narrative and game worlds, and uses the convenience store as an infrastructure of promotion and distribution of the toys themselves. These toys are themselves part of the Nintendo DS game, being NFC-enabled objects that work both inside the game and outside it as material objects. *Snack World* hence offers a meta-level reflection on the importance of the convenience store for the production and circulation of toys in Japan.

SYMPOSIA

SYMPOSIUM 1
THEORIZING THE HYBRID IN TOY RESEARCH: WHEN IS A TOY NOT A TOY?

Chair: Suzanne Seriff

University of Texas
United States

Folklorists, literary theorists, and cultural studies scholars have long been interested in the process of genre hybridization, in general, and the instrumentality of hybrid expressive forms in a post-colonial age, in particular (Bhabha 1994, Bakhtin 1991, Burke 2009, Stuart Hall, Appadurai 1990, Garcia-Canclini 1995; Kapchan 1993; Said 2000). At their simplest, hybrid genres can be seen as “double voiced,” resisting singular classification or unified internal structures. In this regard, as Bakhtin (1991) and others have so eloquently noted, hybrid genres are inherently parodic, self-consciously reflecting, re-visioning, and subverting a hegemonic and canonical status quo by blurring or erasing the boundaries between defined categories – history and fiction, male and female, child and adult, national and transnational, oppressor and oppressed, physical and virtual, subjectivity and objectivity. In this sense, perhaps the most productive mode of approaching such hybrid genres is in their instrumentality – what these inherently ambiguous and self-reflective forms accomplish for those who make, consume, or play with them. As Homi Bhabha argues, hybridity “displaces the binary logic through which identities of difference are often constructed” (Bhabha 1994:5) thereby de-hierarchicalizing and de-inferiorizing that which has been marginalized by the dominant discourse. Theorizing the hybrid genre is thus useful for examining not only how cultures, subaltern groups, and ideologies blend and blur, but also the exact points of tension where contact is antagonistic, where roles are rebuffed, and positions of authority are questioned or subverted (Kapchan 1993).

While much has been written about hybrid literary, musical, and visual/material genres – there has been relatively little research on hybrid toy forms and their “performance” as instruments of creativity or contestation in times of crisis or moments of developmental or historical transition. How might we understand the instrumentality of these forms in blurring, contesting, negotiating and/or subverting a unified system of world views, values, materials, and historical eras for those who make, play with, display, distribute, or consume them? This symposium brings together an international team of toy scholars to examine the concept of hybrid toy genres from a post-colonial perspective. Their work draws and expands upon an earlier ITRA symposium focusing on the hybrid category of handmade toys in machine made times. In this proposed symposium, scholars will draw on original archival, oral historical and ethnographic field research to explore the changing meaning, significance, and instrumentality of children’s toys and playthings that have been mixed and matched and re-appropriated at the moment of their performance in a new time, space or age—as evocations for nostalgia, agents of protest, tools for virtual role-playing, or objects of exotification in a post-colonial age.

Chronicling and critiquing two centuries of liminal performativity, the first paper by Dr. Koumudi Patil explores the changing meanings of colonialist Indian toys such as the 18th century mechanical “Tipu’s tiger”(a mechanized tin toy originally created for the ruler of Mysore and

depicting a tiger savagely consuming a European man) that enjoy a new life, centuries later, as objects of exotica in Western exhibition complexes such as England's Victoria and Albert Museum for visual consumption by a globalized audience.

Gougoulis' paper focuses on the hidden stories of handmade or machine-made toys originally created and played with by children during the war years in Greece and more recently re-created and consumed as material objects of gendered and ethnically-charged nostalgia for the now mature generation of veterans in rural communities. The third paper, co-authored by Gougoulis and Papasotiri, is a case study on the power of new media to affect and transform children's playthings and performances in new and creative ways. Based on 14 months of original ethnographic research with a group of urban Greek children, the paper explores the complicated hybridization of both material and virtual worlds when creative playthings combine traditional playground equipment and toys with video-game-based characters and avatars in a hybridized performance that mashes up multiple zones of time, space, meaning and materiality.

Sherriff's paper explores a recent rash of politically motivated "protest art" pieces from artist/activists that appropriate Barbie dolls, baby dolls and miniature toy figures for use in artistically positioned scenes as social commentary on the racism, misogyny, and violent brutality of our contemporary times. In each case, a hybridized toy form is explored through a postcolonial lens as a parodic way to play with the binaries exposed in historical moments of transition, technological innovation, and liminality.

LOCATING THE HUNTER: A TALE OF TOYS, TIGERS, AND TROPHIES

Koumudi Patil

Indian Institute of Technology
India

The paper explores hybridity as a liminal object occupying an ambivalent position in which an object, as in this study – a toy, is instrumental in creating a cultural distance within the identity of the colonized as well as the colonizer. From a postcolonial lens, it is an illegitimate position unacceptable to either the natives or the intruders. However, liminality of the objects is not only situated in the representation of contestations of the human agency, but also in the resistance of the toy itself to escape the tyranny of man's ideology. I argue that in Tipu's Tiger liminality simulates imagination, and in turn creates a legitimate space for an illegitimate encounter between hostile cultures as well as species. The British Empire created new environmental ideologies that transformed and translated cultures into new ecosystems, modifying relations between humans and non-human. Thus, Tipu's Tiger occupies an ambivalent position not only between the colonizer and the colonized but also with the environmental landscape within which man contests the hegemony of the "other".

Tipu's Tiger is an 18th Century life-size automaton commissioned by Tipu Sultan, ruler of the Kingdom of Mysore, alias "Tiger of Mysore". The carved and painted wooden body of the tiger is seen mauling a British soldier and is currently a popular attraction in the V&A museum in London. While chronicling this colonial toy, my inquiry will span across time (colonial to post-colonial), space (India and UK), and agency (Man and Tigers). I draw inferences largely from historical data of the toy itself but also map other witnesses of the contestations – photographs and literary fiction.

In the first section of the paper, in the ambivalent space of the toy, I discuss the contestation of the human agency, each struggling to denote the other as the "other". This is not an "other" that is silenced and effaced because, in the times of Tipu, British control was still invincible. In most studies the "other" has been transgressed, vanquished, and controlled, but not here. This is an 'other', which is not striving to establish equality, but its supremacy capitalizing on the anxiety around the 'hybrid' object which defied the established norms of identity. Thus, through the lens of the colonized, the toy works as a literal representation of hybridity's ability to upset the colonial order, both through its presence and its symbolism. On the other hand, through the lens of the post-colonial, amidst the V&A exhibits, the toy is re-presented as a trophy of the victory of the colonizer over the colonized. Hybridity, makes both positions illegitimate, however, both are acceptable to their own cultures. In spaces of transition, transgression is easier and more acceptable. Resurrection and redemption are not possible in transgression.

I will further problematize the theoretical construct by exploring the struggle for domination between not only men but also between men and nature. By the 19th century, ideas about conservation or exploitation of nature were an important element in colonial ideology. However, from a post-colonial sense, colonial ideology failed to place the colony under the lens of 'environmental concerns'. The 'others' either did not have the concerns or if, at all they did, the concerns did not matter. Moreover, toys are hardly a concern when blood flows on the streets, therefore, Tipu's Tiger fell through the cracks of the British and Indian control, and represented the psychic desires of not only men but also of savage beasts. The tiger implicates

not only the colonizer but also the colonized for the hunts which by the 20th century would bring its species close to extinction. The tiger, posing as the 'historian' is rewriting the history of the hunt, and like any historian, has glorified himself- that is the hunted. It is ironical, that the toy represents not the victory of man, but that of nature over man. The tiger mocks the native and the imperialist and establishes the reign of the wild over the contestations of the "civilized" man. Maybe, "Tipu's Tiger" is not a tale of a trophy won by a man at war with another man, but of the revenge, the tiger wishes to take on its predators. Perhaps, it is a premonition that after years of man-made ecological disasters, the ultimate trophy would be finally won by the wild nature.

**BETWEEN PLAY AND RITUAL: TOYS OF FIRE, LIGHT AND MANHOOD
IN AGRINION, GREECE**

Cleo Gougoulis

University of Patras
Greece

Spring in the Greek Orthodox religious calendar is a season marked by many rituals, most notably a ritual occasion associated with fire and light that starts from the period of Lent and culminates on the resurrection night. Firecrackers are prepared for the occasion in most parts of Greece and, in Agrinion, a special firefight known as *the Halkounia* was organized on Great Friday during the Epitaph processions around the city neighbourhoods until fairly recently. For the young boys in many parts of Greece the association of the Holy week with firecrackers transformed children's play during this period into a contest initiating boys into manhood. Children's versions of the *Halkounia* firecrackers were literally "played with" as a kind of a noisemaking toy with minimal use of gun powder or materials producing the effect of real fireworks thus minimizing the serious consequences that grownups often faced. Drawing on literature discussing debates on the relationship between toys, play, gender and ritual the paper will discuss playful versions of *the halkounia* constructed by boys in Agrinion as a means for expressing local antagonisms and male idioms of contest.

**HYBRID MATERIALS IN CONTEMPORARY GREEK CHILDREN'S PLAY.
THE CASE OF AGRINION**

Cleo Gougoulis

University of Patras
Greece

Garyfallia Papatotiri

University of Patras
Greece

Bishop and Curtis (2013:35) have argued that during the last 60 years childhood and child domains have been transformed by the media age not only in terms of children's accessibility to the new media but also because children's daily lives and their play have been transformed and enriched by the new technologies. Children's encounter with the material world – be it toys, space, or playmates – has acquired a hybrid character encompassing elements from the virtual world of video and computer games in traditional forms of play with and without toys. Competence in play and the acquisition of power may now depend on developing new skills that combine the material and the virtual, for example, by being able to project on everyday playground materials and simple playthings elements of favourite TV shows or computer games or by adopting identities and creating symbolic worlds drawing on favourite videogame characters and avatars. The paper discusses how some Greek children exemplify these play skills relying on material based on 14 months of participant observation between June 2016 and September 2017 in two urban sites (a traditional playground and a school playground used after school time for local children's daily street play) of the city of Agrinion in Western Greece.

WARNING: NOT APPROPRIATE FOR CHILDREN

Suzanne Seriff

University of Texas
United States

This paper analyses the work and words of a number of American artists of colour and/or conscience who are appropriating and incorporating Barbies, baby dolls, toys, and miniatures as central elements in their protest art installations designed to confront and contest the racism, violence, misogyny and brutality of our contemporary times, especially in the age of Trump. What unites each of these artists is not only their hybrid appropriation of dolls and toys as artistic elements in their installations, but their parodic visual commentary on the socially constructed norms of gendered, radicalised, and sexual violence that such dolls continue to teach/reinforce to children in our contemporary, consumerist, society (i.e., Grace Banks, *Play with Me: Dolls, Women, Art* 2017). From a hybridized “topsy turvy” mammy-style cloth doll with the face of disgraced American NAACP executive Rachel Dolezal, (Texas African-American artist Beth Consetta Rubel created the topsy turvy black/white “Dolezally Dolly” in 2017 as an ironic visual commentary on the scandalized news story of NAACP activist, Rachel Dolezal, a white woman “passing” as black.) to a series of black faced baby dolls hanging from trees representing recent victims of police brutality, (This 2015 installation of a series of black-painted baby dolls hanging from trees by Baltimore artist, Loring Cornish, was designed to protest the thousands of innocent and unarmed black men/young boys who are being “lynched/killed/murdered legally by police.”) these hybrid installations visually confront the tensions and brutalities of a racially divided nation while at the same time soliciting reactions from children as a parodic part of the installation itself. The art installation of the commercially packaged and seemingly mass produced “Dolezally Dolly,” for example, comes complete with a mock TV commercial advertising “the first Trans-Black Doll” in a humorous take on the trans-racial topic, from Rachel Dolezal’s perspective. The “commercial” begins with two African-American children holding the Dolezally dolly in a public playground and, facing the camera, enjoining child viewers with the invitation, “Come along with us! Let’s Play!”

In this paper, I critically explore what it is, exactly, that we (the unseen children addressed in the commercial) are being vicariously invited to “play”? And how it is that these hybridized toys can be seen to both reflect and confront our nation’s most troubled “hot spots”? Finally, I explore how we might understand the nature of these hybridized children’s toys – or high art masquerading as children’s toys – when such representations can so easily become the provocative battleground over which a nation, or a people’s, popular hatreds can be visualized, actualized, toyed with, or enacted in the public sphere? This research – which includes first person interviews with the artists themselves, builds and expands upon my earlier work on Holocaust-themed toys and games as a subject of artistic expression by post-modern artists that “rupture the conventions of trauma representation through both genre and point of view: a seemingly purposeful trivialization of the horror of the camps and a blurring of roles for the player/viewer charged with vicariously constructing the camp and carrying out its unspeakable acts.” (Seriff 2017).

SYMPOSIUM 2
1ST THINGS 1ST THEN WHAT? TOYING WITH DESIGN'S SOCIAL AGENCY

Chair: Rémi Leclerc

PolyPlay Lab
Hong Kong

The 1964 1st Things 1st Manifesto initiated by Ken Garland, and signed by 22 (principally graphic) designers, hoped that “our society will tire of gimmick merchants, status salesmen and hidden persuaders, and that the prior call on our skills will be for worthwhile purposes.” 36 years later in 2000 the same and some upped the ante to propose “a reversal of priorities in favour of more useful, lasting and democratic forms of communication – a mind shift away from product marketing and toward the exploration and production of a new kind of meaning.”, warning that “the scope of debate is shrinking; it must expand. Consumerism is running uncontested; it must be challenged by other perspectives expressed, in part, through the visual languages and resources of design.”

The moral imperative of modern design's social agency was articulated in the late 1800s with the Arts & Crafts movement's critical reaction against the excesses of the Industrial Revolution, suggesting design's political role in shaping culture. Where are we now? While the “information age” has not made the production of tangible novelty obsolete, the “shared economy” hardly put a dent into consumerism. However, contemporary designers make theirs the critical outlook raised by previous generations, and experience with new forms of production of meaning, to take on both physical and mental environmental challenges. Also while materiality still defines much of design's reality, new technologies and forms of communication allow for experimentation and production patterns by individuals as well as companies to address a wider scope of needs, many of these special, allowing entrepreneurs to push an ethical agenda by design.

As they are brought to propose better futures and shape culture, designers are pushed to rationalise their proposals... can play promote social design? Should toys fulfil worthwhile purposes? Play positively mediates physically, emotionally, socially, and culturally transformative experiences. Can its agency address individuals' physical and psychological needs, community-building, or advocate STEAM, environmental, and civic issues, or foster education? Can the different forms of play, or better still, can the whimsical, nonsensical, poetic, facetious, irreverent nature of play appropriately channel social innovation without falling into the trappings of utilitarianism?

This symposium will gather toy designers from Asia, Europe, and the US to seek to answer such questions, by sharing practice-led perspectives on design's potential, and how working in concert with multiple organizations, designers help deploy socially progressive ambitions to benefit specific communities. Linking Lab to School to Studio to Industry to Market to Community and back again, participants will address the question of the role of design in bringing plaything systems to community, and fostering social resilience.

The symposium will address the following conference themes and topics: all presentations make the case for toys as tangible media (toys and material culture) to address a number of contemporary issues including personal self-development, psychosocial development, material awareness and environmental citizenship. Tactics deployed in all projects presented tend to leverage design to question consumption be it of products or images and signs - and the generation of meaning, and optimize hybrid, transmedia harmonization of narrative experiences. Topics also include toy-making, education, toys and health and environment, toys, signs and meanings, and toy conception.

TIMELESS TOYS & TALES

A DESIGN PROCESS IN EDUCATION

Surabhi Khanna

Ansal University
India

“The best thing a child can do is to break a toy; the next best thing is to make it; even better is to create it.”

As part of my work I explore design processes in Indian school education. The intent is to integrate in curricula, various design processes through a series of designs in education workshops. So why deploy toy design as a medium to achieve such a goal? Everyone has an affinity to toys and games and this helps students become naturally involved in the activities and consequently connect with the subject’s contents.

We start the workshop with a study of a traditional toy. As part of our “toys and tales” workshop series, usually one specific toy design or concept is selected and explored through various “Tale” concepts. This process helps create multiple ideas for toy product design. The participants are usually involved in education, therapy, child development and psychology. The participants are able to develop new designs during these workshop sessions. The aim is to empower educators and enhance their creative ability in their respective professions by introducing design process, using toy and game design.

I also teach product design and interior design at a university. We felt the need to introduce space and facilities whereby both digital and tangible toys and games can co-exist. The design students are encouraged to incorporate elements of play in their projects as related to interior and product design. Students value this approach as it introduces them to different design processes.

In my studio, I design and produce toys. One of the toy design projects, “Khel Manthan (Churning-Learning) – handcrafted storyteller and storymaker”, is designed and developed within a community. The experiment is used as one of the case studies in design in education workshops to bring in the significance of design process.

I will be presenting some of the experiences of workshops and courses with various groups of school teachers, university faculty, students, and development communities involved in training. My presentation will highlight the process of design development work through group participation.

**TOY DESIGN IN THE CLASSROOM:
TOWARDS PURPOSEFUL CREATIVITY AND SOCIAL CHANGE**

Leon Wang

Firebird Design Lab
United States

Through the use of toy design in elementary school classrooms, Firebird Design Lab (FDL) has developed an innovative approach for instilling purposeful creativity and self-agency in young students. The program is a culmination of FDL founder Leon Wang's background in toy design, architecture, psychology, education, and social justice activism. FDL is currently administering intensive in situ design studios to public school students in grades 3, 4, and 5 (age 8 to 10).

The appeal of making playable objects provides the "hook" for capturing the students' attention at the onset, and ensures their persistence throughout the rigorous steps of the program. During the sessions, the conventional constructs of work, play, learning, and creating are blurred. The students are guided through multiple cycles of "load and release" as experiential lessons in a foundational design process.

The typical FDL program involves an intensive 14-hour mini design studio administered in the students' home classroom. With the overarching objective of achieving both self-expression (art) and mandated outcome (design), the students are challenged to consider the thematic, aesthetic, technical, and pragmatic dimensions of their projects. The project materials are intentionally restricted in order to encourage greater creativity and reduce resource needs. It is a highly rigorous process in which students experience important lessons in basic problem solving, and achieving control over matters and methodologies.

The current FDL program has been implemented for the past three years at multiple institutions in the Saint Paul and Minneapolis area. A typical session involves a classroom of 25-30 students. The program also emphasizes the engagement of the school community. Parents are encouraged to volunteer during the work sessions. At the conclusion of each program run, fellow students, school staff, and family members are invited to attend the final project presentations. The feedback has been consistently positive across students, teachers and parents – noting impact in both academic and social capacities.

The FDL program is ultimately a social-based initiative seeking to improve the collective community through the activation of individuals. FDL is currently working on piloting the toy design program with the activist community and other adult groups.

BETWEEN THE TOY STORY LINES: TOY DESIGN'S HIDDEN SOCIAL PURPOSE

Anne Lelong-Lecomte, Ferdinand Lelong-Lecomte

Ebulobo

France

What do we design toys for? Physiological and psychological development? See how it's done:

- Step 1: place a bell in a toy rabbit's head for baby to locate and get familiar with form
- Step 2: design a shape sorter for baby to discern, choose, handle and pass an object through the right hole and in a box, and develop hand-eye coordination
- Step 3: animate this simple world with characters

And so on, step by step...

Beyond those baby steps toys can be used as media to communicate everything in life: community, love, happiness, divorce, or even death. This paper relates the experiences a first-age juvenile product design, development, and brand company had leveraging the whimsy inherent in toy design to mediate psychosocial developmental tactics, and commercialize designs thus created. The idea is to incorporate stories between the lines of our toys to offer parents and their children the opportunity to talk, discuss and work on issues which are difficult to verbalize and not often explored through toys in general, as usually the closest means parents and children usually have to discuss are books, cartoons or movies. The idea is to use toys as media and link our playthings' narratives to babies' and early children's hidden psychological thematics. This paper will focus on the challenges toy designers face when attempting to integrate whimsy with psychosocial development tactics. This paper will also present an account of work carried out with and without psycho-pedagogical specialists and experience bringing to market a novel appreciation of early age products.

Our first experience was the design of "A WOLF" ("*T'es Fou Louloup*"). Crazy Cuddly Wolf is the story of a wolf so greedy that he gets sick and needs to see a doctor (our version/interpretation has the Wolf eating the Little Red Riding Hood, a pig, a chick... but also a pan, and a cellphone). For children the experience of playing with A Wolf allows them to confront fear. Using a crazy, quirky, funny wolf, we make him (and hence fear) nicer and more accessible than the classic one. Through our storyline, children can take care of the wolf. His blue tongue (because he is ill and needs help) makes the kids attentive to him. Playing between the lines young children discover a new/hidden face of the wild dangerous animal they always thought he was. De-demonizing the wolf, and deploying humour to mediate and mitigate fear, the child can start working on her/his phobias.

Our second collection, "WOODOURS", presents the story of a daddy bear and his baby cub. For the first time there is no mommy. Daddy and his baby enjoy a wonderful day, go fishing together... between the lines of the story, one question keeps popping up: "Where is mommy?" The toy offers then the opportunity to talk about the break-up of two parents. The versatility of "Where is mommy?" makes it useful for many situations, including:

- when children enter kindergarten
- when parents divorce
- when a parent dies.

Speaking about those concepts is subtle. In Woodours' storyline we never mention that or explain why mommy is missing—yet she really is. The message is “All daddies can take care of their babies”.

In our recent collection “MY GIANT MY FRIEND” (“*Mon Géant*”), we address the world of grownups, which to children can be so frightening, yet gentle at the same time. The introductory story tells how a lost child found help from a giant to come back home. Between the lines, we read that children can trust adults because they are nice. In the meantime, My Giant is an imaginary friend, a protector, a confidant. A crucial design feature idea introduced in MY GIANT is a belly button hole. The extreme simplicity of this feature hides a complex set of meaning: where do we come from?

POLYPLAY ECO STEAM: EARLY AGE EXPERIMENTS, LIFELONG CONSCIOUSNESS BRINGING STEAM'S WHIMSY TO MARKET

Rémi Leclerc

PolyPlay Lab
Hong Kong

STEM? STEAM! – Over the past two decades nations around the world have promoted the development of STEM (Science, Technology, Engineering, and Mathematics) education to train a workforce capable of meeting “21st century development imperatives”. While the integrative intent of this multidisciplinary approach has been accepted as conducive to better foster scientific literacy, it has also been criticized as ill-conceived and short-sighted by labour analysts and educators alike. Criticisms focus on its utilitarian short-sightedness, as it fails to connect science to the broader realities of human existence. In response, a more holistic understanding of STEM education has emerged, leveraging Art’s creative and critical thinking.

STEAM play – Yet, while early STEAM proponents see it as improvement on STEM, theirs is merely a utilitarian aim, meant to train “real-world problem solvers”, rather than facilitating accrument of all-rounded knowledge. Artists and designers have always recognised A’s value in extolling S, T, E or M. Also as they naturally integrate play’s whimsicality in their practice, a more sophisticated awareness of the relevance of play, coupled with a broader integration of science and technology in their work places them in a privileged position to shape STEAM programs that nurture children’s development into intellectually, socially, and emotionally all-rounded healthy individuals, mindfully aware of the world around them

Eco STEAM – As a better picture of STEAM’s potential emerges, a growing concern for the Earth’s ecosystem provoked a need for better informed awareness of environmental principles and issues among the public, and enhanced environmental education in school curricula. Yet education is said to be the least effective way to raise children’s awareness of environmental issues, as opposed to first-hand experience of natural degradation. How to connect inner-city children to the realities of environmental issues? There lies an opportunity to design compelling environmental STEAM learning aids that nurture children’s pro-environmental consciousness.

PolyPlay Eco STEAM – This paper presents the PolyPlay Eco STEAM design research and development project, commissioned by a Hong Kong-based educational science, arts, and crafts toy company. The project investigated early primary school science educational curricula (ages 6 to 7) and studied relevant stakeholder, market, technology, and symbolic elements to inform the design of a series of innovative environmental STEAM education product-service systems. Its design process deployed children science curriculum and literature reviews, satirical cartoon review, artefact benchmarking, environmental activists and STEAM educational experts’ interviews, science museum and book fair visits, cultural stakeholder probes, participatory creative sessions, transmedia narrative constructs, and iterative development of curricula and learning aids, aka “prop-shops”, integrating play’s whimsicality, poetry, humour, and nonsense, to enhance STEAM’s A. 240 children and 11 teachers at a local international school participated in and returned feedback on the experiment.

Marketing STEAM’s whimsy – The project demonstrated 1) the value of constructive research through design in the conception of environmental education STEAM product-service systems; 2) the value of play tactics to entice children’s interest in STEAM concepts; 3) the value

of STEAM as a medium to foster early pro-environmental consciousness; and 4) the value of leveraging play's whimsy, poetry, humour, and nonsense to enhance the 'A' in STEAM. The project contributed to a company's strategic brand realignment; integrating 1) research through design processes in its practice, 2) upcycled components in its environmental STEAM product-service system production; and 3) transmedia workshops in its community outreach strategy, internally, in education and retail concept spaces, and externally, in schools and other educational organizations.

SYMPOSIUM 3
PLEASURABLE PERFORMANCES OF GIRLHOOD IDENTITIES
IN TOYS' IMAGINATIVE CULTURES

Chair: Miriam Forman-Brunell

University of Missouri-Kansas City
United States

How have dolls' performances of girlhood sought to inspire girls' imaginative worlds and inform their identities? What are the cultural and technological changes and continuities over time and across national boundaries? Interrogating seemingly passive and mute dolls *within their own* cultural contexts – dolls' culture and girls' culture – reveals active agency and systems of communication while amplifying what dolls have had to say to girls about girlhood. The major themes of this symposium, *Pleasurable Performances of Girlhood Identities in Toys' Imaginative Cultures*, which explores the hybridization, design, and consumption of dolls' and toy cultures from historical, international, and girl-centred perspectives, centre on the performances of girlhoods that circulated within the imaginative worlds created by the doll and toy industries from the late nineteenth century to the present.

In *Doll Play: Imaginative Worlds for Girls in Nineteenth-Century France*, Sarah Curtis examines the imaginative worlds of late nineteenth-century French girls shaped by doll commodities and scripted in doll literature. She argues that the newly designed, produced, and marketed French bébé dolls that emerged in the late nineteenth century encouraged “petite mères” to “raise” their dolls to conform to established norms of bourgeois girlhood. Providing further instruction and more imagination than that included in department store catalogues, dolls, doll accessories and furniture, doll magazines provided girls' patterns for sewing doll clothes, and doll books featured dolls whose escapades and adventures made domesticity seem more exciting than exhausting.

In *Toys and Girls Having Fun Cleaning & Caring: The Cultural Work of Mothers' Little Helpers*, Miriam Forman-Brunell examines the inspirational Mother's Little Helper character who established her omnipresence in 20th century girlhood by traversing dolls' culture, crafting, and the world of toys. Cross-connecting design, consumption, play and craft cultures, Mother's Little Helpers appeared in doll and toy advertisements and on toy packaging, miniature washing machines, and other domestic technologies. Where ever she materialized, the discursive Mother's Little Helper performed a fun-filled domestic identity for girls inspired to clean, care, and create hand-crafted household tools.

In “*Get Your Sparkle On*”: *Meaning and Metaphor in Barbie Advertising*, Jennifer Whitney explores the long term use of “sparkle” in Barbie doll branding while comparing it to the more recent trend of “sparkle” in contemporary girls' consumer culture. Arguing that “sparkle” signals a specific set of inspirational and aspirational desires that has come to “signify a late modern femininity associated with empowerment, visibility and independent wealth,” she considers its implications for the Barbie brand.

DOLL PLAY: IMAGINATIVE WORLDS FOR GIRLS IN NINETEENTH-CENTURY FRANCE

Sarah A. Curtis

San Francisco State University
United States

Dolls, doll accessories, doll furniture, doll magazines, and doll books proliferated for girls in late nineteenth-century France, where the doll had transformed from a fashion plate who advertised French style to a baby doll or little girl whose flesh-and-blood owner became her “petite mère” [little mother]. In books and in real life, the doll was at the centre of an imaginative world in which girls acted out their future domestic roles as wives and mothers. A girl could wheel her doll in a doll carriage, feed her in a doll high chair, and put her to bed in a doll cradle. Doll magazines provided patterns for doll clothes, which introduced girls to sewing basics, and doll stories taught them how to “raise” their dolls to conform to established norms for nineteenth-century bourgeois girlhood. At the same time, however, magazines and books provided narratives in which the dolls themselves, if not the girls who owned them, had escapades and adventures from letting pet rabbits loose in the garden to joining the circus. In short, dolls had all the fun.

The consumer revolution also shaped the imaginative world of doll play. Dolls underwent significant technological improvements in the second half of the nineteenth century that made them more lifelike and less expensive. By the end of the century department store catalogues advertised pages of dolls at all price points as well as the clothes, furniture, and accessories to go with them. Doll magazines – offshoots of the fashion press – encouraged girls and their parents to buy the doll, clothes, and accessories they marketed and a subscription entitled a girl and her doll to an annual party at the magazine’s Paris offices. This paper will examine the imaginative world of dolls as shaped by the “scripts” of doll literature and doll commodities in order to investigate the role of dolls on nineteenth-century French girls’ play.

TOYS AND GIRLS HAVING FUN CLEANING & CARING: THE CULTURAL WORK OF MOTHERS' LITTLE HELPERS

Miriam Forman-Brunell

University of Missouri-Kansas City
United States

Collectors' guides provide information about housekeeping toys but nothing about Mother's Little Helper, the long-serving cultural figure who motivated girls to "keep house." Scholars have similarly overlooked the ever-present figure in the material lives of generations of ordinary girls meant to influence play practices and principles and inform girls' identities. For over 100 years, calculatedly cute Mother's Little Helpers have circulated in toy catalogues, countless housekeeping toys and dolls, and on Valentine's Day cards, board games, aprons, handkerchiefs, etc. Getting girls to find pleasure in sewing and scouring, cooking and cleaning, running errands and "minding" siblings, Mother's Little Helpers tirelessly performed cultural work for grownups anxious to inspire girls' cleanliness and caring. Dispatched to the far corners of girls' material worlds, discursive Mothers' Little Helpers are significant for the gendered "systems of...ideas, attitudes, courses of action, beliefs and practices" they represented and the construction of truths about gender and housework they circulated. Embodied in mass-produced commodities, embroidered on hand-made household objects, and emblazoned on the artefacts and ephemera of American girls' culture, Mothers' Little Helpers articulated an ethos of "domestic girlhood" that roused "helpers" to have "fun" and to "care" about cleanliness. Utilizing material and visual culture methods to analyse hundreds of such documentary sources, I argue that Mothers' Little Helpers: (1) fostered the production and use of hybridized Mother's Little Helper kitty cats and other self-referential figures on tea towels and pot holders; (2) modelled the joys of providing "emotional carework" for girls encouraged to care about others and keep the house clean; (3) generated an imaginary economy in which girls' playful domesticity blended with useful chores within the household economy; (4) generated ways for happy housekeepers to earn social capital for being "good girls"; and (5) sentimentalized, naturalized, essentialized, trivialized, minimized, and reproduced the economic and social value of girls' household labour.

“GET YOUR SPARKLE ON”
MEANING AND METAPHOR IN BARBIE ADVERTISING

Jennifer Whitney

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United Kingdom

In 2011, marketing firm Ketchum Inc. won an esteemed CLIO award for its role in the product launch of a new kind of Barbie doll. Accessorised with a lab coat, chef’s hat, or laptop and glasses, “I can be...” Barbie emphasised the doll’s career path—and “real-life” inspirational qualities—while minimising a familiar image of fairytale and fantasy. Noting that the Barbie brand was “moving beyond the sparkle” (“After 125 Careers, Barbie Gets Her Geek On”, <www.ketchum.com/2011-awards> [accessed 19 Jan 2018]), the product overview description speaks to Mattel’s millennial vision for the doll and, in the process, suggests an historic makeover.

The product launch and accompanying overview both provide a clever narrative of re-invention for a toy that has been a mainstay in consumer culture for over five decades. In fact, such simultaneous marketing and product innovation is what has maintained the Barbie doll’s relevance. Her makeovers are what make her popular. However, to suggest that the Barbie doll must forego her “sparkle” reveals a previously significant (and ironically static) feature of the brand—and implies a potential link to its post-2012 sales slump.

Despite the doll’s regular makeovers, Barbie has been “sparkling” in the language and visual signifiers of Mattel advertising since the 1960s. This paper seeks to explore the long term use of “sparkle” in Barbie branding while comparing it to the more recent trend of “sparkle” in contemporary girls’ consumer culture. In doing so, I will indicate how “sparkle” signals a specific set of inspirational and aspirational desires—both etymologically and philosophically. And, I will consider the implications for the Barbie brand when “sparkle” has come to “signify a late modern femininity associated with empowerment, visibility and independent wealth” (Mary Celeste Kearney, “Sparkle: luminosity and post-girl power media” in *Continuum*, Volume 29 Issue 5 (2015), pp. 263-273, (p. 264)).

SYMPOSIUM 4
DESIGN EDUCATION: CREATING OBJECTS AND SITUATIONS FOR PLAY

Chair: Lieselotte van Leeuwen

University of Gothenburg
Sweden

Educating students to design for children's play is a challenging task. Beyond the idea of toys for fun, design is communicating cultural values—supporting certain ways to interact with the world and prohibiting others. Attitudes towards play, children and childhood as well as topics in current societies are mirrored in design for play. Cultures and societies can differ widely in this respect. Students, therefore, need to gain skills, which allow them to recognize their role and use design for play in a variety of local and global situations, in differing cultural and societal contexts. The symposium revolves around the question of how design educators create awareness of these factors and enable students to make explicit choices about their role as designers for play.

The papers in this session propose a number of approaches to the question. Using concrete examples from design education, contributors will address

- conceptual frameworks for design for play;
- design in the context of political relevant topics;
- provoking students to question the role of design for play;
- play as a method to design for play.

Examples of students' design work will be given to illustrate and critically discuss the respective educational approaches.

DESIGNING FOR CHILDREN AS MAKERS OF (PLAY)CULTURE

Lieselotte van Leeuwen, Johnny Friberg

University of Gothenburg
Sweden

Children re-formulate cultural products according to their age, generation and situation. This process can be supported, ignored, manipulated or hindered by design and architecture. Staff and students of the MA programme “Child Culture Design” at the Academy of Arts & Crafts (HDK) at Gothenburg University are exploring conditions and design strategies to support children in their re-formulation of cultural products. The task of child culture designers is seen as providing potential for self-guided meaning making and improvisation instead of using artefacts and spaces to pre-determine meaning. Consequently, ambiguity of action possibilities becomes a central focus in design for play.

The concept of child culture (Qvortrup & Mouritsen, 2002) is used as a framework for design interventions. “A truly child-inclusive society would be one that not only made children equal to adults but, more radically, transformed it’s foundations in response to what makes children distinct” (Wall, 2010). The following points are the corner stones of our approach:

- Supporting children as makers of culture means to respect them as active and competent agents in a specific local and global situation (including design processes).
- Play is the engine used by children to discover their own potentiality in the environments they will inherit in an unknown future.
- Free play should be approached as an everyday self-organizing process which does not require verbal instructions or fixed hierarchies.
- Children as well as adults are both beings and becomings.
- These assumptions about children and childhood are relative just as any other.

The improvising character of free play does re-formulate the functional fabric of those places and with it provide a critique of normality. In other words, the ambiguities of design, architecture and art form the basis for playful meaning making following or subverting functional structures (Bourdieu, 1977). Actions disambiguate a context by highlighting and connecting features of the environment. Designing for diversity of action capacities and motivations is seen as the basis for the emergence of highly diverse meanings through free play. In this way artefacts and places can reflect the past AND invite new cultural meaning making.

These starting points affect design processes and outcomes. In addition, differences in students’ disciplines (e.g. landscape architecture, graphic design, and industrial design) and cultural backgrounds result in diverse interpretations of the starting points. Using examples of students’ work at the “Child Culture Design” masters programme we will demonstrate and discuss our approach to designing for play.

POLYPLAY WAR & TOYS
DESIGN TO FOSTER SOLACE FOR CHILDREN AFFECTED BY CONFLICT

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PolyPlay Lab
Hong Kong

Brian McCarty

War-toys project
United States

War and toys: In every warzone and refugee camp, countless children stories go untold, locked behind the anguished faces of the boys and girls who have survived. These children are ones most affected by the fighting yet least heard from when discussing the costs of war. To do that, it takes a subjective approach and a willingness to speak their language - to play.

Toy design for warzones: As agents of cultural and social change, designers propose what could be. Working at the crossroads of the humanities and science, they harmonize often-conflicting factors to address needs of diverse stakeholder groups. How does one appropriately assess the needs of children afflicted by Post Traumatic Stress Disorder (PTSD)? How does one design playthings for children affected by war – let alone when remote from the realities of armed conflict? While geographically, politically, culturally disconnected from their context, Hong Kong design students are uniquely positioned to positively influence children, particularly those that have been traumatized by war. Even in areas of conflict that are underserved or inaccessible to humanitarian organizations, inexpensive toys continue to be sold every day. Most are Hong Kong designed and manufactured. The prevalence and established distribution of these toys provide opportunities for those in the industry to purposely shape the play patterns of boys and girls who have been affected by war - promoting resilience, recovery, and ultimately peace.

Play to Heal Workshop: In March 2017 PolyU undergraduate Toy Design students explored toy design and play system opportunities to positively influence and shape play patterns of children traumatized by war, with a view to promote solace and healing. The authors conceived a creative design framework and a product development and distribution scenario to contextualize the design brief. Principles and practices of expressive art therapy inspired a novel design approach to toy design. Students were introduced to the realities of children facing war, to the types of toys currently available and sold in areas of conflict, and the typical play patterns of boys and girls exposed to war, both as firsthand survivors and removed observers. Students were made aware that while realities on the ground means there is little in terms of access to care, the majority of children affected do not exhibit visible symptoms, and hence are ignored. Consequently, designs needed to allow single play with toys purchased in shops, and/or play with peers, siblings, parents. Students were encouraged to trust their intuition and empathize with children in their design approach. They were required to leverage play so that designs counteract negative feelings, lead to insight, promote resilience, regenerate emotional literacy, and lead to change. Following seminars carried out with expressive art therapy expert advisors Myra Saad, Artichoke Studio, Beirut, and Chloe Martin and Lillian Yuan, The Justice Centre, Hong Kong, facilitators supervised the creative development of students' design proposals, which were showcased at the Hong Kong Polytechnic University in November during an exhibition alongside the second author's photographic work.

Play supporting expressive therapy: The play types students typically deployed in their designs include: 1) imagination play, to project fantasies of solace and hope, and reconstruct meaning; 2) manipulation play, to construct objects and structures so as to nurture a renewed sense of control over one's environment and foster empowerment; 3) creative play, including arts, crafts, music,

and dance, so as to express feelings and ideas words cannot communicate; 4) narrative play, as a means to recount, share, confront, and interpret traumatic experiences; 5) action play, as a means to release pent-up emotions, frustrations, and psycho-emotional blockage.

This project builds upon and further establishes a principled philosophy in the authors' practice of promoting play design for children with special needs, including those affected by war, whether in controlled therapy environments or in everyday play. Investigating the mutually beneficial relationships between design, play, and education, constructive design research is anchored in the exploration of conventions of play and interactivity, and draws on traditional and contemporary objects and technology to develop experimental product-service systems for evaluation and development. This paper relates how the approach harnesses 1, the design school studio as a purposeful creative environment to generate pertinent solutions in response to a politically-sensitive brief, and 2, how the inherent whimsy, humour, poetry, and nonsense of play serves as an appropriate medium to advocate STEAM and social/civic issues with a network of NGOs and institutions.

PLAYFUL METHODS FOR PLAYFUL DESIGN

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The current neo-liberal climate has brought managerialism and key performance indicators to the world of Higher Education and its influence has progressively ‘trickled down’ to affect the nature of learning spaces and the relationship between teachers and learners. These spaces have become heavily ‘striated’ in character (Deleuze & Guattari, 1988 cited in Savin-Baden, 2007) as organized, managed and contained spaces and where learning has become a goal-focused exercise in following instructions. Indeed, this is learning by ‘sat-nav’, whereby knowledge has been translated, interpreted and made ‘safe’ for the learner – a situation that lies in contrast to the possibilities offered by ‘smooth’ learning space as open and unstructured, and where learning is about becoming and free action and play (Savin-Baden, 2007).

Reversal Theory (Apter, 2006), offers an interesting lens with which to consider this situation since it suggests parallels between the abstract notion of space and the motivational states of learners. In particular, it suggests that striated space would induce goal-focused and conforming attitudes and approaches to learning. As a result, we hear stories of students’ apparent unwillingness to explore and experiment. Of interest in this paper is whether creating the conditions for smooth learning spaces might induce playfulness, openness and rebelliousness. Such spaces would offer messiness, uncertainty and discomfort: spaces in which learners would be encouraged to play and contest knowledge and ideas. Savin-Baden (2007) suggests that such spaces have the potential to induce ‘disjunction’, where learning is about the sense of displacement, disorientation and ‘stuckness’, rather than steady progress toward defined outcomes.

This paper presents the results of a series of workshops designed to generate ‘smooth space’ through learning opportunities that provoke situations of ambiguity and indeterminacy in spaces that are intentionally messy and disorientating. Different types of toys and instructions are used to induce a playful, open-minded, attitude in learners – an attitude that should help learners to approach and negotiate disjunction as a positive opportunity. We will present and discuss students’ reflections and our observations on these workshops along with outcomes for their proposed designs.

PLAY IS A CHOICE!
DESIGN FOR PLAY IN ART EDUCATION

Lieselotte van Leeuwen, Fredric Gunve

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Sweden

Play is recognized in education as a vital learning tool and materials, games, toys etc. are designed specifically for this purpose. Teachers decide when, how and by whom they can be used. Two widely unquestioned assumptions in this are that children always want to play and, that the use of play materials/games indicates that children are at play. Sutton-Smith (1997) contrasts playfulness and play. Playfulness is a mode of action which accepts frames and rules and is predictable as in sports and games (the form of play mainly used in educational settings). In contrast (free) play is unpredictable and defies frames and rules. Consequently, in tightly scripted learning spaces there is little tolerance for this free form of play. An additional problem is that while children can be more or less ‘ordered’ to engage with a specific game, free play, by its very nature, cannot be instructed. However, it is free play which especially fosters autonomy, creativity, and self-exploration – goals which are often stated by educational programmes. The question is if it is at all possible to implement free play in this sense into the curriculum and if objects and situations can be designed to allow interactions in form of free play but also in form of a goal-directed pursue.

Students of the MA programme Child Culture Design explored together with art teacher training students at HDK how teaching situations can be designed so that secondary school pupils can choose to approach a topic through play or through goal-directed activities. Sutton-Smith’97 rhetorics of play in cultural discourses were the conceptual starting point for this project. Consequences of this approach were reaching much further than providing artefacts helping to reach a pre-determined goal. For example looking at the choice to play or not through rhetoric of progress resulted in questioning the power relationships between pupils and teachers. The rhetoric of fate could mean that the concrete outcome of a lesson would be unknown; chance could be a guiding force. The rhetoric of frivolity could mean that a farce could be used to explore and question the meaning of a topic.

Four groups of students chose one art curriculum topic and one rhetoric of play. In a three-week project each group designed, together with secondary school pupils from Gothenburg, Sweden a situation and material for art class. The results were exhibited and open for discussion with pupils, teachers and the general public. The presentation will contain the results and arising questions for design in the context of free play in secondary school.

SYMPOSIUM 5
TOYS IN GREEK AND ROMAN ANTIQUITY

Chair: Véronique Dasen

University of Fribourg
Switzerland

Four contributions will explore the changing function of toys in Greek and Roman culture according to their materiality and contexts. Children with different types of wheel carts are thus depicted on a large number of Classical Greek vases and funerary monuments. A typology will be attempted, addressing issues relating to gender (do girls and boys equally play with them?), children's agency (how does one play, alone or in group?) as well as a specific discourse relating to the construction of the citizen. Some toys are offered to the gods, such as balls or tops, at rites of passage associated with coming of age, in particular marriage. Very often, as in Etruria, it is not the real toy but a substitute made of clay that is found in the sanctuaries. The change of materiality is part of the new role of the object, no more functional as a toy. The identity of the toy also changes according to time and place. Hoops, for example, are regarded as a Greek game in Rome, and played only by boys. But is a toy properly, or a training device in the gymnasium? In funerary contexts, the toy assumes a new, symbolic function relating to the fate of its most famous player, Ganymedes. If toys are objects, could a living animal be regarded as a toy in antiquity? A detailed survey of Greco-Roman literary and iconographic sources reveals a variety of situations where animals are toys for the gods as well as for the humans, children and adults.

WHEEL CARTS FOR ANCIENT GREEK CHILDREN

Hanna Ammar

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Switzerland

The subject is part of a recently started doctoral thesis on "Childhood at play" in the classical Greek world under the direction of Prof. Véronique Dasen, University of Fribourg as part of the ERC project "Locus Ludi. The cultural fabric of play and games in classical antiquity".

My presentation will be based on my catalogue of depictions of children at play in Classical Greek art, in particular on a type of miniature wine jug called *chous* (plural *choes*) as well as on other types of vessels with similar depictions of children. On these objects, produced in Athens in the second half of the fifth and fourth centuries BC, many scenes show children – boys and girls – of various ages, from the crawling toddler to the teenager, who engage in playful activities, alone or in small groups. A cart with wheels, often a simple wooden stick used as a handle connected to a disc as wheel, is manipulated by children in many scenes. More complex carts are also present, some being miniature chariots driven by small animals (dogs, goats...).

The function of this toy, its fabrication and context of use, is debated by many modern authors. Was it made by specialised craftsmen, by the parents or by the child? When was it offered? At a special occasion, such as a religious feast, at a specific age? In iconography: is it a gender marker, reserved for little boys as on the funerary stelae of the same period; were girls not depicted with such toys? Is it an age class identifier, used to evoke the learning of walking by the little ones? The comparison of images, textual and archaeological sources will throw another light on the nature and function of this object. A typology has never been attempted. We will aim at providing one, reflecting on the variations of size, shape and uses (walking, running, carrying another child, an animal...). Did the shape vary according to the age of the owner or to other criteria? We will demonstrate that the object depicted on the vases must be understood as part of a visual discourse on the making of a citizen.

HOOPS AND COMING OF AGE IN GREEK AND ROMAN ANTIQUITY

Véronique Dasen

University of Fribourg
Switzerland

This paper will be devoted to a toy seemingly simple, but culturally very complex, the hoop in Greek and Roman antiquity. Usually made of wood or metal, none of them seems to have survived archaeologically, but many depictions and a few texts witness its use and can help reconstructing its appearance and ergonomics.

Its interest is many fold and this paper will present the first results of a research on its history in Greek and Roman cultures undertaken within the ERC project *Locus Ludi*. On a gender level, it is associated with physical training in the gymnasium, and it seems to have been only used by boys, and only until the transition to adulthood. Medical authors of the classical Greek and Roman imperial periods (Hippocrates, Antyllus) recommend its use because it contributes to shaping a harmonious body. On a metaphorical level, it is associated with the figure of Ganymedes, the eternal youth, loved and seduced by Zeus. The depiction of the young man also refers to the immortal glory provided by beauty, *charis*. On a multicultural level, the hoop has also strong ethnic associations. In Rome, playing the hoop was seen as a typical Greek pastime, and an elite one. Youth playing the hoop in Roman art are thus nude like Greek Ephebes. The play was part of athletic competitions on the Field of Mars (Campus Martius) in Rome, as several depictions show Erotes, too, playing the hoop. On a religious level, the hoop alludes to a movement with cosmological association. Zodiacal rings are thus sometimes hooplike in Roman art.

TOYS FOR THE GODS: CLAY AND JEWELLERY TOYS IN LAVINIUM AND ETRURIA

Émilie Thibaut-Fréville

University of Amiens
France

In different sanctuaries of Central Italy and Etruria, such as Lavinium, Gabii, or Nemi for the Latium, Cerveteri, Tessennano, or Veio in Etruria, statues representing young women and young men, as well as little girls and little boys, holding balls, birds, tops, fruits or jewellery were discovered. Researchers have demonstrated that the personality of the deity honoured in the sanctuary could explain these types of offerings. In order to investigate in depth the reason of this votive context, my presentation will compare archaeological finds with Greek as well as Latin authors who explain the function of these objects.

The study of these offerings was part of my PhD thesis entitled “*Les rites féminins dans les sanctuaires du Latium et de l’Étrurie méridionale (IV^e siècle av. J.-C. – I^{er} siècle apr. J.-C.)*” (Amiens University, 2016). I analysed the different types of offerings found in the sanctuaries of these two regions. I observed that statues representing children and young people were often associated with deities guarding the transition from the wild nature of youth to marriage, or Chthonian gods, with sanctuaries situated outside towns. Thus, for example, Juno was honoured in Gabii as a deity protecting marriage; in Nemi, Diana watched over the transition of young individuals to the world of adulthood, also in the form of Minerve and Menerva in Lavinium or Portonaccio (Veio); however, these two divinities were also Chthonian. So they may, too, have been honoured in order to avoid premature death, before becoming adult, like Apollo Soranus, in Tessennano.

These offerings can be divided into two groups. The first one included statues of children holding toys, usually balls or tops, or animals, especially birds. These children displayed both their wealth and their education. The second group included statues of young men and women in adult clothes, with jewellery for young women, holding their last toys, usually balls, and fruits. I can affirm they were certainly offered at a time of transition from childhood to adulthood thanks to external evidence. Fruits, like pomegranate, which had some pips, symbolized the most important female role; fertility in marriage and participated to love. Moreover, in the same sanctuaries, statuettes looked like a kind of “dolls” because of their physical similarities with true dolls, were discovered. These “dolls” may allude to the future role of women in the community, because when they were a child, young women played with the dolls and could learn how to take care of babies. That is why they offered them to show they were ready to occupy their rank in their community. Others statues may display the attractiveness of the future bride. Finally, the location of the sanctuary, outside the towns, reflects this transition stage, giving up childhood to become adult.

The presentation will discuss the types of toys appearing in sanctuaries, according to sex and gender, and attempt to examine their cultural and religious meaning in a votive context in Central Italy and Etruria (4th cent. BC to 1st cent. AD).

**WHEN ANIMALS WERE TOYS.
AN INSIGHT INTO ANCIENT GRECO-ROMAN ATTITUDES TO ANIMALS AND TOYS**

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Over the last twenty or thirty years, many studies in the field of science and humanities have argued for the extension to non-human animals of categories which were previously only thought of as human such as those of ‘subjectivity’ or ‘agency’.

As a consequence of this attitude change, animals are now considered as companions or partners in a reciprocal relationship, they are humanised or treated in the same way as persons may be rather than simply objects to be manipulated by adults, in experimental research or by children in their recreational activities.

But what about Greco-Roman antiquity? Can we assume or prove the same shared attitudes in ancient sources when it comes to important cultural distinctions such as inanimate v. animate, plaything v. subject endowed with agency, that is to say animals v. toys?

Through a detailed survey on the corpus of the ancient Greek treatise *De natura animalium*, this paper aims at collecting terms, phrases, and articulated social situations where animals are labelled and thought of as plaything and toys (*ἄ θύρματα*) or simply amusements (*deliciae*) for children, adults, and deities too.

By considering the testimony provided by clay sculptures representing animals, it is possible to account for different cultural representations of (animated) toys in Greco-Roman culture.

PAPERS

TOYS AND ACTIVE DISASSEMBLY

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Other than toys which may become collector's items, for example, train sets and teddy bears, the vast majority of toys in the UK face an EoL (End-of-Life) scenario, as landfill. Waste management hierarchy categorises EoL on a sliding scale of desirability as; prevention, reduction, reuse, recycling, energy recovery and finally, the least desirable, disposal (landfill). Occasionally the hierarchy is simplified into the "3Rs" (Reduce, Reuse and Recycle). One means to minimise the volume of toys entering the waste stream is Active Disassembly.

Traditionally, recovery of components parts required manual disassembly - removal of screws, for example - and human intervention in separating the components into plastics, metals and electronics. Without consideration for disassembly in the design phase, manual disassembly is time consuming and only economically viable in high value goods, for example mobile phones (retrieval of toxic and valuable metals contained within the electronic systems). Active disassembly removes the need for manual intervention.

In the UK, the BTHA (British Toy and Hobby Association) has been promoting awareness of the environmental issues and the impact of toys, specifically, toy packaging, on the waste stream. This has resulted in minimising the use of plastic vacuum moulded packaging and better use of recycled cardboard. However, the impact of the toys themselves, in the waste stream, is arguably yet to be seriously considered by the toy industry internationally.

In the UK there is little short-term motivation for manufacturers to adopt radical technologies, especially considering the lack of legislative drivers. Manufacturers and designers have however become increasingly subject to pressures regarding EoL of their respective products. The European Union RoHS Directive (Restriction of Hazardous Substances), implemented in 2006, restricted the use of specific hazardous materials in manufacture. The RoHS directive is closely linked to the WEEE (Waste Electrical and Electronic Equipment) which sets targets for electrical goods, to address the problem of toxic electronic waste. The second generation RoHS II, implemented 2013, has been expanded to include toys. It is likely that over the next few years this trend will continue and further substance restrictions added.

This recently introduced European Union obligation, for toy manufacturers and designers to facilitate the recovery of electronic components, promotes research and subsequent implementation of cost effective systems to aid disassembly of toys. While there are initial implementation costs, Active Disassembly aids in minimising the number of fixings and fasteners required, and the creation of large volumes of clean, separated polymer for recycling. In January 2018, China introduced a total ban on the import of plastic waste. The ban is likely to lead to an international stockpiling of plastic waste and a move towards incineration and landfill.

Public and legislative opinion tends to look favourably on industries which are actively concerned about the environment; consequently, toy manufactures and designers have an important role, due the ubiquitous nature of toys. Active Disassembly may be one of the many building blocks, on which the toy industry could build, to ensure a healthy environment for future generations.

BLUE BOT PROJECT

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Serious digital games are attractive educational tools and resources which are undoubtedly relevant in appropriate contexts and situations (Alvarez et al., 2016). Faced with growing screen consumption by young children and its dangers on the development of several capacities, the exposure of kindergarten children is questionable (Tisseron, 2013). In order to benefit from the potential of serious digital games, without achieving overexposure to the screen, the use of toys such robots like Blue Bot seem relevant

For forty years, robotics has been the subject of interesting applications in the field of education. This educational trend called “educational robotics” is aimed at the public (from kindergarten to adult education) with a goal of initiation into robotics and computer science. Its playful aspects and tangible interfaces favour an early understanding of the concepts of robotics and programming (Komis, Misirli, 2013). However, serious digital game terminals offer advantages in terms of cost (often free, like the online game robot Blue Bot) and dissemination within the school context.

This paper presents the results of the “Blue Bot research” which was conducted in 2017. It is a comparative study dedicated to introduce robotics and computer science to children in their final kindergarten year. The experiment was carried out in 35 classrooms from Hauts-de-France. The serious gaming activity proposed three different modalities: the body, the robot and digital tablet. We will present the results of the various pre- and post-test studies carried out during the experimentation. The idea is thus to discuss the different modalities deployed and to study the different combinations: robot + body, robot + tablet PC, body + Tablet PC, etc. We will focus on the robotic aspect, which in this experiment, takes the form of a toy called “Blue Bot”.

NARRATIVE CREATION WITH STORYCUBES VERSUS COLLECTIVE ACADEMIC WRITING

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StoryCubes is a game consisting of nine dice, illustrated with various pictures, through which children can create stories playfully together. Through the play children create stories, much as they would as part of their daily school activities.

This presentation is divided in two sections. The first, conforms to the French ergonomics method, in which children's activity are analysed using the instrumental approach (Rabardel, 1995) which aids understanding the means of activity from the subject's point of view, here in particular, the child's viewpoint. We focus on what children do and observe the variations in their activities between, on one hand, the creation of narrative with StoryCubes game, and on the other, the collective writing of a tale in an elementary classroom. To achieve this, we capture the entire pedagogical sequence of the collaborative tale from within the classroom each day and in addition fifteen play sessions of StoryCubes, which take place during break time. Thanks to StoryCubes we observe the power of the game to unlock children's expression facilitating novel non-linear narratives. We detect a creative manipulation of contents due to the divided elements scattered on the six faces of each dice. In addition, after the roll of the dice, the creation of surprising and novel turns in the nature of the narrative.

The second part of this presentation demonstrates a co-design process of hybrid tools supporting narrative; children are included as design partners (Druin, 2002). It follows a concept in use, and not only the use for, due to the inclusion of feedback from what is important to the children and by observing their various activities. Furthermore, this tool is advantageous on two levels: firstly, it includes digital and tangible elements to allow manipulation and exploration, and secondly, it is positioned between game and pedagogical devices to involve and motivate children as much as possible.

DIGITALISATION OF THE BOARD, DIGITALISATION OF THE EXPERIENCE? USAGE AND PERCEPTION OF DIGITISED BOARDGAME BY CORE GAMER

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Since the democratization of home computers, many traditional games have been digitized (for example chess, mahjong, poker, and so on) offering play against an A.I. agent or online with another player. These games became associated and often included with most operating systems; some of them remain very popular. It comes as no surprise, then, that modern board games should be found in numerous forms. One of the first brands to offer the digital version of board games was the German website Brettspielwelt in 2000. Since then, many other websites offer (or have offered) access to a variety of modern board games and some editors have created online versions of their games themselves.

The focus of my thesis is the interaction between players in face to face gaming encounters and I was interested in questioning some players regarding their experiences. I believe it is an opportunity to compare media (physical versus digital) and question what is perceived as central to identify an object as a board game, as well as specifics in their handling and uses. At the same time, the social interaction involved can be studied from both the real life and the digital event, opening opportunities to study compelling connections within media literacy fields of study.

A few interviews and various in-session comments highlighted how some chains of operations are structuring moments of play and chat for each player, and the importance of time management as a form of courtesy. On a more exploratory note, this discussion showed how most of the core player had a distinct approach to both media, with specific ways to involve themselves with the game and the other players. Both of them still included a wider engagement into a common practice of modern board game.

**INVESTIGATING THE VIEWS OF THE CHILDREN AND THE PARENTS
WHO USE BURSA ALI PAŞA TOY LIBRARY**

**Handan Asûde Başal, Pınar Bağçeli Kahraman
Elvan Şahin Zeteroğlu, Meral Taner Derman**

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Toy libraries are source centres which arguably provide the best educational materials meeting children's developmental and educational needs, through "*borrowing method*". The general purpose of a toy library; is to support mental, physical and psycho-social development of children, primarily those from lower socio-economic backgrounds, through borrowing and intended to develop the child's imagination. Thus it provides an opportunity to play games through lending toys that contribute to children's development.

The aim of this study is to examine the views of children and parents who use the Bursa Ali Paşa Toy Library, which was a part of the joint project of Uludağ University and Bursa Metropolitan Municipality. "Travelling-Educational Toy Library Project" was initially carried out, in Turkey, by the two researchers mentioned. As a result of the literature search, it was noted that this study was the first both in Turkey and in the world. Therefore no other resources were found to be useful reference material. Together with general search model, the research was conducted using a qualitative research method 53 parents and the children of the three parents, who attend the library, participated in the study.

50 parents, who use Bursa Ali Paşa Toy Library, were given the questionnaire to complete; three parents were interviewed and the children of these three parents were interviewed individually.

As a result of the research, it was evident that the parents considered the toy library as an extremely useful facility and recommend to their peers. Most of the parents who participated in the study stated that they found the toys from the library to be healthy and of good quality. Also they expressed that their children tended to play with the every toy in the library. It was determined that the parents within the research expected the toy library to have a rich variety of toys and books, workshop studies appropriate for children and different social activities.

“WHAT A MESS!”
AN INVENTORY OF CHILDREN'S MATERIAL CULTURE

Vincent Berry

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France

Posters of dogs, cats, singers or *Pokémon*, figures of *Naruto*, *Dragon Ball* or *Totally Spies*, sports medals, *Beyblade* toys, duvets with the effigy of *Cars* characters, electronic games, televisions, “girlfriend photos”, Pucca Shirts, “Mother's Day gifts”, *Operation*, *Monopoly*, rocking horses, “disco ball”, Dinosaurs Kings cards, *Spiderman* underwear, earth globes, ...

Here are few objects that were encountered during the survey on “children's belongings in the family space” (Survey supported by the French National Research Agency). In the course of this study, which involved the analysis of 36 children's rooms based on the “guided tour” model (Dauphagne *et al.*, 2012), more than 500 objects have been inventoried, classified and analysed in a database. This cataloguing was not intended to be representative or ideal-typical generalization of the bedrooms. It mainly focused on mapping the objects found and evoked in these places in order to identify sets of them: toys, board games, video games, decorations, musical instruments, school supplies, clothing, and furniture. Attention was paid to the type of object and its use as well as to the origin of its acquisition: inheritance from parents, gifts from friends, purchase from grandparents, acquired through pocket money... all sorts of modalities have been identified and coded.

After recalling the methods of the survey, this communication proposes an inventory of objects found in children's bedrooms and, beyond a simple cataloguing, explores in a relational way through the analysis of correspondences, the way in which heterogeneous material goods make meaning and coherence as a “system of objects” (Baudrillard 1978) related to the social properties of the families. Imported by parents, grandparents or by the children themselves, sometimes even without any explicit knowledge of the actors (“I don't know where it comes from” have repeatedly pointed out many adults and children), the children's goods appear as relevant indicators on the “educational styles” (Kellerhals and al. 1992) in progress in families, on their modes and their relationship to the consumption of market products and more generally on the tensions within the contemporary childhood is built.

ESPORTS AND MATERIAL CULTURE: CONTROLLERS INCORPORATION IN FIGHTING VIDEO GAMES

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Esports refers to competitive video-gaming (Wagner, 2006; Taylor, 2012; Hamari & Sjöblom, 2017) and covers a wide variety of platforms (consoles, PC, mobiles), disciplines (shooting games, real time strategy games, sports video games, fighting games...), video games titles (*Counter-Strike*, *Starcraft*, *FIFA*, *Tekken*...) and therefore control devices (keyboard, mouse, arcade stick, fighting pad...).

To beat their opponents, generally players must demonstrate fine motor skill expertise (Reeves et al., 2009; Witkowski, 2012; Hilvoorde & Pot, 2016). Control devices are therefore the object of all the players' attentions, because they are the support of input accuracy.

In order to understand how players perform on their control devices, filmed observations focused on gamers' motor skills during eight French esports gatherings, and semi-directive interviews were conducted with four French competitive fighting games players.

Our results reveal that players automatise the various combinations of accurate and rhythmic inputs on their controllers. This ability to quickly adapt motor skills on controllers according to the actions of the opponent's avatar requires a lot of repetition during training in order to teach to the fingers where the controls are located.

The controller's incorporation (Warnier, 1999; Roustan, 2003) then allows players to develop "finger memory" until the actions they perform to control their virtual character become automatic. From a certain level of expertise, the player unconsciously relies on the execution of these automatic inputs, and can concentrate, not on their fingers, but on the virtual environment in which their character evolves, and therefore on the different strategies they implements.

Controllers thus participate to the players' subjectification. Since the players incorporate the controllers in regular practice, they build their identity as fighting games players. The players thus attribute a secondary symbolic and social function to their arcade stick or fighting pad (in addition to the basic utility function). Using this type of controller means for these players that they are belonging to a group that distinguishes itself from other esports disciplines by creating its own specific material culture, on which they act and vice versa.

HOW TO PLAY WITHOUT TOYS? A PLAYWORK EXPERIMENTATION IN PARIS

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Following a European research project, this presentation aims to present the specific playful material culture linked to the Anglo-Saxon tradition of playwork descending from adventure playgrounds. Initiated and founded by and based on the work of architects—Carl Theodor Sørensen and Lady Marjory Allen de Hurtwood among others, the “loose parts theory” of Simon Nicholson (1971, 1972) proposes an ecological approach to designing places to play with elements or objects that were not designed to be “toys” or to be played by children. Until recently, many works were published about this theory (Almon, 2017; Daly & Beloglovsky, 2014; Maxwell, Mitchell, & Evans, 2008) including a large literature review (Gibson, Cornell, & Gill, 2017).

During the experimentation of a “playbox” set up in the playground of two structures housing children in Paris, we had the opportunity to observe and question children about play practices before and after provision of these undetermined elements (Brougère, Roucou, Besse-Patin, & Claude, 2016). Faithful to the original project designed by *Children’s Scrapstore*, these items are recycled and reused – recovered in scrapstores – and selected according to several criteria to estimate their “play value” (Newstead, 2010) and, based on a playground audit of opportunities to play offered, a second selection is made. According to the principles of the playwork (Playwork Principles Scrutiny Group, 2005), it is thus a question to provide an environment fit to facilitate children’s play and this, all the more so, when these same playgrounds appear to be at least “deserted” (Bour, 2007; Thomson, 2014).

In this enrichment, loose parts have an important role to take because of their qualities that we will analyse. How do children play with these objects that are not toys? How do these objects affect children’s playful practices? This is what we propose to discuss in this contribution starting from the notions of interpretation and “*bricolage*” (Willett, 2015).

INTRODUCTION OF A NEW DESIGN PARADIGM FOR INVENTING HEALTHY, RESILIENT, EDUCATIVE AND FUN TECHNOLOGIES TO « PLAY WITH FUTURES »

Thomas Bonnacarrere

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France

The presentation introduces and discusses a new technological paradigm based on a model we have created in order to appreciate the ecological crisis in a fun and enlightened way. This paradigm is based on “librism” (Free Software Foundation) as well as both speculative design (Dunne and Raby, 2014) and design fiction (Bleeckler, 2008). These last « research – action » approaches, aim to explore, through technological design, attractive and inspiring futures for mankind. The technologies defined by our new paradigm are named MAGITECH (Mastering the Art of Glocagenuitive Intelligence via Technologies Ecologizing a Cooperating Humanity - Bonnacarrere, 2017). They refer to tools and procedures supporting human evolution. They are designed according to a model we named FAERIE (Fun, Aesthetic, Ergonomic, Regenerative, Interoperable, Empowering), which we will specifically focus on during this lecture.

Our lecture targets the people (researchers, engineers, makers...) and communities involved in free technological inventions (based on the definition by the Free Software Foundation) within ecosystems such as fab lab, that try to develop empowering technologies for a worldwide audience. We would like to focus on the needs for « structurally intelligent » system development to empower people and communities in growing complexity apprehension defined by a global “megacrisis” (ecological, energetic, demographic, economic and social).

Based on our new paradigm, we would like to discuss with the audience possible new means to develop inspiring “low-techs” (Bihouix, 2014) on a cooperative open and peer-to-peer basis in order to understand complex and fundamental issues such as the energy crisis and scarcity of resources necessary to create « high-tech » systems (oil, gold, copper...).

Methodology: We are engaged in a research-action project with a team of people with varied profiles: computer researcher, mechanical engineer and artists. This prototype project aims at hybridizing knowledge for popular education (Maurel, 2008) thanks to a scientific tool we have developed during my PhD.

DESIGNING TOYS FOR CHILDREN WITH CEREBRAL PALSY
[Junior **ITRA prize** for Outstanding Toy Research (sponsored by the BTHA)]

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This study presents an investigation into designing toys for encouraging peer-to-peer social interactions of children with cerebral palsy as a part of developing their social competence. The focus is on developing a new model of, and guidelines for designing toys for engaging children in peer interactions during play sessions. According to the statistics of the National Health Service, it is estimated that annually in the UK, nearly 1800 children are diagnosed with cerebral palsy (NHS 2016). It is recognised that these children often have reduced social engagement, yet socialization plays a fundamental role in children's development. In spite of this need, there are few toys specifically developed for children with cerebral palsy, and even fewer which support peer socialisation.

We offer a new model for toy design to guide designers in creating toys for the development of the social competence of children with cerebral palsy. Here the designer's task shifts to constructing semiotic content that can trigger cognitive, emotional and physical processes of children to encourage interactions with the designed objects and to build social interactions through these objects. This allows children to take the initiative and to think beyond the immediate interaction with an object. Toys should trigger interactions between children not only around itself but by means of itself.

Based on this model, design guidelines have been developed, integrating two interrelated sets of indicators. The first set relates to the design position and comprises child friendly design criteria. The second, to the social purpose comprising indicators of social competence, such as social skills and self-confidence. Based on the guidelines, a number of design ideas were developed, using ideation, intuitive hand sketching and brainstorming.

The research is interdisciplinary and steered by a social perspective on disability. It combines theoretical investigation with design practice within an action research approach. A child-centred design approach was applied with adaptation for purposes of the study. Observations of children with cerebral palsy and interviews with their parents are employed for collecting data about children's social interactions before and after the design intervention in order to determine the effectiveness of the suggested model.

The study provides new understandings of designing toys for the development of social competence for children with cerebral palsy and provides a set of design guidelines for these specialist toys.

ANALYSIS OF THE TOYS OWNED AT HOME BY 4-5 YEAR-OLD CHILDREN AND THE TOYS THEY PREFER TO PLAY WITH

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The purpose of the research is to analyse toys owned at home by 4-5 year-old children and their toy preferences. 455 children aged 4-5, going to 8 independent nursery schools, operating on the European Side of Istanbul, under the Ministry of Education in 2015-2016 Academic Year, and their parents were included in the research. The "Personal Information Form" developed by the researcher and the "Toy Preference Form (TPF)" developed by Onur were utilised in this research as data collection tools. The toys used in the OTF were selected by collecting, under the general headings, those mentioned in the literature and in daily use. These titles are classified as; babies, miniature objects, manipulative, electronic, handicapped, educational, desktop, musical, moving toys, gaming materials, current heroes, models, violent toys and others. Parents filled out their personal information details and answered the question "what kind of toys do your children have at home?" The answers were grouped according to the toy classification as categorized by Onur. Taking the necessary ethical rules into consideration, the toys that were photographed were placed in a file in accordance with the category order. The picture cards with the toys were shown to the children and they were asked which toy they preferred. The parents' choice of toys for their children, were compared with the toys their children wanted to own. The data obtained from the research was digitised and independent samples were tested using t-test and one-way analysis of variance (ANOVA). When the findings were analysed, it was observed that; the children mostly preferred to play with miniature objects, heroes of the time and moving toys. 5-year-old children were observed to prefer manipulative toys more than the 4-year-old children. The girls were observed to prefer dolls/plush/animals, miniature objects and handmade toys more than the boys; whereas the boys were observed to prefer manipulative toys, electronic toys, desktop toys, musical toys, model toys and violent toys more than the girls. Looking at the findings of the toys owned at home, it was found that the children mostly had miniature objects, manipulative toys and dolls/plush/animals at home. 4-year-old children were observed to have a greater number of desktop toys compared to 5-year-old children. While the girls were observed to have dolls/plush/animals, miniature objects and handmade toys mostly, the boys were observed to have electronic toys, musical toys, game stuff and violent toys.

**AN IMAGINATIVE SPACE?
AN ETHNOGRAPHIC STUDY OF TOYS IN A WALDORF PRESCHOOL**

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This ethnographic study explores children's relationships to toys in an early childhood educational setting which strives to strengthen the imagination of children through the environment and its artefacts, including toys. A key idea of the Waldorf preschool's educational practice is that form and colour stimulates not only sense impressions, but also thoughts and emotions. Surprisingly, the toys provided can be considered as rather simple objects that do not call for much attention: They are all made of natural materials, often hand made by teachers and children. Besides soft dolls and animals with minimal facial features and wooden vehicles that are not highly formed and detailed, the limited selection of toys mostly consists of play material such as plain cloth, pieces of fur and wool, building blocks of varying shapes and objects collected outdoor like stones, shells and branches. In contrast to municipal preschools in Sweden, there are no computers, televisions or commercial plastic toys which reference children's contemporary popular culture. Against this background, we ask in what ways do these specific toys contribute to the growing imagination of children.

Drawing on moral philosopher Iris Murdoch's understanding of the concepts of *imagination*, *fantasy* and *attention*, the aim of the study is to examine the children's relationships to the toys in their mutual play. In the analysis we distinguish between two aspects of the ability to imagine. Firstly, *imagination* is understood as a broad exploration of different ways of experiencing and narrating life. It allows one's own narratives to be continuously recreated in relation to the surrounding environment. Secondly, *fantasy* is a form of imagination that centres on the individual child's needs and desires rather than the meeting of narratives. *Imagination* and *fantasy* influence the child in different ways. The former implies an expansion of self towards new ways of being and acting in the world. The latter is instead characterized by a narrowness of perspective that offers few new possibilities. Imagination is made possible in the interplay between the individual and their surrounding world, which challenges the boundaries for what may be imagined. Objects like toys, which children may be encouraged to interact with, can thus influence the opportunities for expanded perspectives and rewarding relationships.

The data consists of field notes, audio recordings, drawings and photos from fieldwork conducted over a period of 1.5 years in a Waldorf preschool. The methods used in this ethnographic study are mainly participant observations and in-depth interviews with the preschool teachers. The group of children in focus consists of 17 boys and girls, ages 3-7 years.

The result of the study indicates that the children's relationship to their toys is central to what makes *imagination* possible. As the preschool teachers and children make, mend, play and take care of the toys, they direct the attention to the objects rather than themselves. The study also shows that the toys in this specific preschool setting open up space for the imagination of the children. The toys are open-ended and interchangeable and thus invite the children to create mutual and unpredictable narratives with a diversity of voices in their play.

POKÉMON AS HYBRID VIRTUAL TOYS: FRIENDS, FOES OR TOOLS?

Quentin Gervasoni

Université Paris 13-Sorbonne Paris Cité
France

This presentation is based on ongoing research which is part of the author's dissertation for a Master of Sciences du jeu at the University Paris 13. This dissertation is about the diversity of learning in the context of playing Pokémon handheld console video games, mainly Pokémon Ultra Sun/Ultra Moon (currently the last versions of the game, both released in 2017). Pokémon creatures can be considered virtual toys, in the same way the mid-to-late 90's Tamagotchi phenomenon (Donath, 2004). However, while Tamagotchi was about taking care of a virtual toy, Pokémon games are mainly about collecting the creatures, and using them for battle. Being a computer based game, and a pretty linear, strongly structured one at that, the game necessarily implies a utilitarian relationship to Pokémon creatures to advance in the game. Nevertheless, the discourse, omnipresent in the games and in the animated series, about the bond between a trainer and its Pokémon, also calls for an affective relationship with the creatures. This allows for a complex relationship between the player and its Pokémon, which can involve its looks, rarity, and many more characteristics useful for fighting, much like what has been observed by Gilles Brougère (2004) with the Pokémon trading cards. This leads us to consider the contributions of situated, distributed, and embodied cognition paradigm, in a socio-anthropological approach.

Drawing on semi-directive individual interviews with players aged 11 to 14, and with young adult players in their 20's, as well as the observation of playing sessions, the aim of this presentation is to shed light on the bonds players may create with their virtual Pokémon. An analysis of findings on this matter regarding physical, virtual, traditional, and transmedia toys will be comparable with the findings from this study. Our sample being older than what can be expected of a study on children's toys, offers the opportunity to challenge the idea of toys as a "kid's stuff". The presentation will explore if and how the transmedia (Jenkins, 2006) and hybrid nature of Pokémon creatures influence the way these "virtual toys" are played and bonded with, the values they give their toys .

Initial interviews suggest that characteristics such as Pokémon sex, type, fighting statistics, and their status in the Pokémon transmedia franchise play an important part in how the players view and treat their Pokémon. The influence of the characteristics inherent to the Pokémon creatures also appear to be intertwined with the player's understanding and beliefs about both the game mechanics and the natural world in determining how they view and interact with their Pokémon.

ARCHITECTURAL TOYS THE CONSTRUCTION OF AN EDUCATION

Marco Ginoulhiac

Universidade do Porto
Portugal

Towards the end of the 19th century and the beginning of the 20th century, the toy market created a number of toys based on an emerging educational method underlined by a constructivist approach. Indeed, both in Europe and United States, many companies were inspired by what was happening, almost at the same time, in several schools of Art and Architecture, in which the design studio teaching was based on an “atelier” system and pupils developed skills and autonomy through their own action.

The paradigm of practice based on task simulation, either scientific or artistic, is still clearly visible in a number of toys which promoted skills development through playing. German Anker blocks, Meccano or Guilbert construction sets, are perfect examples of toys which require intellectual and manual skills to successfully complete a specific exercise or experiment.

The design of these kinds of toys reflected the shift in educational paradigms. The classical method was based on reproducing an existing solution, supported by instruction booklets provided by the toy’s manufacturer. The new method afforded the user the opportunity to create something novel, not directed or limited by illustrations.

These differences were reflected not only in the references provided by the toy companies or filtered through an adult worldview, but also in the toy design itself. Indeed, some construction sets were developed to be assembled in a limited number of forms, while others permitted a wide variety of permutations including the construction of unconventional shapes which may not be recognized as everyday objects like vehicles or buildings.

Based on this background, this article highlights the idea that some toys facilitate actions which are similar to the propaedeutic exercises set, for example, during the first year in several architecture schools. Therefore, it is possible to consider specific kinds of toys, called architectural toys, as real educational devices.

DOLL-ERS AND CENTS: CHILDHOOD, TOYS, AND FINANCIAL EDUCATION

Joyce Goggin

University of Amsterdam
Netherlands

In this talk I will adapt Randy Martin's insights from *The Financialization of Daily Life* on financial education, games and toys as the starting point for a discussion of history of the economic education of children and, on the other hand, the contemporary trend to gamify finance for adults. Specifically, I will discuss various developments such as play money and magic banks from the 19th century, through 20th century toys like the Ginger Doll that came with her own currency called the "Doll-er", and games like *Monopoly*, all of which were developed for the ludic instruction of children in the mechanisms of finance. In so doing, I will draw on the work of Maman and Rosenhek on the topic of toys and financial education, as well as on Gary Cross and Christopher Noxon's work on the topic of targeting children through toys and cute aesthetics as subjects of financialization. At the same time I will also argue that this tendency is met in the real, "grown up" world through current trends to gamify finance and banking practices which encourage us to trade, bank and file income tax reports through ludic and often cute interfaces, while adapting arguments presented in current scholarship on gamification, play and cute aesthetics (Dale et al).

CONNECTED GRANDPARENTS: ARE SMART TOYS THE FUTURE FOR INTERGENERATIONAL PLAY?

Amanda Gummer, Anna Taylor

Fundamentally Children
United Kingdom

Previous research has described how digital games can enhance interaction between older (55-81 year-olds) and younger (4-22 year-olds) players (see De la Hera et al., 2017 for a review). However, the majority of this research has focused on the use of games consoles (e.g. Aarsand et al., 2007).

The way children access digital games has seen huge changes in recent years, with tablet PCs now more popular than games consoles, within the 5 to 15 year-old age range (Ofcom, 2011-2017) and sales of connected toys (also known as smart toys, or IoT toys) expected to triple over the next five years (Juniper Research, 2017). We therefore propose a small-scale study exploring whether the benefits of digital games extend to connected toys.

We will employ a mixed methods approach to investigate older people's current attitudes towards connected toys and the effect of these toys on intergenerational play between grandparents and grandchildren. This will include a paper-based questionnaire, measuring the attitudes of 50 older people towards digital play, including connected toys. This will indicate whether older people generally have a positive or negative opinion of connected toys, and whether this varies by age, gender, and self-perceived digital literacy.

Additionally, we will invite eight grandparents and their grandchildren (aged 8 to 10 years old, to allow for comparison with previous digital game research) to play with a connected toy. As the cooperative element of digital games has been identified as an important feature of the enjoyment for both older and younger parties (De la Hera et al., 2017), we will use a connected toy that encourages this play pattern.

These sessions will be recorded, and the videos analysed for evidence that demonstrates the exchange of knowledge and skills across the two generations, one of the benefits of digital games identified by De la Hera et al. Furthermore. Previous research indicates that the controls of a console game presents barriers to the older, less experienced player (e.g. Aarsand et al., 2007, excerpt 2, page 244). We will therefore analyse from the recorded sessions whether similar barriers are present when connected toys are played with, as these use tangible objects which more closely resemble traditional, physical toys.

It has also been suggested by De la Hera et al. that digital games can lead to reinforcement of family relationships and increased understanding of the other generation. To investigate this, we will carry out semi-structured interviews with the grandparents and grandchildren, before and after the play session.

**RETHINKING ADULT TOY PLAY:
THE IMAGINATIVE, LUDIC, OBJECT-INTERACTIONS OF
MATURE PLAYERS IN THE 21ST CENTURY**

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Toys are first and foremost considered to belong to children's culture. The rhetoric of toys encompasses adult relationships with these objects for the most part in relation to toy design and at best, as addressing adults as collectors of toys, but not players of them. Even the International Toy Research Association presently states on its website that the association was created "in order to broaden and spread knowledge about toys and promote the development of good toys for children." Despite growing interest of adults' toward toys, the discussion of, for example, good toy design and play value from the perspective of mature toy players is missing from theoretical writings altogether. Again, as the prominent rhetorics of adult interactions with toys relate distinctively to hobbying and collecting, they are at best said to be 'playful' activities but not to be considered to represent actual play.

We have come to an age which, according to scholars such as Sutton-Smith (1997), Combs (2000) and Raessens (2006), is more ludic in nature. The time of the ludic turn manifests itself as a time in which *homo ludens* has many ages. There is already a growing interest in adult play, for example, in the context of game studies (Stenros, 2015; Deterding, 2017). A part of this interest is guided by the thought that the mature human also demands play(ful) experiences related to materiality. While there is an ongoing toyification related to other cultural areas, objects and systems other than toys, it is conspicuous that adult relationships with and consumption of actual toys is still mostly restricted to an understanding of these practices as expressions of nostalgia, goal-oriented activities of collecting or the vague way of addressing the object interactions partaken with toys as a form of hobbying.

This presentation challenges participants of the ITRA 2018 Paris conference to rethink adult toy play, by demonstrating evidence for the rich and multifaceted nature of contemporary adult toy play cultures. It is based on a ten year period of extensive research among mature toy players and illustrates the necessity of a shift in thinking about the user-groups of toys. The presentation as a think piece based on long-term, rigorous research, argues for the need to acknowledge adult toy play as an important and growing area of contemporary toy cultures. The presentation summarizes the work of a toy researcher interested in adult toy relations (conducted between years 2008-2018) and has a two-fold agenda: By turning to cultural phenomena of ludification, gamification and toyification, it functions both as a cultural analysis of the ludic zeitgeist, as well as a mapping of what has been learned about adult play in contemporary toy cultures so far. The case studies featured in this presentation have been grounded in multiple readings and analyses of the manifestations of adult toy play as presented in photoplay (or toy photography) displayed on social media, for example, Flickr and Instagram. It is supplemented with participatory observations from toy conventions and thematic interviews. Moreover, research methods include an extensive literary review in connection with doctoral research (Heljakka, 2013) and post-doctoral studies (2014-2017), and empirical studies (based on closer visual analyses of toy collections and qualitative interviews with mature players aged between 25-50+ years) on adult toy play in reference to contemporary character toys such as *My Little Pony*

(Hasbro), doll-types *Blythe* (Tomy Takara), *Ken* (Mattel) and Star Wars toys (by various toy manufacturers).

The results of my studies point to that the role of imagination and capability to become immersed in the toy stories created by oneself and other mature players through object interactions with various character toys – is significant in adult toy play. Contrary to common belief, adults, like children, are capable of creatively cultivating the toys' personalities, material dimensions and even environments of their character toys in their multifaceted forms of play. Consequently, the necessity of the shift in thinking from hobbying, toy collecting and from playfulness as an attitude of the adult toy 'enthusiast' to pure play, allows the inspection of adult interactions with contemporary toy objects as a form of true ludic behaviour. The time has come to acknowledge and address the human adult as – besides a hobbyist, collector and fan of toys – also as a player of these objects.

HYBRID TOYS - HYBRID PLAY?
AN INVESTIGATION OF PRE-SCHOOL CHILDREN AND PLAY VALUE OF
THE INTERNET OF TOYS (IOTOYS)

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Hybrid toys and play challenge a strict dichotomy between physical and digital, non-connected and connected toys by resting on the interaction of material and digital – traditional toys and smart toys (Tyni, Kultima and Mäyrä 2013). Our case study focuses on hybrid toys and play of preschool-aged children to investigate the play value of the emerging field of the Internet of Toys (IoToys) through an inspection of four connected, smart toys.

Toy manufacturers have been keen to encourage parents of young children to access, interact with and move between material and virtual spaces that make up their ‘global toyspace’ in order to enhance the perceived quality of their experiences with smart hybrid toys. Toy companies are demonstrating a desire to foster the notion that “learning happens everywhere” — in all available social hybrid spaces — whether this in the play area of the local shopping mall or play with a smart toy (Nixon 2010). Connected hybrid toys and playing is understood as being part of the Internet of Toys (IoToys) and presents play value with educational possibilities, particularly in informal situations. Learning can happen in the home environment when children learn languages by playing with their smart toys.

This presentation explains a case study conducted with preschool-aged children in Finland. By analysing the results of two group interviews and interactive play tests with 20 preschool-aged children (5 to 6 years of age) in a Finnish group and a Finnish/English speaking bilingual group, we aim to understand how the IoToys, as hybrid playthings, may induce hybrid play. Apart from their educational affordances, we claim that open-ended opportunities with various programmed toys such as the IoToys may enhance children’s own imagination and offer new perspectives on play.

The envisioned play patterns of the IoToys featured in our study (CogniToys Dino, Wonder Workshop’s Dash, Fisher-Price Smart Toy Bear and the Hatchimals that comes with an app), according to the toy marketers, are making of stories, games, jokes, and learning fun facts, play using interactive dialogue and endless possibilities for free play. The main conclusion of our study on the IoToys presents the novel concept of *hybrid play value*, which intertwines digital play affordances with physical play affordances. Digital play affordances include unlimited pre-programmed content, easy-to-update suggestions for play patterns, rich multimodal feedback such as image recognition with smart cards and voice recognition allowing multifaceted interaction with toys. The digital play value of IoToys consist of digital devices, such as the remote control for the Wonder Workshop’s Dash robot, whereas physical play affordances bring unlimited possibilities to use imagination for physically and imaginatively embedded play patterns.

DOLLS IN FOLK TALES AND CHILDREN'S FICTION

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Dolls as toys have well-defined and almost unchanged functional characteristics, from the inexpensive rag dolls through to more costly samples owning rich dowries. Dolls are unique witnesses of childhood history and indicators of a child's social status. Remarkably, dolls often appear in folk tales and children's fiction where from mere playthings they grow into characters endowed with distinct ritual potential and hidden semantics. In a series of folk tales of the Cinderella ilk the doll features as a supernatural helper of the child protagonist. Alexander Afanasyev's *Vasilisa the Beautiful* is the most popular tale of this genre. The doll is left to the child by her deceased mother and can be understood as the woman's otherworldly self, patronizing the orphan girl.

Although considerable research has been devoted to the study of doll characters in children's literature, rather less academic attention has been paid to dolls in folklore. The Aarne-Thompson's *Tale Type Index* refers to only one type of folk tales involving doll characters (560 C, *Doll Producing Gold Stolen and Recovered*). Further Stith Thompson's *Motif-Index of Folk-Literature* presents *Automatic dolls* (D 1620.0.1), *Forgotten fiancé remembered by means of doll* (D2006.1.6), *Dolls becoming Fairies*. (D 435.1.2), *Marriage to dolls* (T 117.8) etc.

A brilliant contribution to the study of folktale dolls was made by the Jungian analyst Clarissa Pinkola Estés. In her work *Women who Run with the Wolves* she interprets the doll helper in *Vasilisa the Beautiful* tale cycle as the heroine's intuition, "the little soul inside the big one", "the treasure of a woman's psyche".

The folktale tradition smoothly develops into literary fairy tales. As a central character the doll first appears in the fairy tale *Adamantina and the Magic Doll* included into Giovanni Francesco Straparola's *The Pleasant Nights (Le Piacevoli Notti)* (1550–1553). This story relates how a doll adopted by a poor girl, provides the family enough money to live comfortably. There is a long list of novels and stories for children where dolls appear as central characters. It includes Carlo Collodi's *Pinocchio* (1883), Evelyn Sharp's *The Doll That Came Straight From Fairyland* (1898), Beatrix Potter's *The Tale of Two Bad Mice* (1904), Frances Hodgson Burnett's *A Little Princess* (1905) etc.

Children's fiction covers almost all aspects of a doll's "life" embracing "birth, marriage and death". Children have a distinctive understanding of time. They often create a playground world with a unique time system. According to the latter the girl child may be a 'mother' with a 'grown up' doll daughter, whereas in the time system of the actual world she is still a child. In a great variety of doll stories we can trace a major narrative device, which can be defined as a unique metamorphosis: dolls are personified or humanized. A reverse, human to doll transformation is found in R.M. Romero's *The Dollmaker of Krakow* (2017) where the child protagonists are changed into dolls. Doll metamorphoses may be used differently depending on the author's intentions and the generic demands of the narrative.

This paper will examine some suggestive correspondences between doll stories in folklore and children's fiction. An attempt will be made to probe a little deeper into children's doll stories and read them as texts leaning heavily on folklore motifs.

TEACHERS AS DESIGNERS OF EDUCATIONAL TOYS AND DIGITAL GAMES

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Playing is one of the most important activities of childhood. It constitutes a basic developmental facet and has a decisive influence on the learning process. Although learning is not the reason why children choose to play, playing is the primary means by which children learn and “learn how to learn”. Through playing, learning-related processes, such as repetition, practice, imitation, exploration and discovery are enhanced and skills necessary for learning, such as internal motivation and engagement, are developed. Advancements in technology created a rapid shift towards digital games, thus making it crucial for education to evolve in order to differentiate between existing learning modes. Educational digital games have the potential to support learning in terms of improving conceptual and epistemological understanding, process skills and practices, strategic thinking, planning, communication, collaboration, decision making and negotiating skills. However, the successful embedding of learning mechanics into game mechanics has proven to be a complex activity. Recent research proposes that in order to achieve intrinsic integration of the learning content into a digital game, educators, as learning experts, should be placed into the designers’ role. However, little research has been carried out in order to reveal the challenges that educators face during such attempts.

The aim of this study was to identify the difficulties which educators encounter when attempting to design educational toys and transfer the design into a digital game with educational value. For the purpose of this study, the designs produced by 16 postgraduate students were analyzed using qualitative methods. In particular, students, who participated in a postgraduate course, were asked to design an educational toy and redesign it as an educational digital game. In the first part of their design, they had to choose one of the dominant theories around play and explain how they applied it. Furthermore, rules of play, goals and learning context of their educational toy should also be described. The second part of the design should include the descriptions of the mechanics they had chosen to achieve the integration of learning content into the gaming mechanics. Finally, students should clearly explain the rationale of their choice and define how it should lead the player to potentially learn a new concept or ability. Although the analysis of the designs is still in progress, the initial data indicates that students faced major difficulties in both design tasks. Although most of the designs included specific learning goals, from various developmental and learning areas, the design approaches were either evaluative or behaviouristic and did not show any learning potential. This evidence is consistent with that of other studies that stress the importance of specific frameworks that need to be developed in order to successfully include educators in design processes.

TETE-A-TETE WITH TOYS & TALES THE DIFFERENT DESIGN DIDACTICS

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Since 2011, I have conducted design workshops on “Toys & Tales” for educators and other interested groups. This hybridisation of “Tales with Toys” introduces fascinating dimensions. The idea has been to relate design and education using toys and games as a popular medium. The presentation will discuss how participants perceived one idea into many concepts.

My first toy experience was a small elephant made by my mother from *atta* (kneaded dough) when she was rolling *rotis* (*bread*). Then she would tell me stories. This was the first lesson of creativity and playful design. Every year, Bapu (Sudarshan Khanna) and I used to make hundreds of a particular toy for new-year greeting for friends around the world. Repeatedly making each toy, taught me patience, attention to detail, sense of design and the joy of gifting. I was exposed to digital games before my teenage years. Yet the making and playing left a strong impression.

Tête-à-Tête with “Toys & Tales” – the first step of these workshops has been to study and explore traditional toys and childhood play memories. This process helps create multiple ideas for toy designs. The participants are generally teachers, therapists, child development and psychologists. It has been fascinating to see participants develop many different design ideas while starting from the same point. This helps educators enrich their curriculum by this design process.

“*Khel Manthan* (Churning-Learning) – handcrafted storyteller and storymaker” is one of the design-toy projects, which I developed with a community. The concept of multiple story telling is celebrated, where any two characters can be chosen to form stories spontaneously. As an educator at a design university, I felt the need to introduce space and facilities in which digital and tangible toys and games can co-exist. The design students are encouraged to incorporate the elements of play in their projects related to product and interior design. Students value this approach.

I will be presenting some of the experiences of workshops and courses with various groups of schoolteachers, university faculty, students, and development communities. The main finding of the workshops, conducted over the years, provided the following insights:

- a) Participants with no prior background of design gained confidence to design toy as a tool for learning.
- b) This helped them integrate design, art, technology and social input. This seemed possible specially while working with toy and game design.

The presentation will highlight how participants bring out variety of ideas of toys and tales, starting from one toy idea and how young design students add new dimension to their projects, incorporating playfulness.

IMPACT OF TOUCH SCREEN DEVICES ON CHILDREN, THEIR PLAY, PERCEPTION, RESPONSE AND DEVELOPMENT

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Gaming has now become a studious and more secluded activity with the addition of the VR boxes to the already over-crowded world of gaming gizmos. Research across the world suggests that fast paced games such as unreal tournament develop the accuracy, multi-tasking ability and various cognitive functions related to perception and response patterns of the players. Games in the physical world necessitate the widest possible field of vision and the perception of movements of objects or people away from the centre of the field of view as well. In the real world, the perception is often not only a component of vision but a combined effect of vision, auditory, touch and olfactory sensory systems. The response is a combination of movements of the limbs or body in varying configurations, relating to the player's situation – this may involve touching various kinds of materials in order to move a coin, strike an opponent, roll the dice, catch a ball, or other such tasks. However, today, perception is often limited by the boundaries by four screens and the response is the movement by a finger or two across a 5 or 6 inch touch screen device. The entire material culture of the aspect of games is becoming increasingly limited to the geometries of the electronic devices.

Johan Huizinga believed that pure play is basic human instinct; it refers to the fundamental playfulness which is not constrained by physical or psychological attributes. A child playing in sand or snow, unbound about the structure or rules of play, is pure play. Such pure play is essential for children to experiment with various physical elements of the world, to learn about gravity, balance and explore the limits of risk. It facilitates psychomotor development. Now such pure playfulness is reduced to the obsessive engagement of children with electronic devices. In a research carried out by McClayton Li *et al.*, analysed the relationship between touch screen device usage and cognitive development. It was understood that almost all the families considered for the experimental sample had touch screen devices and a majority of them utilized them to entertain their children or keep them occupied while the parents engaged in other important domestic activities. With respect to television, the American Association of Pediatrics published articles indicating that television watching is detrimental to the linguistic development of those children. Children learn more through interaction than through any electronic device, since electronic devices are primarily oriented towards one way communication. This is especially detrimental to the cognitive and psychomotor development of the children below 3 years of age. Studies prove that there is no significant educational benefit resulting from the use of touch screen devices. Touch screen device induced obsession and isolation are dominating the world of children today.

The impact of these devices and their overuse should be comprehensively analysed. The current paper is based on the case studies of 53 children less than 5 years of age in an Indian city, whose parents decided to restrict the use of touch screen devices by their children based on their own experience. The paper examines the results from social, cognitive, developmental, educational, and communication perspectives.

TOYS WITH HISTORICAL REFERENCES AS PART OF A MATERIAL CULTURE: AN ETHNOGRAPHIC STUDY ON CHILDREN'S BEDROOMS

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This presentation explores the dimension of toys as part of a historical culture approaching the relationship that children have with the past and with their own past in the form of toys. A current Austrian ethnographic research project on children's bedrooms on the age between 5 to 8 years may provide a realistic insight into the realm of toys and keepsakes with historical references. This qualitative study, which was conducted in 25 homes, focused on the material aspects of toys as representations of the past. The research methodology followed an ethnographic approach, which explored the "native" culture in children's bedrooms by observing the room and talking with its inhabitants. So the research data consists of audio recorded tours through these rooms done by the children, digital pictures taken in the rooms and of expert interviews with the children on their room and toys. Using content analysis, aspects of visual ethnography and interpretations on objects of the revealed material culture, this research is able to study a largely unexplored terrain.

Initial results clearly show that in almost every room one can find toys with historical references such as castles as replica models, knights, princesses, dinosaurs, costumes, board games etc. The main aim of this study, which is part of a larger project in history education on the private use of public history, is to understand the children's world as an informal learning environment. The insights can be used as connections – via the material culture – to formal learning processes with a huge motivational effect.

CREATIVE DEVELOPMENT THROUGH PLAY WITH TOYS

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Creativity refers to the ability to produce new, original ideas that are appropriate in their context. This ability involves cognitive, conative (personality-motivation), affective resources from the person-centred side and favourable environmental conditions (supportive context, task constraints and materials) from the external resource perspective. Creativity develops over childhood and adolescence, based on life experiences at school, and outside school with family and friends. The larger social context - the local cultural environment - has an impact as well. In the context of the 21st century skills movement, creativity is increasingly recognized as an important ability to be fostered for life success. We have developed tools to measure creative potential in children and adolescents. The EPoC battery (Lubart, Besançon & Barbot, 2011) provides tasks to measure the Evaluation of Potential for Creativity in several domains (graphic arts, verbal, scientific, social and mathematics).

We have been studying the development of creativity in children and adolescents in order to understand its typical progression, as well as the impact of educational experiences. For example, results suggest that active pedagogies (such as Montessori or Freinet) may contribute to some extent develop creativity. Toys represent an important set of environmental stimuli which may offer opportunities to build cognitive, conative and affective resources for creative thinking; for example, some toys stimulate imaginative play. Some toys allow children to customize them, engaging children's creativity, while other toys can be used in unexpected ways, allowing children to engage their flexible thinking. Thus toys, used in home, extra-curricular (play centres) or within school contexts, offer an important vector for creative development.

The presentation will present, firstly, our research on the development of creativity, and ways to measure creative potential in children and adolescents using EPoC. Secondly, a review of existing research on the impact of play with toys on creativity. The review will examine (1) the kind of toys that offers the greatest possibility for creative thinking, and (2) the kind of play with toys that is most relevant for the development of creativity. Guidelines for future work, including recommendations for research and practice will be offered.

TRANSMEDIA STORYTELLING AND SEMIOTIC APPROACH TO LADYBUG'S CLOTHING AND LIFESTYLE

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Paperdolls websites have been used for a long time by children all over the internet world. There is little novelty in the means of playing within these sites, since their mode of operation involves multiple permutations in dressing up dolls chosen by the player; this activity sometimes includes “using” images of make-up and also of housing facilities such as dressing-rooms, living-rooms or even kitchens. The details are chosen by players and in most dressing games this is all there is. Players have fun because they explore various possibilities on computer screen, just like in former years, other players would have used *real* paper dolls with a much more limited variation of choices and scenarios.

So, what's the point here? *Ladybug* and *Chat Noir*, are first of all characters in a novel narrative that is regularly broadcasted on TV channels. However, they are toys/dolls, who also have a Facebook profile, several Youtube videos, online games and a whole storyboard directed to young children and quite easily accessible. *Ladybug's* TV series utilises a narrative scheme, in which the main character acts as a *good-doer*, struggling against evil and always winning in the end. The main character is a schoolgirl who, by means of a magic earring, manages to transform herself into a superhero with extreme powers, capable of destroying every other evil character and therefore saving her family, her friends, her city (Paris) and leading their world to happiness.

In online games, this character can be dressed up, in her usual format – but also as a *pregnant teenager* and along with other TV and movie characters, such as Elsa, from *Frozen*. On Youtube, several videos are available, some of them from the TV series itself and others from the same series in different seasons. The toy market presents various versions of *Ladybug* figures, in different sizes and materials, props and children's attires that can be used during festive occasions. *Ladybug's* merchandizing is quite popular among young children and can be purchased both in branded and in low cost shops.

This presentation will analyse the projection of *Ladybug* character in various media accordingly to 1) the convergence that is directly exhibited by the different formats; 2) the possibilities of interpretation and meaning conveyed by the general plot; 3) the convergence that is the centre of all storyboard. The formats are thought to be complementary and non-exclusive, i.e., market-oriented according to the producers of the series.

However, the possibilities of interpretation allow us to consider the child viewers as users of the screened images. They are also the producers of their own “other” plots, which they can create by using the convergent units offered by the different media - given that we are only considering Youtube and Facebook areas of web navigation.

TOY DESIGN IN THE PAPAstrateios SCHOOL OF INTERWAR ATHENS

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This presentation focuses on the toys designed and produced in Papastrateios Vocational Public School of Toys and Decorative Arts at Athens – the only toys’ school ever founded in Greece – during the interwar era, in order to reveal their artistic nature.

At a time when playthings were either imported or poor replicas of foreign originals, these toys, tokens of children’s talent, exemplified the principles of the labour school (learning by doing, cross-curricular teaching, problem solving, collaborative culture and respect for children creativity). The League for Women’s Rights, who founded the school, and established it based on the practices of contemporary painters and sculptors (action as a goal/means of learning, use of resources other than textbooks, emphasis on children’s skills and abilities rather than whole-classroom teaching, evaluation on the basis of projects). The toys assumed an artistic form which crystallised a particular understanding of Greekness, irrespective whether or not the toys were made of wood, cloth, unbreakable paste, tin, paper, were industrial or handicraft, rural or urban, or created through instruction and/or an object of vocational training.

This presentation examines the ways these Modern Greek toys which served both tradition, as conceptualized by Benjamin, and modernity, and drew their inspiration from nature and from; the Nike of Paionios, the Kore of Euthydikos, Byzantine costumes and Hellenistic terracottas, became instantiations of high art not only in material but also in social and cultural terms and awarded first prize at the 1937 Paris International Exhibition.

**LUDOBOX, A DIGITAL TOY LIBRARY:
COLLECTING PUBLIC DOMAIN AND FREE LICENCE PHYSICAL GAMES AND TOYS.**

Julien Maudet

DCALK association
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For decades games have been shared through multiple and flexible formats; for now, like books and music, board games have entered the era of reproducibility and distributed networks. Mostly connected to paper printing “Print’n play” emerged to define a means to promote rules and game components.

Recently creators have published their 3D printed checkers on-line and open source electronics have led game designer to playful hybridization, occasionally crowd funding publishers release “print’n play” samples to involve social media diffusion. At last, games could be thought to merge with Creative Commons license philosophy.

If we consider that these new formats will one day have their place in a toy library, how does that affect the toy library profession, users practice of these structures, and more broadly players?

Since 2015, with various funding support (European Culture Foundation, French Institute Libraries, French Culture Ministry), the Dcalk association intends to prospect and accompany new uses and practices at the intersection of games and commons, digital crafts and design, digital and cultural mediation, and public libraries and fablabs.

As an answer, Ludobox (www.ludobox.net) is a collection of games and resources based on free licensed board games - it gathers dozens of files, instructions, tutorials about the creation and fabrication of games alongside other associations or independently.

What paths emerge from this collection, to think of a new model of distribution (“strategies for publishing transformative board games” – Will Emigh – [Analog Game Studies Volume 1](#)) or creation of games? From “Print ’n play” to “Make ’n play”, how games and toys can utilised to initiate new forms of mediation? Does digital reproduction foreshadow ways to reach new audiences?

PEGBOARD AS A TOOL IN OPEN SOURCE GAMEDESIGN

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In its simplest form the pegboard is a perforated board used in both in commerce and at home. When vertically fixed to the wall, numerous organization possibilities are provided thanks to the use of hooks and containers of any kind.

Its potential is important; the pegboard already has playful forms, such as the Pegity, released by Parker Brothers as early as 1925. Its rudimentary mechanism was close to that of tic-tac-toe's, comprised of the perforated board and four different colour pegs.

This simple device supports significant creativity and an easy propagation of its many uses. In 2016, using this concept Wendy Van Wynsberghe, initiated the Peggy project with fablabs from Dakar, Barcelona, and Brussels. Her goal was to draw attention to creations produced in the fablabs and thus “[to] help highlight the richness of the fabber-maker-hacker universe and celebrate the manifold possibilities of open source object design” (Peggy (2016, September). Retrieved from <http://libreobjet.org/objects/peggy/project.html>).

This creative process of games and toys enhancing open source object design is part of the global game project Ludobox (“*Service numérique innovant*” of the French ministry of Culture and Communication. Retrieved from <http://ludobox.net/#intro>). Our project proposes to audiences, whether or not familiar with the game design, to take over the pegboard designed in fablab (Funlab - Tours / Fablabek - Brussels) and to create their own gaming experience.

A first pegboard-based game design session has held in Dakar, November 2017, during the French Institute's event “*Novembre Numérique*”. Despite many and varied materials – such as shoelaces, elastic bands, marbles, pieces, coloured cardboards, felt pens, coloured tokens, and different dices - each of the three groups which took part in the activity created a horizontal marble labyrinth. Each of the three groups was heterogeneous regarding the age (children from primary school, teenagers from secondary school, and students from the university) and the groups did not confer.

Our research is about the offered material and its influence on game design to eventually form a collection of objects enabling innovative game design sessions. Our project includes the creation of some games and toys using a pegboard to illustrate the very different possible usages (game culture), the creation of a regular group of materials and field study (amateur and confirmed game designers, children and teenagers).

This is a work in progress and the presentation will be an opportunity to show the current progress and the initial conclusions.

TOYS AND DIVERSITY
A QUANTITATIVE ANALYSIS OF TOY CATALOGUES

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There are many differences between children: there are boys and girls, children of different cultures and ethnicities, children from poor and children from wealthy families, children with or without disabilities and so on. Despite these obvious differences between children, toys usually do not seem to reflect the diversity in the society. Most toys, especially toy figures, dolls and puppets, are white, without disabilities, slim, young and well trained, they wear stylish clothes and they have attractive and well-paid jobs. In short, toys mostly reproduce society's preferred image of a regular person. In contrast, political and scientific discussions concerning diversity and the question, how a society has to deal with its own diversity, have increased over the past few years. In educational science, questions dominate as to which goals diversity education should pursue and how to reach them.

As a contribution to this essential and broad discussion, we conducted a small quantitative and qualitative research project on diversity education through diversity toys in early childhood education. The project consists of four different studies. In our presentation, we want to focus on one of these studies.

We took a closer look at actual toy catalogues. We analysed the toys shown in the catalogues along different diversity categories. The results confirm the one-sided use of different diversity categories in toys. The people they depict are usually white, thin or normal, adult or of younger age. They show no illnesses and disabilities and no religious references.

DYNAMICS OF RITUAL DOLLS IN ARMENIAN FOLKLORE TRADITION

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The current paper is discussing various functions of dolls in Armenian folk tradition, their dynamics, transformations and some examples of their occurrence in Armenian folktales, folksongs, riddles or other genres of folklore. Dolls as ritual instruments had pragmatic functions biased with definite purposes and applications. The number of dolls in Armenian ethnographic tradition is quite extensive. According to traditional beliefs they were endowed with human qualities and characteristics, yet they were shapeless and impersonal spirits with token names. All these dolls had various social functions through which people used to regulate their inner ritual lives. In different ethnographic regions of Armenia their names and functions varied.

More beneficially their application is revealed in folktale discourse, where dolls unveil their immediate significance and usage, their transformation into folktale helpers and even characters.

Another aspect of discussion is the gender issue of dolls. Although male ritual dolls are also found in Armenian tradition, the vast majority of dolls are female spirits that patronize females becoming their protectors and helpers.

According to our paper, ritual dolls, even today, function in different ethnographic regions of Armenia but beliefs connected with them are transformed and aimed mostly at children and with the help of this kind of research their roots, as well as cultural specifics are explored.

In regard to toy studies we have applied views and theories concerning psychological approach (Bruno Bettelheim, *The Uses of Enchantment: The Meaning and Importance of Fairy Tales*, 1976), structural and semiotic approach (Yuri Lotman's works on many different aspects of play: the essence of playfulness, the modelling influence of play on culture, dolls as metaphors and works of art) as well as text interpretation approach (Eugenia Gonzoles, Susan Honeyman, Margaret R Higonnet's contribution to Children's literature research corpus). Viewed through the perspective of these and other studies, it becomes obvious that dolls had a common purpose but in various contexts their interpretations as well as functions varied. Thus the new reading and interpretation of Armenian ritual dolls and their tracing in folk literature can be considered the novelty of the paper.

In our paper we have used descriptive, comparative and analytical methods of research.

WHAT CAN'T BE A TOY?

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What are the formal properties of toys?

Curiously, formal toy definitions have received less scholarly attention than formal game definitions. While Suits (1978), Caillois (1961), and Huizinga (1955) are commonly cited in an ongoing debate on the nature of games, formal or otherwise, there is no analogous canon of theory and theorists – and comparatively little available literature – on the formal properties of toys. This reveals a critical difference in common conceptualizations of games and toys: While the form of the game intrigues us, the form of the toy is considered less critical and therein, perhaps, less interesting. Indeed, it might be assumed that *any formal object* can be played with as a toy and, as a consequence of that playing, *become a toy*.

But this assumption has complications. Some objects are banned from becoming toys, regardless of their playability: “dangerous” objects. For instance, while current commercial classifications of “toy” are quite broad (and based more on function rather than form) – “Products designed or intended, whether or not exclusively, for use in play by children under 14 years of age.” (Council of the Safety of Toys, 2009, p. 11) – these definitions are qualified with exceptions, prominently including “essential safety requirements.” These requirements clarify important formal properties – both material and ideological – that exclude some objects from becoming toys.

Another significant – and less culturally determined – complication to the notion that any object can become a toy is found in those objects that, if and when they are played with as toys, are destroyed. These include physically delicate objects as well as conceptually delicate objects such as *models*, *simulations*, and *games*.

This essay examines the formal properties of those objects excluded from becoming toys in order to more clearly delineate, if any such exist, the formal properties of toys. These properties of toys then allow speculation on the limits and boundaries of toys as human cognitive affordances: How might these affordances be determined and manipulated?

TOYS IN CHILDREN'S BOOKS AND CHILDREN'S BOOKS AS TOYS

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Nowadays toys constitute an important element of children's play and subculture. Whereas toys are a source of entertainment and pleasure for children, adults tend to view toys as instruments used in raising children, socialization, and psychological development, especially during the early, formative years of childhood. Toys were long ago integrated into world literature for children, and many literary images of toys have become general cultural symbols and metaphors (e.g. the Nutcracker from E. T. A. Hoffmann's fairy tale or the Steadfast Tin Soldier from Hans Christian Andersen's story). Toys have also reflected children's folklore, children's image of the world, human characters, man's destiny, fate, existential and ethical confusion, theatre of life, life as a parable of the world, and manipulation of reality, for example, in the form of dolls, puppets, jumping jack toys, and marionettes, as seen in *The Adventures of Pinocchio* by Carlo Collodi, poems by Bolesław Leśmian, *The Doll* by Bolesław Prus, *Plastusiony pamiętnik* [The Diary of Plastuś] by Maria Kownacka, or in stories inspired by *commedia dell'arte*, including the characters of Harlequin, Pierrot, or Columbina.

Now literary images of a child growing up without toys and games often symbolize a defective children's world, highlighting certain social or psychological problems.

However, the relationship between toys and books is not straightforward: as is well known, toys have not always been depicted in literature, especially in the context of play. The "toy-book" relationship reflects the educational and didactic views/approaches (e.g. cognitive and informational, sensory and motor system related, and ludic and entertaining), culture theories, and concepts of childhood in every epoch (e.g. affluence in German Biedermeier, associated with the "culture of the children's room"; the poverty of a peasant village, in which toys such as wooden pipes, clay animals, and toys made of chestnut and acorn represented the poor world of orphans and children working in the field; ideologically and socially engineered toys present in Soviet literature for children during the first half of the 20th century; and robot toys representing modernity, futuristic visions, or post-humanism and postmodernism, e.g. *The Invention of Hugo Cabret* by Brian Selznick and *Pan Kleks* [Mr. Kleks] by Jan Brzechwa). Apart from presenting the toy as a cultural symbol, children's literature is also a useful source of more extensive information about the toy itself, i.e. its shape, size, texture, materials, and methods of construction.

Our paper focuses on the ways toys are depicted in contemporary Ukrainian and Polish children's books and on the various cultural, aesthetic and symbolic underpinnings related thereto. It also deals with general tendencies in today's toy market, the issue of globalization (or, rather, "sinification"), the reasons for the growing popularity of hand-made toys and "books as toys" (e.g. interactive children's book, movable book, and pop-up book) produced in Ukraine and Poland, and the representation of toys in contemporary literature. Finally, it deals with the toy-book itself.

PHILOSOPHY OF LIFE: AN ESSENTIAL INGREDIENT IN GAME DESIGN

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Socialization among children is akin to the worlds of thought and existence that the children create for themselves, as they constantly interact with the world around them. In such worlds, identity of self, perception of others, reasoning behind conflicts and resolutions, interactions and relationships, are often diverse and are not necessarily aligned to what adults may have for them in their worlds. Adults try to produce self-regulating individuals by constantly steering their behaviour, in the desired direction, which is in line with the culture of the adults and which is considered acceptable by society. But children's worlds are often private and imaginative and it is thus complex to probe into and incept an idea or habit, as required by the society, especially if such ideas are complex and don't signify items that are of interest to the child. It is in such contexts that a necessity arises to devise tools to properly install concepts in the young minds. Based on such requirements, cultures recognized the importance of games which help to understand and instil the required ideologies in the minds of children.

In India, many villages are agriculture based and their economics are characterized by unpredictability of climate and rains. The ability to consider both success and failure, in a balanced state of mind, is essential to combat the unfortunate episodes of life. Such thought processes are instilled in young minds with the use of games. Some games in India, which include board games, may have astrological significance which explains concepts like karma and salvation. Such mature concepts are introduced to children, who play these games, at a very early age. Neutrality of thought, stable emotional state, a belief in divinity, compassion, accountability to sins etc. emerge as a part of play and hence become the framework of institutions and principles for children as they continue to play games. My current presentation reflects the study of material culture which is involved in board games and their symbolic interpretation in relation with astrological significance, printed signs and marks that are indicative of these concepts, their mythological or religious connections and their impact on the children who play them. The study focuses the necessity of contemporary game design processes to involve such traits which raise philosophical understanding of life among players. The study is based on a thirteen months ethnographic study of traditional games in Marteru village in the state Andhra Pradesh, India.

GOING TO THE DOGS: A GROWING TREND IN TOYLAND

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Mention of toy boxes used to conjure images of children rummaging through an array of playthings or an exasperated parent using it to regain some order and neatness to a child's play room. Today, however, it's pet toys that are increasingly filling the proverbial toy box. Sales of pet toys in the US surpassed the 1 billion USD mark in 2016, up from \$851 million in 2011 (Packaged Facts, 2017), and projected to reach \$100 billion by 2020 (Arenofsky, 2017). Dog toys account for 75% of these sales representing the fastest growing segment in the pet care category (Packaged Facts, 2017).

The increase in pet toy purchases has resulted in a dizzying array of options and retailers. In much the same way as traditional children's toys have morphed to high tech, developmentally staged options and expanded to boy and girl versions with tie-ins to movies and other licensed properties, so too have pet toys. This is especially the case within the dog toy segment where 64% of dog owners now provide their dogs with commercially available toys rather than simple household items as toys (Packaged Facts, 2017).

Industry research points to a growing sentiment of "pets as family" and overall pet humanization as drivers of this trend. As full-fledged family members, pets are frequently recipients of holiday and birthday presents with toys comprising the lion's share (i.e., 72%) of these gifts (American Pet Products Association, 2018). Moreover, such gift giving has expanded to more occasions, more spending per gift and more gifts overall for a combined expenditure of \$2.6 billion/year by pet parents (Miller & Washington, 2015). It is also worth noting that this trend is not unique to the United States. Exponential growth of pet toy spending reaches around the world, with countries such as the UK, China, India, and Russia leading the way (Wolf, 2017).

The idea that pets are considered part of the family isn't new (c.f., Beck & Katcher; 1983, Feldman, 1979; Hirschman, 1994) nor is it simply relegated to empty nesters or the stereotypical "cat lady." Millennials in the US are increasingly delaying or forgoing child rearing for pet parenting. Subsequently, according to Statista (2017) data, there are more US households with pets than human children (68% vs. 42% respectively).

Yet, despite these trends, with few exceptions (e.g., Belk, 1988; Hill, *et al*, 2007; Ramirez, 2006) the paucity of research at the intersection of identity, toys, play, and pets is striking. This void is exacerbated by toy research, whether from the industry or social science perspective, that has generally treated pet toys (and play with them) as something other than "real" toys (or play). Extant industry studies tend to rely on survey data derived from pet owners with their findings locked behind proprietary pay walls. These data provide information about overall consumer trends, but lack the deeper examination of human-animal interaction and its impact on "our social behaviour, our relationships with other humans, and the directions which our social enterprise often takes" that Clifton Byrant called for almost forty years ago (1979, p. 339) and that Hirschman (1994) echoed in her examination of the role animals play as "surrogate children."

The purpose of this study is to examine the attributes pet owners use to describe and select toys for their canine companions. As such this study goes beyond quantitative tallies of expenditures and consumerist patterns found in industry data. Rather the analytic focus is the role of toys in human-pet play and interaction. In particular, the toy characteristics and attributions made by pet owners about the toys are examined in relation to gender-identity expression. The methodology builds on the work regarding parental toy preferences in relation to their children's gender-identity development, to examine the ways that gender norms are encoded into the design of dog toys; the influence of these design features on dog owners evaluation and selection of pet toys; and the intersection with their own gender identities.

The toys themselves constitute a major focus in this work, beginning with a toy inventory and classification from a visual semiotic perspective. Like previous studies of parents and children “doing gender” in Toyland (e.g., Pennell, 2008) the current examination of pet toys is explored as a potential window into our cultural values and expectations regarding gender.

**PLAYING (WHAT?) IN RECESS TIME:
DECISIONS MADE BY THE PRESENCE/ ABSENCE OF TOYS**

Vânia Pereira University of Minho Portugal	Beatriz Pereira University of Minho Portugal	Isabel Condessa University of Azores Portugal
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The growing interest by the scientific community concerning the theme of play in childhood joins global concerns about the decrease in play opportunities which are currently given to children.

This is a descriptive study aimed to: Identify the children's currently performed activities in elementary schools playgrounds; identify the most preferred children's activities in elementary school's playgrounds; understand what materials they most use to play in school's playgrounds and find out the differences between genders regarding the activities and materials used in school playgrounds. A questionnaire about practices and interactions in primary school's recess time was applied to a sample of 317 children from the 4 grades of two primary schools of Braga city centre (Portugal), in which 167 (52,7 %) are boys and 150 (47,3 %) are girls aged between 6 and 10 years old. For this study a qualitative approach was utilised. The information collected was subjected to descriptive statistics treatment and analysis by frequency and percentage and the inferential statistics through the Chi-square test to verify the existence of statistically significant differences between genders. For the statistical analysis we used the software *Statistical Package for the Social Sciences* (SPSS), *Windows* (version 19). In agreement with other studies (Blatchford et al, 1990; Pomar e Neto, 2000; Stellino et al., 2010) we verified that, during recess time in school, boys engaged more frequently in the following activities: run (82.6 %); play football (74.9 %); chase play (67.1 %), and girls, were more engaged in: run (78.7 %); talk (71.3 %) and chase play (64 %). However, when we look into their preferences, we observed that some of them do not correlate to the activities they usually do most: boys prefer to play football (1st), hide and seek (2nd) and chase play (3rd), while girls prefer rope skipping (1st), chase play (2nd) and running (3rd). Regarding the toys/materials most used in school's playgrounds we observed that they reflect the practice of their preferred activities, so boys preferred a "ball", and girls a "rope". We can say that the children did not have many choices once inside their school, as there were almost no materials to play with (only one football ball provided by school) and some toys that children brought from home. To maintain order and safety in schools, adults tended to marginalise and inhibit children's play (Thomson, 2014). We believe that improvements to playgrounds spaces, by introducing materials/toys aligned to children's wishes and taking into account their development, would certainly a wider variety of play activities and increase children's social and physical play, as per Engelen et al. (2018) study.

THE SCIENTIFIC AND EDUCATIONAL POSITIONING OF GAME LABS IN UNIVERSITIES: THE EXAMPLE OF THE LUDOMAKER

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In parallel with the development of Game Studies, and in the movement of Fab Labs which appeared at the same time in the United States (Bosqué et al. 2014), universities have equipped themselves with “Game Labs”. Under this term are designated research and training places oriented towards the creation and/or study of play devices (toys, board games, video games), or more broadly around gamification processes (Bonenfant and Genvo, 2014). By limiting itself to the name “Game Lab”, an initial Internet search, from university sites, identifies more than 40 internationally (three in France). However, many of these institutions are entitled, for example, “Play Lab”.

Launched in June 2016, “Ludomaker” is a Fab Lab dedicated to prototyping games, toys and play materials. Established by the Department of Educational Sciences at the Paris 13 University, this space offers students the opportunity to design, prototype and test play and/or educational products: toys, board games, video games. Creation tools are available: 3D and large format printers, cutting machines, image and video game editing software, games library, game design books, game studies material and game equipment: dice, meeples, cards, pawns. A Pedagogical Engineer, in charge of the space, accompanies projects and trains the use of technical design tools. They assist with conceptual and game design issues. Professional practitioners regularly offer training workshops, initiation days and game jams.

Relatively recent and under development, the expansion of university game labs raises questions related to institutional, cultural and educational issues. How to define Game Labs? What are their missions? What relations do they have with the industrial and academic worlds? Can they represent a relevant interface for them? What rights and properties should be attributed to the projects developed in these laboratories? How is game design taught? How does this equipment relate to the world of research and the gaming industries? How can we define these collaborative “DIY spaces that are neither domestic, nor professional, nor commercial” and which blur “the boundaries between social worlds that were previously isolated” (Lhoste, Barbier, 2016)?

Through this presentation regarding the research and creation activities of the Ludomaker, questions are proposed reflecting on the place and the educational and scientific role of these institutions.

THE INTERNET OF TOYS AND THE HYBRIDISATION OF PLAY

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In the same way that computers are connected with each other to send and receive email, images, voice and video calls, certain toys can also connect to the internet and send and receive information. Known as the Internet of Toys, the connected toys include dolls, animals, robots, action figures and wearables which can constantly and seamlessly generate data on when, where, and how often children have interacted with them. The collection and transmission of data is not visible because many of the toys don't have screens. Instead, they collect data using cameras, sensors, microphones and voice recognition software and send the information over the internet without adults and children being aware. Combining this data with other information supplied at purchase, such as personal details, means that a detailed picture of a child can be transmitted. For instance, a child hugging a digitalised teddy bear at home can be unknowingly sending biometric data such as heart rate and temperature to health professionals or to their parents' mobile phone via sensors embedded in the toy. A recent survey (FOSI, 2017) suggests that just under a third of children in the United States who have devices such as a tablet also have an internet-connected toy.

Data collected by connected toys is vulnerable to identity theft, surveillance and marketing purposes. These risks have led to alerts being issued by the US Federal Bureau of Investigation and the German Federal Agency to bring the attention of consumers to the privacy and security concerns. Our research suggests that young children – and often their parents – do not understand the nature, or value, of the personal data that can be collected in this way. Parents under-estimate the dangers, not realizing that information about their child's activity, location and actions and speech can be captured and they are unaware of how it can be stored, shared and sold on.

The presentation will give examples of internet-connected toys and an overview based on empirical work undertaken in schools and family homes (Manches, Plowman et al, 2015) as well as analysis of policy documentation and media coverage. This forms the foundation for a discussion about the ways in which the hybridisation of these toys blurs the boundaries between the visible and invisible, physical and digital, toys and technology, play and surveillance, home and not-home. We need new ways of thinking about children's play within socio-material terms as hybrids of virtual and real worlds in which all objects leave a digital trace and the screen interface becomes redundant and the key characteristics of invisibility, mobility and ubiquity will extend notions of agency and alter definitions of interaction.

FROM SOLITARY HANDICRAFT TO SHARED TOY-MAKING: AMIGURUMIS, ADULTS AND 21ST CENTURY OBJECT PLAY

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This presentation discusses a recent phenomenon in crafting that relates to toy design, DIY cultures, and socially shared adult toy play—the making of and playing with Amigurumis. The word Amigurumi comes from Ami—meaning crocheted or knitted and Nuigurumi meaning stuffed doll. An Amigurumi is a crocheted or knitted stuffed handmade toy. It has the attributes that the designer desires to put into it and the medium is yarn. Amigurumis vary in size and there are no restrictions about size or looks. Amigurumis may be categorized into two: Amigurumi art toys and Amigurumi soft toys: The aesthetic features that correlate both categories are the selection of yarn.

Amigurumi as a term might have originated in Japan after WWII (1945) as an evolution of knitting and crocheting techniques. These techniques were brought by foreign visitors to Japan and might have been an alternative for families to create toys for their children during the huge economical crisis in the country. So far there are two examples of post-war books dating from 1951 and 1955 found using the word Amigurumi as a Noun. Ondori-sha (あみぐるみ 雄鶏社) uses the word “Amigurumi” for the first time and shows designs of animals made in crochet with written and graphic instructions.

Popular characters in Amigurumi design are those which resemble existing characters from TV or Internet series. Sock Monkeys, Teddy Bears and lately the “Turvalonkero” or Octopus to comfort premature babies. This latter has become a worldwide phenomena and used the power of social media to express solidarity. The creation for a cause mediated by the act of playing with crochet.

Amigurumis give feelings of long term gratification. There is a possibility of choosing the utilitarian aspects for the toy as well as the intrinsic and sentimental value in the creation of these toys.

Independently of being an Amigurumi designer or an Amigurumi hobbyist the craftsmanship of Amigurumi remains the same. The difference lays in the creative process, not in the craft per se. This allows the creators to be active participants in the making of the products they consume, shifting the paradigm of consumerism.

Amigurumi enthusiasts have found diverse ways to share, interact and learn from one another. This interaction comes in the form of workshops, Crochet Alongs (CAL), forums and courses in physical locations, craft parties and Amigurumi cafes.

FICTIONAL PLAYS BROADCASTED ON YOUTUBE: MEET THE PLAYMOBIL FAMILY

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The 2.0 web, also called participative web, is rife with pro-amateur productions (Leadbeater, 2004). Some of them are created by children who have access to connected devices like laptop, tablets, and smartphones. In this presentation, we will focus on web videos made by children which show them involved in fictional plays with toys, mostly Playmobil.

Web videos of children's play constitute permanent archives of game practices, which distinguishes them from offline game practices which are transited mostly via oral culture (C.H. Carpenter 2010) and that do not get such traceability. The broadcast of these videos, initiated by children themselves, allows children's game practices to exist beyond their bedrooms and playrooms (Glévarec, 2010). Our contribution to this case study aims at demonstrating that web videos are indeed a media for play culture ("*culture ludique*", Brougère, 2005) but that they are also the witnesses of culture of convergence (Jenkins, 2013) considering that they incorporate external elements from other media (e.g. reproduction of TV shows using Playmobil) and multimodal communication to sustain the channel (e.g. use of Snapchat during FAQ video, or musicals to promote their channel). Those kinds of videos share normative displays like self-made openings, descriptive video titles, temporal format, and channel fiction internal coherency.

This contribution is extracted from our ongoing research on web videos as learning resources in play practices. We proceed with content analysis of YouTube videos, including the commentary section. We selected videos made by users fitting specific profiles (it has to be a French-speaking child under 16 years old without an adult implication), toys (playing with Playmobil), and a certain amount of channel subscribers (>90k, >30k, >1k). We created a corpus composed of 9 channels. Given the importance of the context, we did not separate the play videos from other videos on the channel like FAQ videos and DIY videos. Semi-directive interviews with creators are in progress.

AGENCY OF THE OBJECTS AS PLAY THINGS IN SOCIAL CONSTRUCTION AMONG CHILDREN: THE EXAMPLE OF PLAYBOX

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“*Boîte à jouer*” (Playbox), the implementation of British PlayPods as an innovative approach to play in school playgrounds in France (Besse-Patin et al., 2017), can be described as a big “toy” box which is filled with junk materials such as tires, cable rolls, ropes, traffic cones, etc. in order to enrich the play environment with minimum adult intervention during the lunchtime in school playgrounds. Earlier research highlights different facets of the PlayPods approach, like the adults’ posture in the playground, the use of scrap materials as play things, play opportunities and their educational effects in the school context (Armitage, 2010; Besse-Patin et al, 2017). Our investigation concentrates from an actor-network theory perspective (Latour, 2005) on children’s social interaction with the disparate objects of everyday life which are not construed as toys, yet proposed as things to play with, by the Playbox, and transformed into play things via children’s actions.

The question of children’s social interaction with the objects is part of an ongoing research, in conjunction with the Palybox company, on social interactions among children with the Playbox ; an elementary school in Paris has had the Playbox installed since 2016. Several observations, made during lunchtimes, indicates the presence of objects in the playground promotes “indirect interactions” (Brougère, 1994) between groups of children who do not play together. These interactions are enabled through children’s non-simultaneous interactions with objects and allow us to analyse objects as actors in children’s play and children’s socialization through play.

The predominant observation of the function of disparate objects in children’s play, in similar play settings, tends to see the role of objects from an angle of cause and effect and as a booster of creativity and inventiveness (Nicholson, 1971) and as the promoter of a flexible environment which is necessary for child development (Brown, 2003). We would like to propose that objects also have agency in the play setting, in the sense that they function as mediators and not intermediaries (Latour, 2005), within the associations formed by children in the school playground. Similarly, we highlight the articulations between children’s play and Playbox objects as play things in relation to construction of the social in the school playground through examples of children’s interactions with objects. We believe that understanding the agency of objects within the socialization, through play, may contribute to the ongoing discussions on peer culture and provoke further discussions on the use of different objects in play settings.

DOLLS PREFERENCES: MOTHERS AND THEIR DAUGHTERS

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Toys and play are important in a child's world, supporting overall development and a natural means of learning. Play is often a voluntary activity in which a child will engage. Toys are 'tools' of the game. Dolls have an important place especially in a girls' world. Often girls can be found imitating their mothers, for example, by using dolls in their dramatic plays. Games and toys which children choose tend to vary according to their gender and age.

In this study, girls' and their mothers' childhood doll preferences were investigated. Questions asked: What features do the girls look for in the dolls with which they choose to play? How do they make their doll selections? On what are these choices based?

Dolls of all shapes and sizes are available in market places. Arguably, there are not many studies carried out on traditional dolls sold in village markets.

In this study thirty-five mothers on the lower socio-economic scale and thirty-five mothers on the upper socio-economic scale were administered a questionnaire regarding both the mother's and daughter's doll preferences.

The data with respect to doll features and genre will be evaluated and the results displayed and interpreted on tables.

HOLOCAUST WAR GAMES: PLAYING WITH GENOCIDE

[Senior **ITRA prize** for Outstanding Toy Research (sponsored by the BTHA)]

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What happens when we “play” with traumatic histories? Are there limits to what can or should be represented as children’s play, or what roles the players can hold? Does it make a difference if the trauma is safely in our collective past, or is ongoing or recurring? These are the questions that scholars, artists, and game developers wrestle with as societies’ most troubled historic “hot spots” find themselves manifest in children’s toys, board games, and virtual worlds.

For most of us, the concentration camp of Nazi Germany is the iconic image of trauma for the twentieth century – if not for all time. In this paper, the author explores a number of Holocaust-themed games whose power seems to lie at the seductive intersection of make-believe and historic horror. Each game, produced in distinctly different historical contexts, draws for its subject matter on the demonization, persecution, and ultimate annihilation of Europe’s Jewish population by the Nazi regime during the Holocaust of Germany’s Third Reich. What role then, do such games and/or their artistic doubles actually play in fomenting racial, ethnic or religious hatred and, in turn, inciting criminal activity – or even mass destruction-against their targeted subjects?

Through a careful analysis of the changing role of Holocaust-themed games, first as propaganda, then as artistic provocation, and, most recently, as a form of hate speech, the author explores what happens when children, or adults, are invited to vicariously “play” at the most sadistic aspects of history and human nature.

TOY INNOVATION BY TOY TRADITION

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The Research Group on Design Management IGD Group from UPV Spain, has expertise in surveying the evolution of different sectors in leisure activities, from toys, playgrounds, theme parks through to leisure services. The tradition of IGD/UPV in analyzing design trends in different sectors, have been published in several manuals on design and innovation, brand management and merchandising, and have been supported and distributed by the Ministry of Industry in Spain, Chamber of Commerce in Valencia and Technological Institutes in Spain.

From basic to applied research, different milestones have been achieved by IGD Group over the last 30 years in Toy Design Research which has realised more than 120 products launched into the market, the publishing of AreaPlay magazine since 2008 and the management of UPV Toy Museum, the second largest collection in Spain.

New Research Challenges in a changing paradigm: from Data Bases to Visual Big Data. Cultural production and heritage, together with basic science are some of the strengths of the European Union. Design and Innovation are key values for differentiation in every European company. In the Big Data age, we are ready to introduce a new paradigm which we could call Visual Big Data. That is, to combine image repositories with quantitative data, through selected criteria so that we may visualize, in real time, what is new or demanded by consumers and users. This tool will allow users to detect trends along the entire chain in different sectors and to detect niches where new products and services could be proposed in a shorter time to market process.

Cultural heritage as innovation source: Toy museums across the European Union are cultural and historical sources not used by toy companies or designers. Intellectual property rights, like patents or community designs procedures, are far too slow for the dynamic toy sector. European traditions in toys, as cultural artefacts, have not been used enough by new generations of producers, designers and schools. The goal will be to learn from the past to build the future: Visual Big Data to learn and get inspired by traditional toys.

New uses of old toys: museums as cultural resources to innovate, patents as knowledge heritage and design schools as creativity boosters. The aim is to enhance the Visual Big Data information base by aggregating cultural heritage content, in toy culture, by complementing collections already accessible through the internet. Toy culture clearly has universal value and especially European based knowledge.

Those sources suggest that the more information you gather and manage, the quicker you can obtain innovative ideas.

IS THE BOUNDARY OF FUN REDEFINED IN A MIXT-REALITY SERIOUS GAME?

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Considering games with the broad definition proposed by Juul (2010), consequences outside of the magic circle can be negotiated. This definition opens up the possibility to define serious games, games developed with a utilitarian goal in mind, in addition to fun. The entertaining and utilitarian objectives may however be contradictory, leading serious games to be, more often than not, less than optimal in at least one of the two dimensions. Another way to play with the boundaries of games is to consider pervasive games, which include alternate reality games, and cross-media games (Montola 2005).

We question here the boundary between game, play and toy in the context of a mixed reality serious game. 'Pangu' is a game designed for bachelor students, with biochemistry as the utilitarian objective, and the origin of life as a game theme. The students are asked to play the game on their smartphone, which in turn ask them to build molecules with a tangible balls-and-sticks model typically used in chemistry classes. Pictures taken from the models allow users to 'scan' these models and progress in the game.

A play experiment was organised to support the development of the game and filmed for communication reasons. An unexpected observation is that, in addition to expected behaviours, some students briefly used the models like a toy rather than in the context of the game. It is therefore tempting to speculate that the pervasive nature of the game is blurring the game/non game boundary and, in the context of this serious game, opens a door for fun.

PERCEPTION OF METAPHOR PRESCHOOLERS FOR “TOY” CONCEPT

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Metaphor does not express the concept itself. It expresses a connotation about the concept (Levine, 2005, Nalcacı and Bektaş, 2012). Metaphors are mental tools used to make an understandable and accountable phenomenon of abstract, complex, or theoretical phenomenon (Saban, Koçbeker and Saban, 2006).

Play and the toy are the means of expression which a child may best express themselves (Egemen et al., 2004). Toys are important for children's learning, as well as the game material (Glassy and Romano, 2003). Toys extend the duration of the game and are mentally stimulating. When children discover what they like and how they play best, they need different games to improve their game variety. When they are given the chance to choose their toys, children tend to play their games for longer in conjunction with toys (Toy Industries of Europe, 2003).

The purpose of this research is to determine metaphorical perceptions of preschoolers about the toy concept. The data is conducted by completing statement of “Toy is kind of/like; because” The research sample consists of 5 to 6 six years old preschoolers. This qualitative study applied phenomenology as the research method. Content analysis method and Saban’s (2009) data analysis method is applied to analyze the raw data. The data analysis process included coding and extracting data, compiling a sample metaphor image, developing categories, ensuring validity and reliability and quoting metaphors by statistical data.

In this study, pre-school teachers were asked about toys for pre-school children and their percentage (%) and frequencies (f) were evaluated through descriptive analysis. In content analysis, the aim is to reveal explanatory conceptual themes and associations of data collected from the participants. Summarized and interpreted data through descriptive analysis can be explored in more detail, through content analysis and conceptual themes may be discovered which are not recognized using descriptive analysis (Yıldırım and Şimşek, 2013). In the study, the conceptions of the conceptual categories of the produced metaphors related to toy concept for preschool children were made through content analysis.

The analysis of the data in the study was made at certain stages. Data collected from the children participating in the study were examined by two researchers.

Finally, each generated metaphor was associated with a suitable theme, and conceptual categories for the concept of "toy" were created.

The reliability of the study will be ensured by consulting the expert opinion. Analysis of research data continues.

21ST CENTURY TOY SEMIOTICS: TRACING TENDENCIES OF TOYIFICATION IN A LUDIFYING WORLD

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In 1990, Ernst Lurker predicted in his essay *Play Art: Evolution or Trivialization of Art?*: “I expect some major transformations to take place in society’s attitudes toward play.” Seven years later, play scholar Brian Sutton-Smith notes that the world is becoming more play-oriented. There has been a *ludic turn*, a “shift in sensibility that makes it possible to see contemporary living through the lens of play” (Sutton-Smith, 1997; Henricks, 2017, 7). It is the so-called *ludification of culture* (Raessens, 2006) entailing cultural sub-phenomena such as gamification, playification and finally *toyification*. With “ludification (also ludicisation) of culture” we indicate a cultural trend that sees playfulness and games become more and more culturally relevant. The rise of digital-games boosted this trend and nowadays games, as well as other forms of play, enjoy a new cultural centrality. Games are perceived as relevant; they become ways to *describe* our reality as well as models to *shape* our reality. This led to the birth of “gamification”: the deliberate attempt of making something more enjoyable or appealing by making it more game-like and/or playful (see also the term “playification”). It originated within digital media industry in 2008, but rapidly gained popularity and attracted the interest of many scholars (Deterding et al. 2011; Fuchs 2012; Hamari et al. 2014).

Our presentation focuses on *toyification* – a term which lies between ludification and gamification. By this phenomenon, we point to two, parallel developments: 1) The increasing prestige of toys, which start to find their way in classrooms, art museums, fashion and so on, influencing in this way other languages, and, 2) The deliberate attempt to design products according to toy aesthetics in order to make them more appealing. More specifically, toyification communicates the idea of an entity (physical, digital or hybrid) being intentionally reinforced with toyish elements or dimensions; an object, a structure, an application, a character or a technology designed to acquire a toyish appearance, form or function. Many physical, digital and hybrid products of the proposed ludic age all demonstrate toyified tendencies: domestic objects such as kitchen appliances, furniture and interior decoration pieces, vehicles such as cars, technological devices such as mobile phones, tablets and digital cameras, and entertainment products such as games become increasingly toyified both on the level of their visual and tactile dimensions, as aesthetic qualities familiar from toys are employed in their design digitally and physically. The *toyishness* of an object, a structure, an application, a character etc. may be evaluated based on visceral qualities such as colour-schemes, compactness and plasticity. Toyified entities invite playful use both in a metaphorical and practical sense—they may be employed both in playful, imaginative scenarios and in terms of ludic manipulation (Heljakka, 2014; 2015; 2016; 2017).

This presentation argues for the necessity to develop new understandings of toy semiotics. In a ludifying world, the importance of toys as physical objects and signs should not be overlooked: their meaningfulness is exceeding the boundaries of play—the so-called “magic circle”—and invading many aspects of everyday life. More focus, then, should be given to trace the tendencies of toyification in parallel to recognized phenomena such as gamification, as the world is becoming increasingly toy-like in many aspects of culture.

WORK AND PLAY: EXPERIENCES IN TOY TOWN

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Northampton, England is a town known for its shoe industry, but during the twentieth century it became “Toy Town” (Thomas, 2016) and a centre of innovation in the British toy industry. It remains today a centre of toy distribution and design. The University of Northampton has been working with the town’s industry and organisations, to capture the local history but more importantly to understand the creative value of play in the community (Thomas, 2013).

Starting from previous research, this paper will explore issues around the links between work and play, through a series of discussions with people working in Toy Town. How do the toys you play with as child lead to a career choice? Is play as “a child’s work” a notion that is being undermined in today’s schools? Does playing games develop skills for work? Is a play office interior truly creative? Does continuing to use play aspects of work – such as tinkering – keep us happier in retirement? Toy and play related projects at undergraduate level seemed to encourage creativity (Schaber, 2008), has this experience been shared in other disciplines and with more recent cohorts? How have our graduates (Betts, 2007) transferred their skills to the local industry? How is the world of work reflected in toy design today?

Some initial discussions and readings point to a concern that allowing toys and play at work generate noise, distract and are only suited to particular creative industries. Toys for some are a hobby or a private indulgence and not part of their work experience. The value of play debate in early year’s educational circles remains particularly strong. In a similar way, there remain split opinions what is a “good” toy. Some promote those that encourage learning or creativity but deride today’s toys linked to our 21st century connected world (Thomas, 2017). Is that not where the work is today?

The paper sets out to reflect on experience of staff, graduates and local employers and to share some thoughts about work and play. It is a contribution from one University research department in a Toy Town in the UK to another toy research centre.

**GAMES AS ENABLERS FOR SELF-PRODUCING SOCIAL SYSTEMS OF INTERACTION:
A STUDY OF GAME DYNAMICS IN FOOTBALL AS GAME AND TOY DESIGN PARAMETERS**

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The aim of this paper is to reformulate games and game design within the theory of self-producing social systems of interaction. With this research, I seek to identify dimensions of play and engagement that games elicit and by extension, can serve as game design parameters. The research is oriented around an analysis of football (soccer) within the context of Niklas Luhmann's theoretical framework of autopoietic or self-producing social systems of interaction (2012). The theoretical discussion of play situations in the two games reveals 5 game dynamics typologies through which games motivate play and engagement. These game dynamics are double expectations, multiple observations, continuing simultaneous communication, autonomy and unexpectedness through system coupling. The study further shows that when a game succeeds in eliciting these dimensions, functional, continuous and changing structures allow for the emergence of numerous behaviours and the production of new social systems of interaction. Finally, the typologies are analysed against Goffman's theory of games and play as frames, and how the identified typologies might be implemented in toys in order to enable play that is lifted from reality, a function he terms upkeying.

**PLAY AND LEARNING WITH LEGO
LEGO INSPIRES**

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LEGO plays a positive role in the development of a child's mental, social, emotional, and physical skills [Ackermann, E. 2004, The Whole Child Development Guide, The LEGO Learning Institute]. By using only traditional learning models *and* learning materials in traditional schools, it does not seem to be possible to meet the needs of 21st century children. Children enjoy learning using their own decisions and choices, at their own pace, and in their own learning styles, rather than listening and watching passively and fulfilling what is asked of them.

Children have an interest *and* need to learn actively by investigating, asking questions, solving problems by trial and error, interacting with one another, and enjoyment in the process. To meet these requirements, play is the most effective way of learning for children. Play triggers children's curiosity, satisfies their curiosity; and there are surprises in play which are positive and amusing experiences for children and also affords the freedom to express themselves, develops social interactions, and gives opportunities to produce new things every time. Due to those attributes of play, it is generally accepted that play is the most effective and facilitating way of learning. Children play with various materials, and LEGO is one of the most popular of those materials.

FROM « EDUTAINMENT » TO « LUDOPEDAGOGY »: BOARD GAMES IN CLASSROOMS.

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The paper will first summarize the official importance of play and games in several formal education systems from different countries and its evolution. Sometimes related to the influence of the New-School movement, the traditional use of games in classrooms is globally older and stronger in Anglo-Saxon, German and Nordic countries than in Latin ones. However a new paradigm is operating since the end of the 20th century especially in French speaking Belgium. The conclusions of University colloquia held in 1999 (Université Catholique de Louvain) and 2005 (Université Libre de Bruxelles) encourage board games in classrooms.

The evolution of society during the last century has raised needs for more flexibility, teamwork and capacity of managing more complex situations or solving more complex problems. School learning becomes more focused on competencies and less on knowledge. Moreover, recent researches in Neurosciences, Sciences of Education and Pedagogy legitimate playfulness, creativity and (inter)action in learning methods. Ex cathedra courses are no longer enough.

The learning and training of core transversal competencies by use of games in classrooms became a trend of recent research about pedagogical methods (ULB, Van Lint, 2014; Van Malder, 2016). To raise playfulness and intrinsic motivation, following several teachers, it seems to be more efficient not to use pedagogical tools called « educational games » or « serious games » but traditional board games and modern « Eurogames ». However their learning effects could depend more on the ludopedagogical support of the teacher. The fine tuning between pleasure and learning values has to be part of the didactic methods in teachers training. Unpublished micro studies held especially by HE2B and ULB students test these hypotheses and other effects of the use of board games in classrooms. In a general context of gamification of our society, « ludopedagogy » has to become a strong experimental science inside the education by entertainment or « edutainment » movement.

Since 2011 in several European countries including France and Belgium, the use of games like Chess, Bridge and Scrabble in classrooms is increasingly officially recognized for their effects to improve capacities of following rules, concentration, and logic though. Other games effects are linked with cooperative and collaborative learning methods or classroom cohesion and relationships.

Last but not least, to play board games also minimizes the negatives psychological effects of mistakes. *Felix fauta*, debriefings are necessary to put words to feelings and experiences. To learn children need to speak about their mistakes. The art of meta-cognition is now recognized as one of the most important pedagogical tools to improve them. Most of the time, neither toy artefact nor gameplay experience is enough for self-evaluation - this requires teacher' support. There is a lack of experimentation to be assertive, but we suppose that most teachers create their own games ex-nihilo. Unfortunately their understanding of board games is poor and therefore those games aren't enough fun. Therefore, the pedagogical adaptation of modern board games seems to be a very interesting new trend for classrooms.

**MAKING ART WITH TOYS:
A GENEALOGY FROM UTOPIAN AVANT-GARDE TO DISENCHANTED ERA**

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Toys created by artists or used in their visual works are a means which allows us to travel throughout the 20th century to our present. However, the issue has gone practically unnoticed for the historians of art and design. The so-called “artist's toys” flourished with the Avant-garde and its utopian *Manifestos*. Artists of the standing of Picasso, Minka Podhájská, Sophie Taeuber-Arp, Hannah Hoch, Ladislav Sutnar, Fortunato Depero, Alexander Calder or Alma Siedhoff-Buscher became true toymakers at some point in their lives, bestowing upon this ancient and unvoiced craft a new plastic dimension. Indeed, their playful artefacts were not only messengers of an original design but also a way of facing and symbolizing the world itself. Many of these toys evoked the spirit of Modernity, advocating the substitution of obsolete values for new prospects and heroic ideals: the utopia of the machine, technological advances, the city of the future as well as war, magic dreamlands, and faith in childhood as a creative paradise.

Nevertheless, our research will show that there is a deep division between the position of these early artistic movements and the “disenchantment” proclaimed by many creators from the second half of the 20th century and the turn of the 21st century. From the data collected in European and American archives and museums, we will see how the system of postmodern art projects the sign of “disenchantment” in childhood and its material culture, like dolls and playthings. The presence of the toy in these art works denotes a loss of innocence, not only towards childhood itself, but also towards the myths and meta-narratives the Western culture is cemented on. Hans Bellmer's “poupées”, the art installations by Carsten Holler and Annette Messager, Cindy Sherman's photographs, sculptures by Jeff Koons and the “Lego Concentration Camp” by the Polish artist Zbigniew Libera, express not only the collapse of Modern project, with its visceral reactions, but also the triumph of a nihilist anthropology, where play and toys are signs of sorrow, subversion and frivolity.

Against this background, it may be questioned if the contemporary art system will produce a new shining Kindergarten or will it only make as the French photographer Bernard Faucon does, toy cemeteries?

HYBRIDISATION AS A MARKER OF TRANSITION: THE *JEU DE FORTIFICATIONS*

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Hybridisation is often considered a rather recent phenomenon. Theoretically, hybridity is, among others, related to Bauman's 'liquid modernity', Haraway's Cyborg Manifesto and Latour's et al. Actor Network Theory. More recently, rapid innovations in digital technologies, mixing up and converging media and playthings with daily practices have increased the interest in the hybridisation of toys. The call for papers testifies to the above.

Hybridisation of toys, however, has a longer history. In his long-term historical study of home movies, Van der Heijden (forthcoming, 2018a and b) notes that hybridisation is omnipresent in the video era. Yet he argues that technological transitions in media are always accompanied by hybridisation. To study media in transition Van der Heijden suggests focusing on hybrids rather than stable practices, heuristically distinguishing between hybrid technologies, hybrid discourses, and hybrid practices. For historical research, I argue, turning Van der Heijden's approach around may be fruitful. The presence of hybrids may signal transitions.

Applying the above-mentioned heuristic on a peculiar game, *Le Jeu des Fortifications*, reveals different aspects of transition, meanwhile pinpointing specific points that are still in want of clarification. *Le Jeu des Fortifications* was invented by Gilles de la Boissière and first issued by Mariette in 1668. In French it was reedited a number of times, among others by Daumont, ca 1710, and by Pierre Mortier in Amsterdam at about the same time. German versions were published by Peter Schencken in Amsterdam, ca. 1700, and by Johann Ulrich Stapf in Augsburg, ca. 1730. Notably, no English version exists.

In this case, hybrid technologies are related to the manufacturing process. The *Jeu des Fortifications* combines a set of 52 playing cards (plus one additional 'arrival' field, the fortification) with the cardboard game of goose. The engraved board could be dissected into separate cards. The hybrid technology came at a price: normally games of goose comprised 63 fields. Only few examples of this specific type of hybrid technology exist, which is not unusual for transitional phases.

Hybrid discourses can be found in the rules of the game, printed at the edge of the top. On the one hand the rules indicate fees for arriving at specific fields; of old games of goose were games of chance and related to adult gambling. On the other, when arriving on field 48, this vocabulary is mixed with an educational aim: "Wer auff 49. kommt, da ein altes Schloss ist, mus wider anfangen, damit er lehre, es auf die neue manier zu befestigen, und bezahlt eins." (Schencken edition). The *Jeu of Fortifications* was an early educational game, explaining new principles of fortification.

This brings us to hybrid practices, the most challenging part to reconstruct historically. How was this game of fortifications used? And where? Through its inventor we know something about the context of use: elite military education. But how was it used in practice? Reflecting upon the material characteristics of the game – among others its dimensions – and input from historians of card games brings some answers and articulates remaining questions.

THE TOY AS CONSTITUTIVE INTERMEDIATE THING ABOUT THE FIGURATION OF THE SOCIAL ORDER BETWEEN REALITY AND VIRTUALITY

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If one follows the statements of the phenomenologist Eugen Fink, then the toy carries a peculiar ambivalence in itself. It is both “thing in plain reality and at the same time it has another, mysterious, reality”; it has a “magical character” (Fink 2010, p. 22). So a toy is at the same time a “plain real” thing as well as more than that. It is as something thing-like, something that transcends the empirical reality magically. But furthermore it is a “representation of all things in general” (ibid.). It refers, as Caillois (1982) states, to the constitutive aspects of the social order respectively to a constitutional logic of the social order (the example, which Caillois gives is the game Monopoly; it displays for him a constitutive meaning of a capitalistic logic for the social). The whole of the world seems to be “concentrated” in the toy as one “single thing” (Fink 2010, p. 22), because that, what he calls the world is characterized by a similar simultaneity of reality and virtuality. For Fink, the toy on this regard represents an “in-between”: A thing that is both real and virtual, both a reference to the constitutional logic of the social as well as leads beyond. But if the toy in this sense is an intermediate thing, then that must playing be an involvement with constitutional aspects of the social, which seems to be both real and virtual (see ibid.).

In this regard—and against the background of the present development of toys currently being designed as interface of reality and virtuality—the examination of toys refers to a specific constitutional logic of the modern social order between reality and virtuality (see Lacan 1973 and 1975, Žižek 1997, Laclau/Mouffe 2012, but also Lem 1996, Zons 2001, Rieger 2003). It makes formal use of the logic of the game and constitutes itself in such as an intermediate between reality and virtuality. Such an analytical perspective on what I have elsewhere called the “ludification of the social” (Wittig 2018) is to be pursued in the paper to be presented on the basis of the current confrontation with the toy as an intermediate thing between reality and virtuality.

Firstly, therefore, the specific constitution of the toy as an intermediate thing between reality and virtuality shall be traced out. After this, the paper will explore in a second step, what in this context can be called the “ludification of the social”.

RIDDLES OF THE SPIRIT
PROMOTING SUSTAINABILITY THROUGH PLAY DESIGN IN FINNISH EDUCATION

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Children are learning every moment; every childhood experience could influence their life-long values, attitudes and behaviours towards sustainability. Play, as the self-acquisition of knowledge, is the key way for children to explore and understand the world. The value of play is recognized by numerous studies as being significant to the well-being of both children and society as a whole. Therefore, this paper examines how play design promotes education for sustainability with diverse playthings and media. Specifically, the paper explores three cross-connections: between tangible and digital play; indoor and outdoor experience; and learning realistic issues through imaginative stories. It presents a set of playful learning tools, aiming to enhance children's environmental knowledge and awareness in the context of early childhood education in Finland. In a school context, the set assists the teacher and children to explore sustainability issues, and the relationship between humans and nature. The learning journey is guided by storylines and spiritual characters inspired by Finnish nature myths. The tools include riddles, activities instructions, DIY toys and visual maps, all of which are supported by digital devices. On the whole, the pedagogical framework combines the elements of multi-literacy, phenomenon-based learning and imaginative approaches to deliver the learning goals of education for sustainability. With collaborative design as the methodology, various stakeholders, educators, teachers and designers, are engaged to achieve the desired outcome, that is, the playful learning tools. This outcome will be distributed to kindergarten and elementary schools in Finland as creative commons for non-commercial purposes, thus supporting the idea of commercial-free learning environments for children. This project is developed in partnership with Playful Learning Center in University of Helsinki.

**PLAY FOR THE FUTURE CITIZEN:
SHAPING IDEAL ADULTS THROUGH CONSTRUCTION TOYS (19TH-20TH C.)**

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The paper will present work-in-progress from an on-going research project on the history of construction toys; the focus will be on the relation of construction toys with ideals of citizenship.

Historically, construction toys have played an important role in instructing children and preparing them to participate in social life as adults with specific roles and duties, starting with Friedrich Froebel who created educational building blocks for small children in the middle of the 19th century. Subsequent versions of construction sets in late 19th century Germany addressed the challenge of indoor entertainment for children of urban middle-class families, while at the same time promoted skills such as concentration, self-control and perseverance which were highly valued in a rapidly industrialising society. Although construction toys were not necessarily gendered, various types were specifically targeted to boys as future engineers. The relevant discourse emphasised progress, order and rationality, and regarded the engineer as the ideal male citizen. In the beginning of the 20th century, modernist designers and architects were fascinated by play and used construction toys as a way to explore ideas of utopian societies, the glass toy devised by Bruno Taut being a most interesting example. In communist Russia, building blocks were also employed as a model and metaphor for building a new society through engineering expertise and hard work. On the other side of the Atlantic, the Lincoln Logs, designed in 1916 and promoted nowadays by their manufacturer as “America’s National Toy”, may be used for the construction of forest cabins, frontier forts and other structures linked to the mythology of the American West; they are meant to raise active, bold and self-reliant citizens. Rich visual material will illustrate the above examples and highlight the uses of toys as powerful tools that influence the formation of children and therefore contribute in shaping the future.

POSTERS

STORYPASS: PASSWORD RULES HIDDEN IN A STORYTELLING TOY

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Today, children, the so-called digital natives, are growing up at ease with digital devices and they have access to them on a daily basis. As a result, many experts have developed, within the last few years, ample tools and practices for education practitioners, parents and children in order to help the latter group to adopt a safe online behaviour and be raised as responsible digital citizens. Among the elements of the digital citizenship (according to ISTE Standards) the issue of password security is one of the top priorities. As past research has shown that children shape their habits by observing (imitation) and recognizing patterns within their experiences (induction), it is essential to design learning experiences that help them understand password issues from a very young age. StoryPass is an (offline) prototype game which aims to sensitize young children on the importance of keeping their information private and using strong passwords for their log-ins and sign-ups. Capitalizing on the knowledge gained in the area of password robustness and entropy, this toy idea uses a creative storytelling method in an attempt to deepen children's understanding of password security issues.

**PLAYGROUND TOYS. BETWEEN MARKETING,
CHILD CULTURE AND SCHOOL SETTING**

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This communication draws on an ongoing collective research conducted as part of the “*Sciences du jeu*” (Game/play Studies) Masters' program of Paris 13 University. We describe and analyse children’s culture and its constructions. This analysis is conducted from a socio-anthropological approach, focusing on children games and toys as well as other objects they possess in the social space that is school, and mainly the school playground. On one hand, previous research has presented the schoolyard as children's self-contained space and time which fosters knowledge sharing, and the emergence and perpetuation of practices, traditions, rules and values. On the other hand, toys and children’s games have proven to play an effective part in constructing a play culture (“*culture ludique*”), especially when it comes to transmedia and mass media popular-culture. Our research will examine the intersection of these two crucial elements of child culture. The study will be based on an original empirical study, consisting of individual and collective interviews of children aged 6 to 11, as well as on an online survey, asking adults about the schoolyard toys and objects they used to take to school. We aim to explain the nature and characteristics of the objects which children take to school; on whether they are more traditional or transmedia, and the practices induced by such objects, be it playing practices, or even showing, trading, sharing, and talking. We are thus interested in understanding the importance of these objects and most importantly, we are trying figure out how the label of “schoolyard object” was put on these objects. Finally, the school context and the restrictions that come along with it come as a stress point between taste and culture in one hand and adult restrictions in the other hand.

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