Toys Matter:
THE POWER OF PLAYTHINGS
9th ITRA World Conference

Book of Abstracts

August 9-11, 2023
The Strong National Museum of Play
Rochester, NY USA

INTERNATIONAL TOY RESEARCH ASSOCIATION

PRESIDENT: Mark Allen, Serious Fun Play Lab
PROGRAM CHAIR/VICE PRESIDENT: Greta Eleen Pennell, University of Indianapolis

The 9th World Conference of the International Toy Research Association is organized in collaboration with The Strong National Museum of Play in Rochester, NY USA.

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 9th 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 Paris, France in 2018.

The Strong National Museum of Play (https://www.museumofplay.org/) is a highly interactive, collections-based museum devoted to the history and exploration of play. It is one of the largest history museums in the United States and one of the leading museums serving families. The Strong houses the world's largest and most comprehensive collection of historical materials related to play and is home to the International Center for the History of Electronic Games, the National Toy Hall of Fame, the World Video Game Hall of Fame, the Brian Sutton-Smith Library and Archives of Play, the Woodbury School, and the American Journal of Play. Together, these enable a multifaceted array of research, exhibition, and other interpretive and educational activities that serve a diverse audience of adults, families, children, students, teachers, scholars, collectors, and others around the globe

The overarching theme for the 9th ITRA World Conference is Toys Matter: The Power of Playthings. The conference also marks the 30th anniversary of ITRA's founding and provides opportunities to not only reflect on three decades of toy research but to also look forward in order to broaden the scope of what counts as a toy, and to expand our understanding of the power of playthings and the many ways they matter -- for both children and adults. This conference is a timely opportunity for toy researchers, designers, inventors, advocates, archivists and other toy professionals to discuss the role toys play in our individual and collective identities, and the various ways they reflect and shape our worlds (both positively or negatively), as well as the impact of technology, environmental concerns and societal/cultural crises on toy design, manufacture and use. We invite work that examines the power of playthings both historically and in our ever-changing worlds, especially as we navigate these precarious and even perilous times.

All play objects, whether physical, digital or hybrid, are included in the scope of toys to be discussed at this conference. This includes games, as well as indoor and outdoor play spaces.

Tuesday, August 8, 2023
8 AM – 4 PM PRE-CONFERENCE EXCURSION TO FISHER PRICE IN EAST AURORA, NY.

Wednesday August 9, 2023
8:00 – 8:30   REGISTRATION – MAIN ENTRANCE THE STRONG NATIONAL MUSEUM OF PLAY
8:30 – 10:30   OPENING CEREMONY & KEYNOTE
         TIM WALSH, Serious Play
10:30 – 11:00   COFFEE BREAK
11:00 – 1:00   CONCURRENT SESSIONS
         Toying the Museum Part 1: Visitor's Experiences of Play in Toy Museums and Exhibitions
         Digital and Smart Toys
         Toying with Gender and Inclusion
1:00 – 2:00   LUNCH
2:00 - 4:00   CONCURRENT SESSIONS
         Cultural Codes and the Stories Toys Tell Us
         The Test of Time: How Toys Matter
         Expanding our Conceptual Tool Belt for Toy Research
         Workshop: Designing for Kids: A Children's Rights Perspective
4:00 – 5:00   PLAY BREAK – EXPLORE THE MUSEUM
         *Please note that **the museum closes at 5 PM**, Everyone must leave the museum at closing. It will re-open for ITRA guests at 6 PM (18:00) for the Anniversary Gala Dinner.*
6:00- 8:00   30TH ANNIVERSARY GALA DINNER

Thursday August 10, 2023
8:30 – 10:00   CONCURRENT SESSIONS
         Innovations in Toy Design and Evaluation
         From Yesteryear to Tomorrow: Creating Systems to Understand Toys and Games
         Learning with Toys/Games
         Publishing Toy Research: Meet the Editors/Authors Discussion Roundtable
10:00 – 11:00   PLAY BREAK W/ COFFEE – EXPLORE THE MUSEUM
11:00 – 1:00   CONCURRENT SESSIONS
         Toying the Museum Part 2: Toys as mediators in museum contexts
         Therapeutic Power of Playthings
         Whose Design for Whom?
         Workshop: Wearing Me Out: Is this Toy Mine or Me? 'ID-Toy' Jewel-making
1:00 – 2:00   LUNCH
2:00 – 3:15   SPECIAL SESSION: ITRA AT 30: REWIND, SET, GO
3:30 – 5:00   CONCURRENT SESSIONS
         From Toybox to Toolbox: The power of playthings through the lifespan
         Inside and Out: The Power of Play Spaces
         Screen Time as Toy Time
5:00 – 5:30   TEA TIME & SNACKS - *Please note that the museum stays open until 8 PM!*
5:30 – 7:30   ITRA PRIZE FOR OUTSTANDING TOY RESEARCH PRESENTATIONS
         Junior Prize: *Female Empowerment: A Multimodal Analysis of Representations of Women in Images of Barbie Dolls' Packages* *Janaíne dos Santos Rolim, Brazil*

         Senior Prize: *The Toy Piano: From the Playroom to the Concert Platform*, *Antonietta Loffredo, Italy*

Friday August 11, 2023

8:30 – 10:30   CONCURRENT SESSIONS
  Toy, Play, Advocate: Harnessing the Critical Power of Playthings to Mediate Sociopolitical Phenomena
  Immigration & Assimilation: The Power of Playthings
  Toy Play for Learning
  Workshop: Behind the Scenes with The Strong's Collections
10:30 – 11:00   COFFEE BREAK
11:00 – 1:00   CONCURRENT SESSIONS
  Toying with Tradition: Designing at the Intersection of Toys and Torah for the Modern Jewish Childhood
  Sustainability & Green Design
  Toy Design Pedagogy
1:00 – 2:00   LUNCH
2:00 - 3:00   KEYNOTE: PAUL DARVASI, *How They Race in Los Santos: A Critical Decolonization of the World's Most Controversial Game*
3:00 – 4:30   GENERAL MEMBERSHIP MEETING & CLOSING CEREMONY
4:30 – 5:30   ITRA BOARD MEETING
5:30 – 7:30   FAREWELL COOKOUT AMERICAN STYLE AT WITMER HOUSE UNIVERSITY OF ROCHESTER

KEYNOTES

SERIOUS PLAY

Tim Walsh, The Playmakers USA
www.theplaymakers.com

Join author and play designer **Tim Walsh** for an opening keynote talk on the power of playthings as play iterates for a person across time. This 45 minute talk to launch the 9th ITRA World Conference promises to set an open and playful tone with insights and stories of when play works and what happens when play goes away. 10 minute Q&A to follow.

Tim Walsh is a 33-year veteran of the toy industry, and began his toy career at Patch Products (now PlayMonster) as its VP of Product Development & Marketing. He was instrumental in taking that company from $3 million in sales to over $23 million in just 7 years and His designs and co-designs of games have sold over 7 million copies. In 2010, Tim co-produced the award-winning documentary Toyland. In 2016, he co-produced and co-directed OPERATION: Operation The Power of Play with Peggy Brown. In 2020, Tim launched Roo Games with toy industry veterans Dennis Callaghan and Scott Brown and also launched a new YouTube channel celebrating toy and game designers.

ITRA AT 30: REWIND, SET, GO

Kathleen Alfano, USA
Gilles Brougère, France
Cleo Gougoulis, Greece

Three of ITRA's founders come together to reflect on the past 30 years of toy research and look forward to where they see toy research and researchers going in the future as we continue to expand our understanding of the power of playthings and the many ways they matter -- for both children and adults.

HOW THEY RACE IN LOS SANTOS:
A CRITICAL DECOLONIZATION OF THE WORLD'S MOST CONTROVERSIAL GAME

Paul Darvasi, Gold Bug Interactive & OISE | University of Toronto, Toronto Canada

The action figures, cars, trucks, and guns that populate the world of toys converge in the digital playground known as Grand Theft Auto V (GTA V). As the third best-selling video game in history, GTA V has garnered both immense popularity and notoriety for its portrayal of violence, misogyny, and criminality. However, beneath its controversial surface lies a complex and referential text that draws upon century-old traditions of play.

Among its problematic elements, the depiction of race and racialized places is prominent, but understudied. How does the game perpetuate and challenge racial tropes? How does the game invite players to question their own assumptions and attitudes, if at all? How are predominantly white adolescent players impacted by engaging with race in the game? What are the socio-cultural implications of these depictions, considering their impact on players' perceptions and broader societal discourses? What place, if any, does a game like this have in a child or adolescent's education?

By engaging in this critical exploration, light will be shed on the significance of media representations in shaping collective consciousness. Ultimately, this presentation serves as a call to action for decolonization within the realm of toys and games, advocating for more inclusive narratives and critical curricula to help challenge and dismantle harmful stereotypes. Understanding and critiquing the intricate nuances of GTA V can foster a greater appreciation for the transformative power of critical play and its potential as catalysts for social change.

Paul Darvasi is a scholar, game developer, educator, speaker, and writer who works at the intersection of games, culture, and learning. He is the CEO and co-founder of Gold Bug Interactive, and is a founding member of the PlayLab at the University of Toronto, where he lectures on social media and education, and games and learning. He is a passionate advocate of serious games, digital games for learning, media and digital literacy, design thinking, experiential learning, virtual simulations, and locative experiences. His experiments with game design have included large-scale ARGs, activating institutional archives, interrogating online surveillance, addressing climate change issues, and supporting humanitarian activity. Paul writes for a variety of publications about progressive and innovative education models, and his research explores how commercial video games can be leveraged for teaching and learning. He wrote a widely circulated white paper for UNESCO about how digital games can support peace education and conflict resolution, and helped global youth develop games to prevent violent extremism in the Digital Games for Peace initiative run by UNCCT, UNESCO, and UNAOC. Paul is a frequently invited keynote speaker and panelist, who has lectured and presented at conferences and universities around the world. He has shared his expertise with the US Department of Education, UNESCO, the National Association of Secondary School Principals (NASSP), Epic Games, US presidential libraries, foundry10, Consumers International, iThrive, and Connected Camps, among others. His work has been featured on PBS, NPR, CBC, the Huffington Post, Polygon, Killscreen, Gamasutra, Sterne, Endgadget, Edsurge, Edutopia, and MindShift.

ITRA Prize for Outstanding Toy Research Presentations

JUNIOR PRIZE FOR OUTSTANDING TOY RESEARCH

Janaíne dos Santos Rolim, Universidade Federal da Paraíba, João Pessoa, João Pessoa, Brazil
Female Empowerment:
A Multimodal Analysis of Representations of Women in Images of Barbie Dolls' Packages
Masters Thesis (2020) written under the direction of *Danielle Barbosa Lins de Almeida*
Universidade Federal da Paraíba, João Pessoa, João Pessoa, Brazil

The present work revolves around the examination of women's representation by Barbie doll. Dolls have been described as "social actors" that through their design, movement, color schemes, etc. reflect the "social contexts and ideologies of the time of production" (Caldas-Coulthard; Van Leeuwen, 2002, p.91). This paper is, then, dedicated to looking at the semiotic elements of Barbie and her packaging in order to examine female representation in relation to traits of empowerment, and it is developed through a qualitative and interpretative approach since we intend to explore human experiences by analyzing the implicit meaning behind semiotic choices made by the producer for the production of a toy and its packaging. Images used for our analysis were collected during a research fellowship at the Strong Museum of Play by Dr. Almeida. Analysis of these images were centered on the representational and compositional metafunctions of the Grammar of Visual Design of Kress and van Leeuwen (1996 [2006]), and on the System of Transitivity which is within the ideational metafunction of Halliday's Systemic-Functional Linguistics (1978; 1985). A total of four hundred (400) images of eighty-five (84) different dolls were made available for this investigation. However, given that women and dolls haven't typically been endowed with empowerment messages, we selected five (05) dolls that, from the ideal information on the package, suggested independence and the potential for empowerment, our dependent variable of interest once this is a quasi-experimental study. As for the result of the analysis, we acknowledge that the analyzed Barbie doll's packages, especially the female representation attributed to Barbie, can be considered empowered, first, at the linguistic level since they presented power through the applicability of a variety of process; second, accordant to what was claimed by women in each wave of feminism, the representations of these dolls showed us that the women represented by Barbie have the power over, that is, the power to be leaders and guide others who have less power in order to achieve their goals. But not only that, they have power to make decisions, to go after their dreams, find solutions to problems and to be creative. Also, they have power with others, they can share objectives with other for a common good to all. And, finally, they have the power within themselves, that is, to change their lives and the lives of others, evidencing the initial purpose of her creator Ruth Handler.

SENIOR PRIZE FOR OUTSTANDING TOY RESEARCH

Antonietta Loffredo, Independent Scholar, pianist and musicologist, Como, Italy   https://antoniettaloffredo.com
The Toy Piano: From the Playroom to the Concert Platform
Published UT Orpheus, Bologna (Italy), 2018 ISBN: 978-88-8109-511-7

This lecture-performance, based on the main themes in Loffredo's book will focus on how the toy piano went from children's toys to concert hall. Her talk is complemented by her performance on the toy piano of three pieces – *In Veils* by Erwin Deleux, *Black* by Paolo Ricci and *Cobblestones* by Paul Smith – will offer the audience a taste of the magical sound produced by this fascinating instrument.

Book Abstract: In 1948, John Cage offered the public his Suite for Toy Piano. Performed at Black Mountain College (North Carolina), with choreography of dancer Merce Cunningham, it later became a solo instrumental piece and the point of reference for all musicians dedicated to the art of the toy piano. This little piano was different from the standard piano both for its small dimensions and for its sound produced by hammers striking different length metal rods. Into the first decade of the 21st century, several cultural and musical initiatives around the world have increased and spread repertoire dedicated to the toy piano, making it a key player in the contemporary music scene. All aspects of the toy piano are discussed in this book which offers a comprehensive source of information to those interested in widening their knowledge of this topic. After detailing the origin of the toy piano, its constructive characteristics and its challenging acoustic behaviour, the book provides an extensive overview of the scored repertoire, as well as an analysis of the cultural contexts which saw the toy piano continue the tradition of toy instruments in art music.

SYMPOSIA

TOYING THE MUSEUM PART 1:
VISITOR'S EXPERIENCES OF PLAY IN TOY MUSEUMS AND EXHIBITIONS

Organizers: *Mathieu Gielen, Delft University of Technology, Delft, Netherlands*
Lieselotte van Leeuven*, University of Gothenburg, Gothenburg, Sweden

In this symposium, we study the relationship between toys and the museum. Within typical traditional toy museums, toys are often presented as static, precious museum treasures. Toys in this context are valued as historic artefacts that tell socio-cultural-economic stories of past child life and leisure-time.

In other museums, toys and related playful materials are often implemented to help children to not be disruptive to adult intentions or to guide attention to the collection that adults find of interest, aiming to bring the adult discourse on those items 'down' to children's level of understanding.

We problematize some of the common practices in museums related to toys:
- Toys ultimately being best understood and appreciated in actual use, but historic toy collections don't permit this;
- Toys and children's play being seen as disruptive to the serious, calm and studious atmosphere that museums aim to create for their visitors;
- Toys being developed by adults to support a specific focus and understanding of the items and collections on display, and through overly guiding the experience limiting the options for free self-directed playful behaviour;
- Children's autonomy to create meaning by actively relating to museum spaces and exhibits being minimized rather than supported by design and rules.

The aim of the symposium is to showcase and debate the various approaches to children's toy-based access to museums and exhibition contents, and the role of new toy designs in advancing the playful, self-directed experience of museums. We aim to advance research and practice by mapping current tensions, activities and topics; hence we include contributions of original research and thought-provoking designs.

RECLAIMING CHILDREN'S CULTURE IN TOY EXHIBITIONS
PORTRAYING CHILDREN'S PLAY IN THE PAST
Cleo Gougoulis, University of Patras, Patras, Greece

Traditional toys and toys made by adults for children have been officially recognized by UNESCO conventions as part of children's cultural heritage and it is in this capacity that toys are portrayed in many exhibitions and toy museums. As one of the museums' main functions is to preserve tangible and intangible heritage many museum exhibitions including toy exhibitions foster a no touch policy regarding exhibits that precludes contemporary children from interacting with past children's toys. In the past two decades however participatory research and collection formation as well as participatory curating processes have gained ground in interdisciplinary literature on heritage, childhood and play studies where efforts are made both to give voice to past childhoods and involve current children in the construction of their heritage. The paper will discuss questions arising from two examples of toy exhibitions in a school and a municipal setting in a Piraeus neighbourhood and the city of Agrinion Greece where attempts were made by the curators to encourage contemporary children's interaction with traditional and self-made toys through construction processes and playful handling of selected exhibits and replicas of toys.

PLAY LIVES ON: CURATING HONG KONG DESIGNED PLAY IN TIMES OF CRISIS
Rémi Leclerc, PolyPlayLab, Hong Kong SAR, China

This presentation describes research, design, production, and hosting of a design for play exhibition and workshops for the general public in Hong Kong (HK). Organised by a local design association, the exhibition showcased over 200 exhibits from 70+ exhibitors across five spaces in a heritage tenement building in Wan Chai over two months. Room 1 featured interactive fixtures demonstrating ipsofacto attributes of play and design, thus contending there is no designing for play without playing for design. A Plaything DIY DNA icon system featuring four design categories, eight play types, and a joker, facilitating at least seven cultural practices, illustrated play's sociocultural agency—how instances of play generate life stories. Room 2 showcased the value of 'played lives' through a post-war, post-97 retrospective of HK designed play (the UK retroceded HK to China in 1997), arranged along 4 categories: Image, Object, Body, and Space. In Room 3, critical 'playworks' straddling art and design enticed visitors to ponder how play, as a conceptual 'Trojan hobby horse', enhances designers' speculative practice, in a 'Design Play'. In Room 4, a Toymaking Playbench stocked with various materials integrated the exhibition's play and design concepts. With a token coin, visitors obtained clips from a nearby capsule vending machine to assemble a toy for keeps on the Playbench. Room 4 also displayed outcomes from pre-exhibition public 'playshops' facilitated by HK designers. Finally, linking expo to community, simultaneously entry to and exit from, a Playground was commissioned to a HK design unit to animate the premises' Public Outdoor Space. The presentation discusses the value of hosting such an event in times of crisis; how curation, balancing interaction and information, ensured play and design were introduced to visitors through playing and designing; and how this celebration of HK's unique take on play offered a timely affirmation of its rich cultural identity—that play lives on in HK, regardless. (The Design Play exhibition was organised by the Hong Kong Design Centre's Design Spectrum public outreach unit. Curation and design: Rémi Leclerc and Chi-wing Lee. Visual communication: Benny Lau.)

TOYS IN THE STRONG NATIONAL MUSEUM OF PLAY
Catherine DeBellis & Kristy Hisert
The Strong National Museum of Play, Rochester, New York, USA

In a collections-based museum focused on play, it's important to share and interpret the collection while also allowing opportunities to engage with play. At The Strong, we use toys as a way to engage guests with artifacts and exhibits both on a permanent and temporary basis. Through exhibits and programming, a relationship is formed between museum artifacts on display and the physical experience of play. These connections both support the museum's play-based mission and engage guests with artifacts that cannot be touched themselves. We will discuss our strategies for supporting the museum's collections with interactive exhibit components, manipulatives, public programs, and experiential opportunities, while addressing some of the challenges of this work.

INVESTIGATING AND INTERVENING IN HOW PLAY IS CONSIDERED IN THE DANISH MUSEUM LANDSCAPE AND THE DANISH NATIONAL MUSEUM

Sune Klok Gudiksen & Karen Feder Design School Kolding, Kolding, Denmark

Play design and the design for playful exhibitions and playfulness in the Museum exhibition are for many Danish Museums still in its infancy. At the same time the phenomenon of play is still hard to grasp and to apply in context of Cultural History museums with their main purpose to display historical content. However, in some museums, play as a phenomenon is also finding it's way into developing strategies for future exhibition programs. One such recent case is the Danish National Museum which established a so-called Play Lab to assist their development processes of new exhibitions. We investigated the status quo of what is considered a playful exhibition in the Danish Museum landscape. Through semi-structured interviews with the heads of exhibitions we explored what these leaders consider to be playful in the exhibitions and how they have designed for this. The 10 interviewees and museums were selected based on recent leading-edge exhibitions in Denmark with a focus on cultural history Museums. Each interview was followed by tours through the exhibition and observations of visitors in interaction with the exhibitions. In these tours we had a specific focus on the props, tokens and interaction objects provided in the exhibitions. We used this knowledge and research on play, toys and museology studies to inform an exploration and intervention in the Danish National Museum. First, we gained an understanding of the current use of their Play Lab through interviews with its main responsible personnel regarding their visitor-centered approach (for instance child-centered, youth-centered, family-centered etc). Next, we conducted a play design intervention workshop for the Museum personnel to reflect on and imagine new dimensions and different kinds of playful experiences either adding to or departing from current ways of working with exhibitions. We will present the first results of this on-going case study and highlight the dilemmas found in the organizations and opportunities that the Museum agreed to pursue.

TOYING THE MUSEUM PART 2: TOYS AS MEDIATORS IN MUSEUM CONTEXTS

Organizers: *Mathieu Gielen, Delft University of Technology, Delft, Netherlands*
Lieselotte van Leeuwen, University of Gothenburg, Gothenburg, Sweden*

A continuation from Toying the Museum Part1, this session features additional scholars to extend the examination and debate around the the various approaches to children's toy-based access to museums and exhibition contents, and the role of new toy designs in advancing the playful, self-directed experience of museums.

CONTEMPORARY ART EXPLORATION: A RESEARCH THROUGH DESIGN REVIEW

Mathieu Gielen, Kati de Jong & Arnold Vermeeren**
Delft University of Technology, Delft, Netherlands

This review revisits design work on encouraging families to a personal experience of (contemporary) art together in 'Kunstmuseum Den Haag'. The resulting tool is analyzed with a research-through-design lens; the research question being: what attributes of the design link families' play behaviours to shared experiences of the artworks. Based on a review of design aims, test observations and theory of play, the following attributes are identified: Materiality. Bringing into the art space something to hold onto and to focus attention on, changes the 'locus of control'. No longer is the family subject to a direct confrontation with the art; they can choose to focus on the toy and shape their play – selecting any artworks as props in that play. A chance element. In each round of play a spinning board asks to identify e.g. the biggest, emptiest, weirdest artwork in the next museum room. This randomization procedure makes clear that no predefined route or pre-selection of artworks is in place, and therefore the play is not intended to communicate specific messages from museum educators. Roles and roleplay. Each family member chooses one of multiple available roles, and receives a booklet with questions and challenges related to that specific role. These help family members to engage in 'as if' behaviours and enjoy the freedoms that the pseudo-reality of play offers. The roles and challenges however are pre-defined, and embedded in a proposed order of actions, hence the toy can be regarded as rule-based team play, incorporating elements of gaming. A quest for expression. The questions and challenges presented to players trigger different interactions with the artworks (e.g. looking at them upside down, or simply selecting the preferred colour swatch from an artwork) and ways of expression (e.g. through dance movements, or impersonating an object from a painting). These challenges are oriented towards freedom of individual explorations and expressions rather than seeking communal agreement. Conclusion: this toy/game hybrid design exemplifies that through materiality, an element of chance, role-play and expressive challenges, children and families in the context of a generally non-playful (contemporary) art space are offered both the pseudo-realistic play frame and behavioral hints that elicit their personal experience of randomly chosen artworks. We propose follow-up studies to apply these attributes in a range of designs and test them in context, to explore their potency.

IN FAVOR OF THE FIDDLE FACTOR:
USING TOY-LIKE ACTIVATION TOOLS WITH MUSEUM AUDIENCES

Katriina Heljakka, University of Turku, Pori, Finland

I present research conducted with simple paper technology used to create toy-like tools suitable for audience activation at museums. Focusing on creative uses of the Comicubes (Heljakka, 2014) the proposal showcases an exploratory, three-partite study, including empirical investigations with participatory observation and surveys conducted at three museums—a children's museum, a history museum, and a play and toy museum. Each part of the study represents an individual case, which demonstrates a different use of the Comicubes involving various types of object play. The Comicubes, which inspired us to design an activation tool suitable for museum play, is a tangible physical object made of cardboard that allows three-dimensional manipulation. The tool affords various forms of interaction, depending on its users' age and skills. In previous work, Comicubes have been used in workshops with children, youngsters, and adults in the contexts of early education, art, design, and higher education, in which we have observed its capacity to prompt creative thinking and playful actions. When combined with playful tasks, the tool has been described as "a lubricant for creativity". The motivation for our initial research was to find out in which ways the tangible tool facilitates intergenerational interaction and co-play by engaging families to fill out a survey mounted on the cardboard cube together during their visit to a children's museum. The pilot was carried out in 2019 and is reported in a forthcoming publication (Heljakka & Ihamäki 2023). The two consecutive phases of research will take place in spring and summer of 2023, as the toy-like activation tool is taken to a history museum and a toy museum, both based in Finland. In these instances, the tool will have a different purpose—in the history museum, to engage museum visitors to interact with various displays by rotating and reading information from the cube, and in the toy museum, to play an escape room type game through using the Comicubes. The contribution of the study is in showing how haptic interfaces that invite to playful interaction with museum exhibits can be encouraged and generated in visitors by using toy-like tools with a 'fiddle factor'—manipulable, three-dimensional objects with intergenerational appeal, which afford cognitively, physically, and artistically engaging object play to museum visitors of many ages—and in doing so, generating enhanced, playful museum experiences without digital components.

MUSEUM TOYS AND CHILD CULTURE

Lieselotte van Leeuwen & Johnny Friberg
University of Gothenburg, Gothenburg, Sweden

Young children and precious museum collections are a difficult match. Treasure hunts, stories and games are designed to guide and educate children through museums. They communicate (adult) culture in a child-friendly way. Could toys/tools enable children in museums to also live their own culture alongside and with adults? Could children with the help of toys contest their ownership of museums as public places? What if young children's meaning making is not just seen as attempts en route to the 'right' understanding of museum exhibits and institutions? What if adults are not just scaffolding that route, but engage in ways that might also change their own perceptions and meanings? Increasingly museums are understood as informal learning spaces allowing children's and adult roles to change from 'passive recipient to choreographer, translator and innovator' (Watermeyer, 2012). When exhibits and spaces are precious heritage and the children are pre-schoolers, it seems impossible to grant them the autonomy needed to explore their own relationships to the museum situation. It also seems impossible that they could contribute valuable meanings to a collection and/or a museum space. Combining Wertsch's (1998) concept of mediating objects and the notion of ambiguity in design, we propose a framework for designing toys/tools that could invite also young children as co-creators of culture into precious museum spaces. Mediating objects in this context are those which allow child and adult cultures to permeate each other. The notion of ambiguity in design refers to objects that meet diverse action capacities of young children but don't prescribe meanings (Gielen & van Leeuwen'2016). We will argue for design strategies that empower children to become (co-)inventors of meanings in a way that can inform them, but also adult visitors, curators, and museum staff.

KICK-STARTING THE DEBATE: VIDEO-ILLUSTRATED CASE STUDIES OF TOYS AS MEDIATORS FOR CHILD AGENCY IN MUSEUM CONTEXTS

Catherine Paterson[*], Lekkontoret, Gothenburg, Sweden
Elisabeth Wallingford[†], University of Gothenburg, Gothenburg, Sweden
Introduced by Lieselotte van Leeuwen

A case study is used to exemplify the ways in which toys can help children to autonomously create meaning in museum spaces. Over the course of two years, the author prototyped a method for participatory design with children at a heritage site in Gothenburg, in order to open the site to a younger audience. The project has resulted in guided tours of the venue, designed by and for children; a playhouse co-designed with children; child-led pattern-making in response to the site's tapestries, as well as form and color 'hunts' through the building. Toys - defined here to include tools, props and scenographic elements - played a central role in the participatory design method throughout the case study. Some of the toys were designed by adults, others by child participants. The project aimed to use these toys as tools for children to investigate and discover the museum and its contents through play and self-guided interest. Toys, it is argued, can be objects to support children and adults design together, and can prove invaluable in giving children a sense of ownership of and autonomy in the museum space. Child-created toys can also be a way for children to play through and investigate the museum on their own terms. Adult designed toys may be used as intended or be re-interpreted in child-led roleplay. The use of toys risks exacerbating existing tensions between young children and fragile museum environments - demonstrating the tensions and dichotomous understandings of play vs. the 'serious' museum space of learning. However, they can also become a buffer between child bodies and the fragile museum environment, providing children with their own space and tools, scaled to their bodies and based on their interests, within the museum. Adopting a playful and independent approach poses a challenge to staff in museum spaces and the way knowledge is traditionally communicated in museums, however this challenge is something which, if confronted, can lead to a more democratic, engaging and fun museum experience.

Toy, Play, Advocate:
Harnessing the Critical Power of Playthings to Mediate Sociopolitical Phenomena

Organizer: *Rémi Leclerc, PolyPlayLab, Hong Kong SAR, China*

Almost ninety years ago Huizinga wrote "Play adorns life, amplifies it, and is to that extent a necessity both for the individual—as life function—and for society by reason of the meaning it contains, its significance, its expressive value, its spiritual and social associations, in short, as a cultural function. The expression of it satisfies all kinds of communal ideals."

Toys—the props for play—are embedded with cultural ideals, hence matter to addressing social issues. Playing with toys, we play with culture, thus leveraging their power as communication tools to shape meaning. Yet play happens outside playrooms and playgrounds—outside 'playtime'. Children and adults increasingly play with toys outside conventional instances of play, using them as media channelling emotions and knowledge, facilitating community participation. Toys are used as accessories to project identity and channel political protest, as play therapy props to promote resilience, as artwork to advocate against war, as inspiration in design education to articulate individual agency and community development, or as multimedia tools projecting fantasies of power used for army recruitment and government propaganda.

This cross-disciplinary symposium gathers art, design, education, and research practitioners sharing an interest in researching the power of playthings in mediating sociopolitical phenomena for better for worse.

The symposium encourages discussions focusing on the role toys play in mediating critical phenomena and the implications for toy research and design. Research presented privileges qualitative approaches, including field experimentations, observational and participatory approaches, interviews, real-life applications, and thematic and reflective analysis.

Leon Wang's intensive architecture design studio, facilitated at a US university harnessed toy-making to activate and empower students toward design leadership and advocacy via large scale art/message interventions.

William Lugo's research demonstrates how the private video game industry bringing on the US military's expertise impacts their video games' themes and story lines, thus giving adolescents a false perception of the US military and foreign policy initiatives.

Brian McCarty's photo series about children's experiences of war, expressed through art-therapy-based collaborations in the field, led him to found the War Toys® nonprofit organization. They are working within the generic toy industry to foster better designs for children everywhere.

Rémi Leclerc's analytical review of toys produced and used during Hong Kong's 2019 pro-democracy movement will focus on the context of their production and consumption, their value for the demonstrators, and their meaning for political dissent.

FROM PLAY TO POWER:
UTILIZING TOY-MAKING FOR STUDENT ACTIVATION AND MOVEMENT BUILDING
Leon Wang, Firebird Design Lab, St Paul, MN, USA

This presentation describes a design studio facilitated in a US university for undergraduate architecture students which utilized toy-making to cultivate purposeful creativity and individual agency. This unique pedagogy focuses on the primacy of building up the individual, based on the notion that an activated student can better harness the knowledge, tools, and industry conventions being taught at the school. The ultimate objective of the studio is to mentor the students toward stewardship and advocacy for themselves, their education, and beyond. The initial "loading phase" of this intensive studio paced the students through a series of personal toy design projects for foundation building. All parameters are intentionally kept limited and rigorous (including tight constraints on materials and time), with the goal of maximizing creativity and problem solving via minimal means. The toy-based design challenges included spinning tops, desktop arcades, and playful objects that later became city-scale, habitable pavilions. The final "launch phase" of the studio culminated in the "BE THE CHANGE" community art/message intervention. The students were entrusted with the responsibility of sparking authentic discourse via multiple installations within the architecture school building. The students took on the topic of school and industry culture – by thoughtfully and constructively addressing the issues they are facing in the architecture program. The presentation concludes with a reflection on the reactions regarding the pedagogy and outcome of the studio. The prevalent feedback from students was that the studio helped them with grounding and confidence as aspiring architects/designers and individuals. They conveyed to the school leadership that this course should be a part of the foundation for the architecture program. Industry and community-based jurors remarked that the students have grown to embody leadership and impact through the studio. The response from the school administration and faculty were more polarized. While some questioned the propriety of this studio and the installations, others expressed that the work resonated deeply with them and called for more of this type of teaching and engagement. The installations were prominently featured in the school's PR and marketing materials, with overwhelmingly positive responses from the at-large community.

WAR TOYS FOR PEACE
Brian McCarty, War Toys®, Los Angeles, CA, USA

War Toys® is a 501(c)(3) nonprofit organization founded in 2019 by photographer Brian McCarty, based on a decade of research and work in the field. Combining elements of documentary and still-life photography with an expressive therapy base, Brian recreates children's firsthand accounts of war by narratively staging and photographing locally-sourced toys on location, often inside active war zones. Children share their stories of survival and loss through carefully-designed, art-therapy-based interviews in sessions run by a specialized art therapist, trained in trauma-informed care. The resulting photographs capture and contextualize what the children choose to share through the pantomime of toys, plainly showing the universality of suffering. Seeing the same toys many know from our own childhoods, placed and posed in scenes of actual conflict, encourages audiences to connect, place themselves into the moment, and understand war from a new perspective—as a child, for whom the "bad guy" is whoever is shooting at them. Brian McCarty will present a small selection of work with children from Ukraine, Iraq, Syria, Israel, the West Bank, and Gaza Strip; share experiences and observations from sourcing toys in these locations; and discuss a groundbreaking toy industry program that War Toys is developing to advocate for more peaceful ideals on a global scale.

PATRIOT GAMES: POLITICAL PROPAGANDA IN VIDEO GAMES
William Lugo, Eastern Connecticut State University, Willimantic, CT, USA

Today children spend more time playing video games than watching television. And as video games increase in popularity for both children and adults, they are also garnering serious attention from established advertisers and organizations. For these reasons, and the fact that young males are the most "hard core gamers", the industry has also attracted the attention of the U.S. Army. The Army takes video games so seriously that they have developed their own video game, set up their own video game studio in North Carolina, and have several professional video game teams competing today in tournaments across the globe. This involvement in video games is extensive and few understand the complexity of how the military manages its presence within the industry. It's no longer just about recruitment, but a permanent foothold in the minds of children for generations to come. Over the last decade, the military's involvement within the video games has shifted to the private industry. From games featuring terrorist, communist, drug dealing guerrillas destabilizing Mexico and launching nuclear weapons into the United States, to vicious, oil hungry dictators seizing control of Venezuela, to hard line Russian extremists selling nuclear warheads to Islamic fundamentalists, the propaganda is never ending. This study will look to apply Herman and Chomsky's theory of Manufacturing Consent to the video game industry- in particular to military themed video games. The story lines, development, and sales figures of the most popular selling military games in the last decade will be examined to see to what extent, if any, Herman and Chomsky's theory applies to this form of mass media.

SPEAKING TOY TO POWER: HONG KONG PROTEST PLAYTHINGS
Rémi Leclerc, PolyPlayLab, Hong Kong SAR, China

This presentation reviews playthings created and used during Hong Kong's (HK) 2019 Anti-Extradition Law Amendment Bill Movement (Anti-ELAB) protests. The movement was initially a single-issue protest against a bill to amend the Fugitive Offenders Ordinance, introduced in early 2019 by the Hong Kong Special Administrative Region Government. As this was largely perceived by Hongkongers as a ploy to facilitate suppression of voices critical of the central authority in Beijing, the protests quickly turned into a broader political movement demanding democratic reform. The movement generated some of the most widely attended political demonstrations ever recorded. The government eventually axed the reform in October 2019. The movement, set within HK's creative protest traditions, was characterised by an unprecedented output of vernacular artistic and design creativity, including slogans taking advantage of the Cantonese language's poetic heritage, visuals, cartoons, memes, music, videos, objects, playthings, urban installations—a political merchandising participating within the protest's 'yellow' circular economy to promote solidarity (continuing the use of the yellow colour adopted by the 2014 pro-democracy 'Umbrella Movement' protestors). This playful resistance nurtured a cultural form of resilience to a perceived encroachment on HK's way of life and contradiction to the 1984 Sino-British Joint Declaration that stated HK would remain unchanged for 50 years after 1997, when the UK retroceded HK to China. The presentation discusses 1) thematic analysis of the playthings and their participation in a hybrid communication system involving print and digital media, merchandise, and environments; 2) the often-anonymous, real-time immediacy characterising their production and consumption within HK's position in the global toy supply chain and the movement's 'yellow economy'; 3) the psychosocial value of the toys to protesters, displayed in public as badges and emblems, or as collectables in domestic altars promoting cultural resilience; and 4) the benchmarking of such value within Baudrillard's logic of the consumer object (usage, exchange, symbolic, sign) and Sutton Smith's identification of toys as culture.

TOYING WITH TRADITION:
DESIGNING AT THE INTERSECTION OF TOYS AND TORAH
FOR THE MODERN JEWISH CHILDHOOD

Organizer: Suzanne Seriff, University of Texas, United States

In one generation, Jewish consumers--from the most Orthodox to the most non-observant--have seen an explosion of toys specifically designed for and about religious occasions--shabbat (the Jewish sabbath), prayer, life cycle rituals, and Jewish holidays. Available for sale at Jewish-themed craft shops, Etsy sites, or ritual Judaica stores, these toys and ritual objects are each marketed for a distinct—and different—sub-set of modern Jewish consumers.

What is interesting about these toys and ritual objects—and the distinct Jewish consumer groups for whom they are marketed—is that they represent competing values about Jewish identity, ritual, sacred belief, and religious practice (and competing values about gender roles, child-rearing practices, work, marriage, etc.) that would never be tolerated, much less "played with," in each other's universe.

This panel brings together an Israeli industrial toy designer, a Judaica scholar, an artist and owner of a handcrafted Judaica shop, and an anthropologist to explore three distinct sets of Jewish-themed toys and toy-themed ritual objects and the wider religious, social and cultural messages they convey. The first panelist explores "Tefillin Barbie" which is individually crafted by a self-described "post-denominational, observant egalitarian Jewish ritual Torah scribe" (an occupation conventionally reserved for men). In a world where the wearing of ritual prayer garments such as the tallis (prayer shawl) and tefillin (phylacteries) for morning prayer has also been reserved until recently for men, this "Computer Engineer Tefillin Barbie" reflects an egalitarian revolution in Jewish ritual practice and tradition for observant but non-Orthodox Jewish girls and women. This somewhat tongue in cheek, but hard earned modern teffilin-wearing girl would never be depicted in the miniature boxed doll sets designed by our second panelist, an Israeli industrial toy company that markets toys for the ultra-orthodox "Haredi" Jewish communities in Israel and the United States. In these toys, girl dolls are reserved for boxed sets such as "Shabbat Candle Lighting" and boy dolls are included in boxed sets labeled "Morning Minyan" or "Boy's Bar Mitzvah." The last two panelists will explore the meanings for modern, largely assimilated, Jewish families of toy-themed ritual objects decorated with secular mass-produced toys and games such as Smurfs and monopoly boards.

After the presentations, Dr. Seriff, will facilitate discussion on the changing values, identities and customs of the distinct consumer groups reflected in the toy's or ritual objects' form and use.

TEFILLIN BARBIE
Suzanne Seriff, University of Texas at Austin, Austin, Texas, USA

This paper offers a theoretical analysis of the ritual context and rhetorical meanings of a unique and highly symbolic hand-crafted collector's toy known as "Tefillin Barbie" which is exclusively marketed and sold online for $60.00-over $100.00. The dolls are individually marketed by Jen Taylor Friedman, a self-described "post-denominational, observant egalitarian Jewish ritual Torah scribe" (The Torah Scribe is a highly regarded 1,000 year-old occupation, conventionally reserved for men, of hand-writing and constructing the handmade Torah scrolls used in synagogues around the world. Taylor-Friedman is the first woman to hold this role in the United States). In a world where the wearing of ritual prayer garments such as the tallis (prayer shawl) and tefillin (phylacteries containing scrolls of parchment inscribed with verses from the Torah) has been reserved until the last half-century for men, Taylor Friedman's "Computer Engineer-based Tefillin Barbie" represents an egalitarian revolution in Jewish ritual practice and tradition over the past ½ century in which Jewish girls now have a choice of participating in a morning prayer minyan and wearing the requisite tallis and tefillin appropriate for the sacred occasion. Taylor-Friedman's "Tefillin Barbie" comes with an exquisitely hand-crafted cloth prayer shawl and tiny black phylactery box, appropriately wrapped and tied on the doll's forehead and arm.The standard phone headset accessory which comes with Mattel's mass produced "computer engineer Barbie" is removed in this modified version because, as Taylor Friedman writes on her Etsy blog, "who wears a phone headset while they're davening (praying), for heaven's sake?" Taylor-Friedman's Tefillin Barbie are popular among a small-subset of modern Jewish women and Bat Mitzvah-aged girls who themselves participate in morning prayer and appreciate the egalitarian shift in Jewish ritual practice.

FROM FISHER PRICE TO RITE LITE: TOYS AND THE AMERICAN HANUKKAH MENORAH
Shifra Epstein, Independent Scholar, Ann Arbor, Michigan, USA

Dr. Epstein will provide an historical and ethnographic analysis of the recent consumer trend in hand-crafted Hanukkah Menorahs and other ritual objects for a child-centered audience. Focusing especially on the over 200 Hanukkah Menorahs from Eclectica Judaica that are designed with themes from the repertoire of American Children's toys and cartoons, Epstein will explore the potential role of these whimsical, playful and sparkly ritual objects in helping to keep modern, highly assimiliated Jewish families grounded, present and connected in a world of mass-toy consumption.

CULTURAL AMBIVALENCE IN HAREDI INDUSTRIAL TOY DESIGN
Shlomi Eige, Bezalel Academy of Arts and Design, Jerusalem, Israel

Shlomi Eiger is a practicing toy designer and researcher of childhood through toys and children's material culture, based in Tel Aviv, Israel. His research on the material culture of children focuses on the role of toys and the processes for creating them in cultural construction and the ways toys reflect culture and society. Suzy Serrif presents Eiger's work on his behalf for this panel. The presentation explores the ambivalent role of toys as agents of communities' values, especially within the relatively closed world of the ultra orthodox Jewish communities in Israel, New York City and around the world.

TOYS, HEROES, AND MENORAHS
Rachel Brooke Goren, Eclectic Judaica, Amherst, Massachusetts, USA

As a queer Jewish woman, mother, and artist with a commitment to social justice, laughter and joy, I design and create whimsical, playful and repurposed Judaica and Judaica craft kits using recycled toys, action figures, game pieces and other childhood toy ephemera. The finished kits and Jewish holiday pieces are sold internationally through my brand Eclectic Judaica. Quite different from traditional menorahs, Passover seder plates, and other ritual objects, my work serves to create a personal connection with the users, and makes Judaism accessible to a wide range of people--especially including kids of all ages who are attracted to the toys, princess dolls, and action figures of their youth. I will be talking about my journey, the meaning behind the creations, creativity and Jewish identity, my commitment to social justice and Tikkun Olam (Heal the

World), the importance of identity and feeling seen within Jewish communities, and why rhinestones and sparkle make pretty much everything better.

THE JEWISH PLAY PROJECT. DOCUMENTING 200 YEARS OF THE CONTRIBUTIONS OF JEWISH DESIGNERS, ENTREPRENEURS, AND INVENTORS TO TOYS, GAMES, PINBALL, AND VIDEO GAMES

Stephen Jacobs
Rochester Institute of Technology & The Strong National Museum of Play, Rochester, NY, USA

This research began in 2014 in support of the Shalom Street Children's Museum exhibit, *Across the Board: From Dreidel to Xbox,* the first museum exhibit on Play in Jewish Religious and Secular life. At the time, the author was aware of the most commonly cited Jewish-founded toy companies, such as Lionel Trains, Hasbro, Mattel, and the Madame Alexander Doll company. Upon finding that roughly one-third of the Toy Industry Hall of Fame Inductees were born into Jewish families, he began researching in earnest and created the Jewish Play Project website in 2015 to share the results of his research.

The website covers a wide range of creators, from US playing card mogul and four-color card press inventor Lewis I. Cohen, the great Nuremberg toy and game companies Gebruder Bing, J.W. Spear & Söhne and others, well-known US toy and game companies, the pinball dynasties of Gottlieb, Stern and Genbergs and US and Japanese Video game inventors and companies such as Ralph Baer, Taito, and Sega through recent leaders like Peabody-Award winner Elan Lee, creator of the Alternate Reality Game genre of video games and leader of the Exploding Kittens company, whose eponymous first card game held the record for the highest-funded Kickstarter project for years. The website was exhibited at the peer-reviewed Digital Humanities Workshop at the Jewish Studies Association's annual conference in 2016. The Strong National Museum of Play published two blog posts by the author on the subject of this research in December of 2022 and is scheduling a virtual exhibit in conjunction with Google Arts and Culture in late summer of 2023.

This paper will cover this history in Europe and the US, the societal factors that led Jewish creatives to enter the industry, the direct impact of the rise of Nazism on the German industry, and how it helped fuel the growth of the American Industry and the lack of institutionalized antisemitism there. It will also showcase the stories of a variety of Jewish leaders in the space.

WORKSHOPS

WORKSHOP: DESIGNING FOR KIDS: A CHILDREN'S RIGHTS PERSPECTIVE

Krystina Castella, ArtCenter College of Design, Pasadena, CA, USA; Design Entrepreneur Network, Glendale, CA, USA; & Designing for Children's Rights, Copenhagen, Denmark
Daniel Spikol[*], Center for Digital Education at the University of Copenhagen, Denmark

Designing for kids: A Children's Rights Perspective is a hybrid learning course that broadens perspectives about designing for kids and teens. The course brings best practices to research and the workplace to improve products, services, experiences, and environments for healthy child development. The course was developed by college professors and industrial designer Krystina Castella and technologist Daniel Spikol. In this presentation Krystina and Daniel will share the research and learnings while developing the course over the past 3 years. This included dozens of interviews with industry experts, case study examples and studying diverse questions, approaches, opportunities, and challenges encountered in research and product development in multiple industries around the globe.

In this workshop we will:
- review the most important topics every play researcher and product developer should know about kids and childhood today
- share the Designing for Children's Rights Guide and offers suggestions for use in practice.
- highlight collaborations between experts in child development, design, play, children's rights.
- share best practices for inclusive design and collaborating with vulnerable populations to bring to research and industry
- share interactive exercises, toolkits and resources that bridge play, design, and children's rights.

The workshop is designed to strengthen knowledge, understanding, and practice about creating products and services for kids. It supports professional development and organizational learning for professors, design researchers, and practitioners working for NGOs, private companies, and the public sector. For more information see http://designingforchildrensrights.org

PUBLISHING TOY RESEARCH: MEET THE EDITORS/AUTHORS DISCUSSION ROUNDTABLE
Presenters:
Jeremy Saucier, *American Journal of Play*
Bhoomi Thakore, *Humanity & Society*
Luisa Magalhães, Co-editor *Toys and Communication* (2018). Palgrave Macmillan.

This informal roundtable discussion provides the opportunity to meet with editors to learn more about publishing opportunities and considerations. Jeremy Saucier is editor for *The American Journal of Play*, published by The Strong. The *Journal* is published 3 times/year - for more information see: https://www.museumofplay.org/journalofplay/

Bhoomi Takore is an associate editor *Humanity & Society*. *Humanity & Society* is the official journal for the Association for Humanist Sociology and is published by Sage. For more information see:
https://journals.sagepub.com/description/HAS

 Professor Magalhães will share insights from her experiences submitting proposals to book publishers and discuss her work with her co-editor and contributors for the 2018 edited book based on the 8th ITRA World Conference in Braga, Portugal.

**WORKSHOP: WEARING ME OUT:
IS THIS TOY MINE OR ME? 'ID-TOY' JEWEL-MAKING WORKSHOP**

Presenter: *Rémi Leclerc, PolyPlayLab, Hong Kong SAR, China*
Assistant: *Ellen Kneeskern, University of Rochester*

This toy design workshop aims to generate insight into creative practices, approaches, and theorisations on an issue that matters most to play: identity. "I toy, therefore I am:" spending so much of our existence online, we increasingly profile our identities, tactically playing at creating stories about who we are and project an image of our 'selves' to engage with community, thus conforming to or subverting our relation to power. In line with the conference theme, "Toys Matter: The Power of Playthings", this workshop will invite participants to productively see how 'designed play' – here, wearable playthings – empowers us to toy with social agency. Mapping personal factors to define toy criteria, participants will critically assess profilicity in contemporary culture through toy design. Favouring tangible playthings over digital games, and the aimlessness of play for play's sake, the workshop will entice participants to explore means to undermine consumer fashion dynamics and Quantifications of the Self structuring our on-and-offline quotidian.

Participants will identify and construct a persona for which they will design a playful ID-toy jewel embodying the articulation of design play attributes informed by the following criteria:
- Context: Relevance of ID-Jewel to the persona's context
- Identity: Arrangement of visuals metaphorically narrating one's 'self'
- Materiality: Originality and economy of means in the selection and assembly of found materials
- Synaesthetics: Appreciation of transensorial experiences and their material expressions
- Object Logic: Political economy of the sign; relevance to usage, exchange, symbolic, or sign value
- Communication: Clarity, evidence of on-and-offline communication, humour, play pattern/depth/value

An exploration in design for play, this workshop gets participants to play with visual literacy (design elements and principles) and forms of play and playing. At the end of the workshop participants will have designed and produced a wearable ID-Jewel toy. Toying with the playfulness inherent to design as a contemporary media, the criteria listed above will serve as rubrics for discussion. Coinciding with ITRA's 30th anniversary, which Brian Sutton-Smith co-founded, discussions will be informed by his work explicating how toys as culture shape our identity, and Jean Baudrillard's deconstruction of the logic of consumer object value, to explore the power of the links connecting design, play, and identity.

WORKSHOP: BEHIND THE SCENES WITH THE STRONG'S COLLECTIONS
Presenter: *Christopher Bensch, The Strong National Museum of Play, Rochester, NY, USA*

The Strong's exhibits only include a small portion of its massive collection of artifacts. Come venture behind the scenes to see "inside the vault" and discover some of the rarely seen wonders of play among the museum's holdings.

PAPERS

Wednesday August 9, 2023

Session 2: **Digital and Smart Toys**

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SMART TOYS
Mark Allen, SFRL, Woking, United Kingdom

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This paper reviews the benefits, limitations and chronology of Smart Toys since the early 1990s. Smart Toys may be defined as digitally-enhanced toys which leverage computing power, are able to learn, behave and change its actions based on external stimuli. This includes toys which contain sophisticated sensors and electronic circuitry to enhance play value and may be powered by cloud computing, onboard artificial/expert intelligence, or more recently, the interconnectivity of the Internet of Things (IoT) to enhance the capabilities of traditional toys.

While Smart Toys are marketed for both adults and children, of primary interest here is the importance of play and the role of Smart Toys for a growing child. Play is defined as a pleasurable, voluntary activity involving much repetition and variation as the child explores possible activities, actions and results. Toys have been shown to aid a child's cognitive, physical, social and emotional development. While all kinds of play and toys have their benefits, Smart Toys may arguably have particular relevance in today's industrialised world as children are exposed to technology at a young age. Some unique benefits may include; acquisition of technological skills which are necessary in a rapidly changing world, development of problem-solving and pattern recognition skills, tracking ability levels to improve fine and gross motor skills using 3D objects, encouraged creative thinking and fantasy engagement during gameplay, learning of independence and adventurousness during solitary play, etc.

The software and hardware technology incorporated in Smart Toys may also be their greatest limitation. Software may incorporate poor gameplay design or understanding of the end-user; although, this may be mitigated by upgraded code releases. Hardware design on the other hand may often remain fixed; deteriorating power consumption, type and number of inputs/outputs, software/data memory allocation etc. Of greatest concern however, particularly with internet connectivity-based systems, are hackability or data breaches on insecure networks. The European Union (EU) is currently investigating whether such toys are in violation of data protection legislation.

Smart Toys have come a long way, from Furbys, which appeared to learn language, subsequent iterations harnessing the computational power of mobile phones, to current devices featuring improved machine intelligence and interconnectivity. Smart Toys may represent the future of play and learning for children, of all abilities, especially in the area of educational toys, but also pose potential risks to children if not designed responsibly.

SMART TOY FRIENDS OF THE FUTURE: DESIGNS OF MOTION AND EMOTION
Katriina Heljakka, University of Turku, Pori, Finland

This presentation highlights a two-part study on connected toys, understood as a sub-branch of smart toys and conceptualized as the Internet of Toys, or IoToys. Whereas the Internet of Things (IoT) means physical objects that are embedded with electronics, sensors, software and connectivity that support the exchange of data, Internet of Toys (IoToys) represent playthings with sensory interfaces, such as robotic toys that allow players to access media content (Mascheroni & Holloway 2019).

The IoToys is a developing area of technologically-enhanced toys with multidimensional affordances, making use of sensors, light, sound, and movement. Previous research of IoToys demonstrates how current IoToys offer versatile edutainment opportunities through their interaction design—more precisely their physical, functional, and fictional affordances.

However, what remains scarcely researched, are the affective and emotional dimensions of design and use of IoToys. Still, some attempts of recommendations for stakeholders involved in the design of play with near-future connected toys have been made, such as allowing multidimensional movement in play, and considering socio-emotional learning, enhancement of emotional skills and promoting social sustainability (Heljakka 2022).

Leaning on previous findings on IoToys' design (e.g., Heljakka & Ihamäki 2019), this study investigates lines of development of current IoToys—currently available connected toys—with a particular focus on two design aspects embedded in their affordances—motion and emotion.

Further, the study presents the possibility of speculative cinematic fiction to portray affordances of future IoToys for motion and emotion through analyses of the popular animation film Ron's Gone Wrong (2021) featuring a fictitious internet connected toy, a B-Bot named "Ron".

By first, conducting an analysis of the key affordances of IoToys and second by analysing the dimensions of "Ron" through the dialogue of the film, the researcher illuminates how designs of affordances that cater for both generation of motion and experiences of emotion in play manifest in the existing and envisioned playthings.

Through investigations of "real" IoToys of present times and "Ron" as a portrayal of the possible IoToys of tomorrow, the study continues the work of the author (Heljakka 2022) by positioning speculative toy fiction as a form of design fiction that allows comparisons to be made between currently available and future toys and in this way, what is desirable in smart toy friends of the future.

BUILDING A BETTER & CHEAPER ROBOT

John W. Somers, Matthew Bilo*, Ryan Rakaska*, Lucas Kasper*, Julio Alfonso*, & Armen Torosian* University of Indianapolis, Indianapolis, IN, USA

Designing a robot for students from kindergarten through fifth grade presents the opportunity to introduce young learners to the exciting world of robotics and technology. Too often, K-5 students are provided with a robot to learn how to program it to perform tasks. This scenario is exciting to students, but they need to occupy a position as an engineer or "maker" where they design, build, and customize their robots. This experience would enable them to develop an engineering identity, greater agency, and STEM ways of thinking.

For students to design and build a robot, the author secured a grant to work with a team of student engineering majors to develop a modularized robot that ranges from a simple build to one with more complexity. We previewed the project and discussed equity-based engineering in the classroom. Ideas presented included: An inclusive environment that fosters broad participation of students; active engagement that promotes a sense of accomplishment; a design that enables different solutions and diverse approaches; a way to personalize the robot to connect with family, community, and cultures; and, a design that uses low-cost, readily available materials.

The project's goal is to create a "building block" system where different components or modules can be added or removed to adjust the complexity and functionality of the robot. Other design guidelines included: 1) Keep it straightforward and avoid overly complicated features and instructions. 2) Make it interactive so students can explore and experiment with their robot. Incorporate interactive elements such as sensors or buttons that allow students to interact with the robot and see how it responds. 3) Focus on the basics -- how robots move and sense their surroundings. Incorporate simple mechanisms such as motors or wheels that allow the robot to move or avoid obstacles. 4) Incorporate age-appropriate learning opportunities. Include educational elements such as basic programming concepts or simple math or science lessons. Include the capacity to 3D print components such as wheels. 5) Make it durable. Kids can be rough on their toys, and the robot would need to stand up to frequent use.

This project is in progress and will be completed this May. The robot will be tested at a summer STEM camp. At the Toy conference, the author will discuss the team design process, and testing results from the camp and demonstrate the modularized robot.

Session 3: **Toying with Gender and Inclusion**

SEX, GENDER AND INTERSECTIONAL EQUITY IN TOY DESIGN

Isabel Prochner, Lindy Truitt*, Joshua Price, Ava Lahijani* & Aidan Headrick*
Syracuse University, Syracuse, NY, USA

This presentation draws on gender and child development theory to propose how toy design can engage with sex, gender, and intersectional equity. Many toys are gendered and normative, reinforcing interests and forms of play appropriate for girls and boys. This teaches children gender norms from an early age and limits the activities they can enjoy. This presentation problematizes the proliferation of rigidly and highly gendered toys and toy communications. It proposes that designers develop gender neutral messaging surrounding toys and develop more gender-neutral and gender-plural toys. It also explores how designers can represent more expansive visions of femininities and masculinities, and transgender, gender diverse, and intersectional identities in their work on design for play. The presentation draws on critical analysis of popular toys including LEGO and Barbie in addition to less well-known examples like Mattel's Creatable World doll collection.

This presentation represents work-in-progress for a book project that will be published as part of the Routledge collection, Design Research for Change. The research team will seek discussion and feedback from the ITRA community during the session.

QUEER VIDEO GAMES AND COMMUNITY

Nilson Carroll, Visual Studies Workshop, Rochester, NY USA

nilson carroll, one of the two founders of the annual mutual aid project the Queer Games Bundle, will discuss organizing in the small and experimental queer video games online communities. They will talk about their grassroots organizing and the importance of supporting game makers of all levels, including access and education to game making tools and platforms to share games with others.

POWERFUL TOYS FOR THE PLAYFUL *OTHER:* ADVERTISING FOR INCLUSION

Luisa Magalhães, Research Centre for Philosophical and Humanistic Studies
Catholic University of Portugal, Braga, Portugal

The theme of this presentation is the development of the concept of interactive toy as inclusive element of play for children with sight and hearing disabilities. Such children sometimes endure painful processes of othering, by other children and also by adults. This is due to the difficulties in accepting otherness and difference without diminishing the value and emotional scope of the play contexts, as well as misinterpreting communicative needs as lack of skills or of coordination.

The analysis of some advertising films will register the discourse related to such children by some well-known brands of toy producers, to the challenge represented by disabled toy users. Narratives of play for learning and for developing emotional skills will be presented with the purpose of equalizing the right to play to the right to learn and developing skills.

Inclusive toys are designed to foster play and fun, contributing to the construction of active learning. They promote the necessary training and skillful engagement of both, children and educators, assuming that there is a time and there is a space to enjoy ludic challenges, as well as generating knowledge and developing abilities to cope with physical conditions.

The access to advertising discourse that promotes Braille language or hearing-aids will demonstrate how the process of becoming other translates into adult engagement in play activities. Moreover, it will deconstruct the metaphors in use as mental schemes for assimilating the differences between children. In so doing, these differences shall become permanent opportunities to keep on playing, learning and developing intellectual skills that will enhance fun regardless of disabilities and physical constraints.

Some advertising short analysis will be presented, with a proposal that will provide evidence for the value of interactive and inclusive toys in fostering inclusion through play – even in disbalanced contexts.

INCLUSIVE PLAY FRAMEWORK FOR CHILDREN AND PARENTS:
A TOOL TO PROMOTE AWARENESS ABOUT GENDER-NEUTRAL PLAY THROUGH TOYS

Alakesh Dhibar & Eduardo Gonçalves[*] UNIDCOM/IADE - Unidade de Investigação em Design e Comunicação, Lisbon, Lisbon, Portugal

This paper outlines the process of developing a tool to promote parental awareness about gender neutral play and equal opportunity during the formative years of children. The tool is an important element of a larger research plan to investigate the effect of several gendered toy trends on children's early play experiences in relation to possible gender differences in abilities. This includes the potential interactions with toys and advertisement techniques towards variant social roles. Being part of the practical implementation of the Inclusive Play Framework from Doctorate in Design, "Social Awareness and Cultural Significance in Designing (Non) Gendered Toys", the tool addresses the change in awareness of parents towards different ways of children's expression in play. The study focuses on socio-cultural variables within Portugal which initiate the vexing problem of gender discrimination.

Parents' roles are critical as the primary socialization agents of their children. The interaction between parents and children is the key to change and improve knowledge about gender-neutral play and the muti-layered affordances behind the objects of play such as toys. For instance, gender-neutral awareness fostered through play with toys may inspire children to consider what and who they can and should be. The Inclusive Play Framework focuses on the Design for Behaviour Change approach and Inclusive Design as the Change Attributes through a series of semi structured card games as part of novel workshop activities designed to promote the value of toys for changing behaviour. The workshop activities are designed to define, measure, and compare the 'state' of gender-neutral awareness, and relate it to adult-child play interactions in the form of provocation and open discussion. The ongoing research focuses on three different user bases, Children-Parents, Children-Educators, and Children-Designers; and this paper documents the research findings of the experimentation, development and testing of the tool for Children-Parents as the initiation of the evaluation phase.

As shown in Figure 1, the tool consists of three stages - Identify, Diversify and Inclusify. Within each step derived from the Inclusive Play Framework progressively enable recognition of elements in gender discrimination; motivation towards diverse perspectives; and transmission of knowledge through reconfiguring beliefs and practices. Subsequently, the proposed tool connects each step to real-life scenarios extracted from design ethnography within Portugal and secondary study, including UNICEF guidelines from the initiative "for every child". Finally, the presentation shares insights from the investigation with the tool and presents collected data from inquiry, interviews, and video recordings.
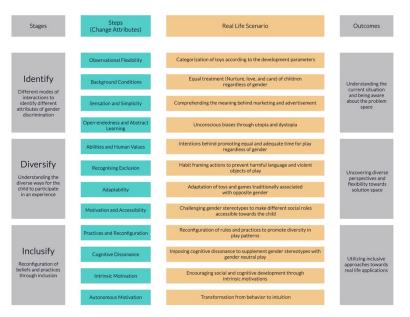

Figure 1: Inclusive Play Framework for Children and Parents: The Tool

HANDMADE DOLLS TO PROMOTE CHILDREN WITH DISABILITY INCLUSIVENESS:
A LINGUISTIC PERSPECTIVE

Jose Maria de Aguiar Sobrino Junior, Danielle Barbosa Lins de Almeida*, Universidade Federal da Paraíba, João Pessoa, Paraíba, Brazil*
Vania Soares Barbosa, Universidade Federal do Piauí, Teresina, Piauí, Brazil

Both children's narratives and toys constitute multimodal texts through which content, information and ideologies circulate. In this respect, multimodality has been chosen as a way of perception of differences among several semiotic modes and resources, and their combination in the current process of meaning making. Hence, it is noticed that toys have an important social function. The main objective in this work is to analyze how children deal with disability, difference and inclusion as they interact with inclusive handmade dolls. With the intention of establishing a detail of this work, we elected the following specific objectives: to describe the multimodal configurations of inclusive handmade dolls, under the theoretical framework of Toy Literacy (Almeida, 2020; 2021) and its three-dimensionality (Kress; Van Leeuwen, 2006 [1996]), and to identify the choices that children make when producing their narratives, and when referring to disability, difference and inclusion, according to Systemic-Functional Linguistics perspective (Halliday; Matthiessen, 2014; Martin; White, 2005). It is worth pointing out that this work presents itself in qualitative and exploratory character, being the corpus formed by five inclusive handmade dolls and twenty text fragments, highlighting how children create representational perspectives and establish interactive relationships (Kress; Van Leeuwen, 2006[1996]), which are the result of their sensory, affective and communicative experiences.

IMAGE AND LIKENESS: DOLLS PICTURING POWER
Freyja Hartzell, Bard Graduate Center, New York City, NY, USA

In a moment of wild despair, Sara Crewe, the ten-year-old heroine of Frances Hodgson Burnett's 1905 *A Little Princess*, launches an attack on her doll, Emily. Knocking Emily to the floor, Sara cries: "You are nothing but a DOLL! Nothing but a doll—doll—doll! You care for nothing. You are stuffed with sawdust. You never had a heart. Nothing could make you feel. You are a DOLL!" This is the only act of violence perpetrated by the otherwise remarkably compassionate, well-mannered Sara in the entire novel. But lonely Sara–recently orphaned and cruelly subjugated by the teachers, pupils, and even the servants at the London boarding school where she was once "show pupil"–rages at (*and allows herself to rage at*) Emily *not* because she is "nothing but a doll," but because she is not and will never be a human girl, *like Sara herself.*

This paper grapples with the doll's perpetual approach to yet eternal distance from humanness. It considers dolls as inherently ironic objects: inanimate by definition, yet intended through their design to convey the affect of living things, acting as children's compulsory companions. Emily's mistress was literally helpless, with no parents, no protectors, no means, and precious little human kindness. But all this notwithstanding, Sara was still not as utterly powerless as Emily. I argue that dolls like Emily–and especially images of dolls "in play," be they visual or verbal–reveal complex, significant, yet frequently overlooked power dynamics among ourselves and our others, our personas and our things.

The biblical tradition of likeness situates humankind as the "image and likeness" of an omnipotent God (Genesis 1:26). However, God's index on earth is given "dominion" over all of earth's "creeping things." This power triangle–God → human → non-human–incorporates an inextricable dynamic of dominance within the Judeo-Christian concept of humanness. But what happens when we expand this category of dominated "creepers" to include inanimate things that, by virtue of their design, a human might *imagine* capable of creeping? What happens when the divinely bestowed, humans-only status of "image and likeness" is extended to objects that humans make in the image and likeness of *themselves*? Doll design is concrete imagining, and play is its infinite, ongoing performance. So if designing a doll is taking a grown-up human liberty with the divine image, then the child's engagement with her doll is nothing less than a power play.

"NOT A TOY:" THE KODAK BROWNIE CAMERA
AND THE INCULCATION OF A CLASSIFICATORY GAZE THROUGH PLAY
Jesse Dritz, Boston University, Boston, MA, USA

When Kodak released its popular Brownie box snapshot camera in 1900, the company adopted a familiar cultural figure to market their new product. The "Brownies" were a troupe of cartoon elves whose costumes and poses reproduced existing racial and ethnic stereotypes. First conceived for the American market by entrepreneur Palmer Cox in 1883, the Brownies appeared in children's stories, songs, and even a touring stage production. Moreover, they were also used in a wide range of advertisements before Kodak adopted them as the mascot for their new camera. My paper argues that the already-ubiquitous "Brownie" cartoons carried an existing lexicon of meanings for Kodak's customers which informed users' experiences with the camera; advertisements, trade cards, paper dolls, and product packaging using the Brownie figure informed the ways that consumers experienced and used their new mass-market cameras.

Although advertisements often emphasized that the Brownie camera was "Not a Toy," the presence of the Brownies in Kodak's advertising scheme meant that children would have recognized the camera as their purview. In this way, Kodak Brownie advertisements would have appealed to both children and adults. For adults, connotations of childhood may have suggested that the Brownie camera could help them approach the world with a sense of childlike wonder. For children, the notion that the Brownie transcended the status of toy might have alerted them to the heightened stakes of the camera's use. I argue that the racialized appearance of Brownie cartoons, and the ways that advertisements featuring the Brownies often suggested modes of interaction which separated the cartoons into racial and ethnic categories primed amateur photographers to take part in a specific manner of classificatory looking when they picked up their Kodak Brownies. By looking, categorizing, and framing their subjects through the lens of a Brownie camera, Kodak's customers inadvertently contributed to a project of social classification. The resulting photographs were thus the culmination of a longer process in which advertisers, amateur photographers, and the Kodak company together made abstract racial categories into a more tangible reality.

Session 5: **The Test of Time: How Toys Matter**

MATTERING AT A MUSEUM:
HOW TOYS FUNCTION AT THE STRONG NATIONAL MUSEUM OF PLAY
Christopher Bensch, The Strong National Museum of Play, Rochester, NY, USA

Museums are open to all, but the thought and intentionality behind even the most basic exhibit aren't immediately visible. This presentation offers an insider's view of the biggest, most comprehensive museum of toys, dolls, games, and video games.

For more than two decades, The Strong Museum has focused on the topic of play, specializing in playthings used in North America over the past two centuries. With almost 530,000 objects, books, archival materials, and other resources, the museum seeks to represent change and continuity in toys. Adding between 5,000 and 10,000 items a year, The Strong's collection offers a unique opportunity to document the evolving dimensions of play and evoke the tenor of different eras' playthings.

In this presentation, The Strong's vice president for collections demonstrates how the insights acquired over 40 years in the museum field have been applied to strategically expanding the museum's holdings and enhancing the collection's scope and reach. Preserving toys and the documentation behind them is core to the museum's purpose. That responsibility leads the museum's curators to strive to make thoughtful choices about the acquisitions they select.

But preservation alone doesn't make toys meaningful. Interpreting the significance of toys in popular culture, political history, and individual lives is of equal importance to the museum. Through initiatives such as the National Toy Hall of Fame or concentrated collecting for exhibit projects, The Strong hones its holdings and highlights what it judges to best reflect the traits, tastes, and trends that influence toys and, in turn, are shaped by the toys.

And the experience toys provide matters too. That's why The Strong seeks to provide its guests with various forms of interactivity throughout its exhibits. A museum about play that only exhibited its artifacts sealed behind glass wouldn't attract or engage the wide audience that The Strong seeks to serve. Using techniques that can be as basic as hands-on activities directly with the toys themselves to sophisticated electronic interactives that amplify or extend elements of play, the museum looks for ways that power personal meaning-making and immersive experiences.
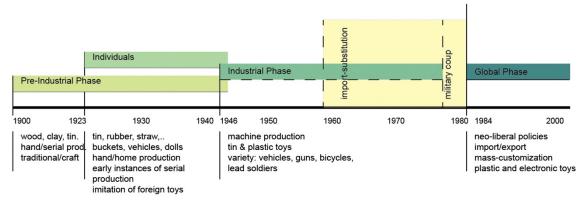
The result is a museum unlike any other. The Strong is a history museum that incorporates the best interactive elements of science museums and the hands-on nature of children's museums into a special space concentrating on a topic—play—that is integral to everyone's life.

TOYS IN INVENTORY: DOCUMENTING TOYS IN TURKEY IN THREE PHASES

Avşar Gürpınar, Loughborough University, Loughborough, Leicestershire, United Kingdom; Nur Horsanalı*, Independent Researcher, Eindhoven, Netherlands; Liana Kuyumcuyan*, Kadir Has University, Istanbul, Turkey

Toys contain unique insights into the peculiarities of the world and beings. More than being objects of play, they reflect society's relations to cultural and technological shifts on different layers. Toys show how people make, use and connect to objects. They are the physical manifestations of values, knowledge and culture in the forms and typologies of toys, their production methods and the industrial organisation of the sector, and the exploitation of cultural references in new product development.

Toys were an indispensable part of all kinds of production activities in Turkey for centuries, roughly separated into three phases: Pre-industrial, industrial, and post-industrial. Each phase has its unique emergence and development processes. They also show significant characteristics of different geographical properties and modes of design and production, which helps to understand the current qualities of contemporary toy production.

The journey of serial toy production in Turkey begins in Istanbul with the pre-industrial phase in the 17th-century Ottoman Empire. Eyüp toy market was the first location of systematic toy production in İstanbul and a particular example of craftsmanship, recycling and centralised commercialisation. Eyüp was in a critical location in the city to acquire raw and discarded materials, where the toymakers were getting their material from neighbouring districts.

A transition period in the early decades of the 20th century with the development of new centres of socialisation and types of commerce saw the development of establishments of individual entrepreneurs. This paved the way for the industrial phase, roughly between the 1960s and 1990s.

Starting with the 20th century, the spatialisation and specification of design processes, means of production and commerce have been affected by global dynamics. The peculiarities in the İstanbul toy sector today consequently affect the type of companies and how they operate, the type of toys they produce, and their relation to globalisation. Understanding the structure requires an evaluation of the spatialisation of design and production modes and an analysis of operation methods. This paper looks into the history of toys in Turkey in three phases through various research: Historical surveys, collections and toy museums, and contemporary field research.

KAREN HILL TRIBE'S PLAY CULTURE AND PLAY ARTIFACTS: SURVIVING THROUGH THE CHALLENGE OF THE MODERN TIME

Apirom Kongkanan, KMUTT (School of Architecture and Design), Bangkok, Bangkok, Thailand

Once a marginalized ethnic group, the Karen are now considered Thai Citizens and integrated into Thai society though state integration measures. The state has stressed the need for migrants to integrate into Thai society by respecting Thai laws, becoming Thai citizens, learning Thai, and joining mainstream education. The challenge the Karen face is adapting to the enticing outside cultural influences while keeping their cultural identities alive. An important part of their cultural identity comes from play and the objects used in that play.

Toys can help bridge age and generational gaps, and help us understand our past. To the older generation Karen "Play is a way of living everyday life." It is ingrained with the surroundings it created, made with nearby natural materials and therefore their toys are temporal by nature. The little package of joy called "parent (mostly dad) made toy" and "toy from the nature" has embodied their ancestors' values, beliefs, and way of life. Play and play artifacts of the indigenous community are handed down while also adopting to the new play culture.

This study examines indigenous play and play artifacts through qualitative research methods. In addition, I document the archival and classification processes following identification of these artifacts. It is a first step toward understanding how to better preserve the Karen's play and play artifacts to help preserve their play cultural heritage

Preliminary findings from this ongoing study led to the classification of Karen play and play artifacts into the following categories:
- Song and rhyme.
- Parent's play invention.
- Play and play objects gathered and created during agriculture field work or forest hunts.
- Games like SABA that uses seed from SABA tree in the forest.

Initial in-depth interviews suggest that adults of Karen tribe enjoy recalling their long-gone childhood and parent made toys. For example, their stories literally light up the dark and terrifying forest in the surrounding area like magic. The dark forest believed dwelled by the forest deity and ghost seem suddenly friendly. That is the wonder of toys from the deep forest in the mountain top and the Karen of Ratchaburi Thailand. Although the way of life is changing for the Karen, there are indigenous play and play artifacts that should be kept for the future generations. Some of these are toys that we all can share and cherish despite the passage of decades or even centuries.

PICTURING TOY PLAY:
HISTORICAL ANALYSIS OF LUDIC PEDAGOGICAL PRACTICES AND CHILDREN'S RIGHTS

Ilda Maria Baldanza Nazareth Duarte*, Agenor Pereira da Costa, Rosalva Gomes de Araújo*, & Edith Maria Marques Magalhães*, UNIG, Universidade Iguaçu, Iguaçu University, Nova Iguaçu, Brazil, Ana Valéria de Figueiredo, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

This project is part of an interdisciplinary field of research with its central objectives to examine in legal texts for reference of playing as a fundamental right and to identify images that portray the history of childhood in this regard. We examine these images as texts within a dialogical frame with the legal texts. From these data we offer some possible interpretations to highlight connections between the the legal / legal aspects of childhood play with art and the subjective reading of the history and the ludic practices of games, toys and games.

The analytic frame of this study consists of legal texts, images and reports in the logbooks of resident students of the partner field schools of the CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, Coordination for the Improvement of Higher Education Personnel) and UNIG (Universidade Iguaçu, Iguaçu University) collaborative Pedagogical Residency Program. These are supplemented with with observations collected on/from the grounds of these schools in order to identify relationships between playing in contemporary times and analysis of the didactic-pedagogical practices implemented in the activities. The project will walk through analyzing legal documents that seek to guarantee playing as a right, that support this playing as an activity inherent to the initial phase of life, and that must last throughout development. We aim to combine legal documents with images (photographs, artistic canvases, films, among others) that portray aspects of playfulness in childhood and its evolution.

Session 6: **Expanding our Conceptual Tool Belt for Toy Research**

TOO MANY TOYS?! A THEORETICAL FRAMEWORK AND A METHODICAL RESEARCH APPROACH
Volker Mehringer, University, Augsburg, Germany

A commonly held belief by many adults is that high numbers of toys negatively impact children's play behavior. Many parents and educators claim that having too many toys affects children's creativity and variability of playing, their attention and persistence, and ultimately leads to lower quality play. Many also claim that large quantities of toys teach children a bad consumerist attitude among other negative effects. As convincing as these claims often seem to be, there are only a few studies that tackle this subject. Furthermore, these studies have some issues concerning their internal and external validity. The paper tries to address these issues. It presents a theoretical framework and a methodical approach for a systematic study of the relationship between the quantity and quality of toys and children's play.

Most claims about the negative effects of too many toys oversimplify the influence of the quantity of toys in a given context on a child's play behavior. Further, many important theoretical aspects are often overlooked or not adequately taken into consideration in the research design. To create a model to incorporate that complexity an ecological approach on play situations is chosen. The model is built for research purposes, but can also be used as a practical framework.

The methodical research approach relies on the videography of play situations. Videos can capture play behavior in an authentic way. They can be analyzed multiple times and they are open for quantitative and qualitative analysis. A common problem with videography is that children can easily be distracted by actively filming adults. Fixed cameras can help with that problem but tend to have serious blind spots especially while filming free playing children in field research. Play can rarely be constricted to one room, especially in a family home. The aim of the planned study is to capture authentic play behavior of preschool-children in their home environment. To achieve that we tested a set up for videography consisting of a static camera and an action camera. The child wore the action camera on a chest mount while playing, so we could get a constant view of what the child was playing with and the child could move with it from one room to another. Some test footages will be shown and the pros and cons of this videography set up will be discussed.

BROKEN TOYS AND WHAT THEY MEAN
Kathy Merlock Jackson, Virginia Wesleyan University, Virginia Beach, VA, USA

Toys break for many reasons. Children break toys to demonstrate anger, boredom, a desire for excitement, a need for control, or creativity. Loved toys, such as the shabby bunny in The Velveteen Rabbit, become damaged through play. Sometimes toys sustain unintentional breakage in an accident or natural disaster. The response to broken toys is equally varied. Children may mourn their broken toys or not notice nor care. Adults may see children who break toys as being irresponsible, just rough-and-tumble kids, or young geniuses. And what becomes of broken toys? Sometimes children play with them in new ways, repurpose them, or, like Sid in Toy Story, sew toy body parts together to create something frightful. The Japanese have an elaborate system of toy hospitals to repair broken toys, and they show respect for disabled toys in memorial rituals where children pay tribute to the playthings that made them happy. Other cultures salvage parts from damaged playthings for recycling or just throw away broken toys. Robert Graves writes in Poetic Unreason, "No two toys are ever broken in the same way or with the same emotional results."

Because broken toys are inescapable in children's lives, it is not surprising that images of them also figure in popular narratives, reflecting a culture's hopes, fears, values, and expectations, and shaping a child's attitudes. Such stories include Hans Christian Andersen's "The Steadfast Tin Soldier," Margery Williams' The Velveteen Rabbit, Disney's Silly Symphony Broken Toys, and the Disney/Pixar's Toy Story franchise. In these representations, being broken makes toys more human, setting them on a quest to become whole, reminiscent of the hero's journey in Joseph Campbell's The Hero with a Thousand Faces.

Applying theories by Campbell and Donald Winnicott, this paper argues that toy narratives show how brokenness triggers a journey that results in resilience, personal growth, and emotional attachments, making the characters whole. As anthropomorphized broken toys living secret lives contemplate what has value and strategize how to stay vital, they become more alive, eliciting poignant emotions ranging from tenderness and emotion to terror and fear. These stories resonate strangely with both children and adults. They evoke empathy and speak to a society in flux, revealing the cultural complexity and confusion surrounding play, love, the imperfect chaos of childhood, and the inevitability of change and growing older. They show that toys, even broken ones, are important.

THEORIZING TOYS: MATTER AS A PLAYTHING
Soomin Hong, The University of Sydney, Sydney, NSW, Australia

This paper intends to find a theoretical way to study children's material culture, toys in particular, by revisiting theories related to play and materialism. Firstly, I would like to revisit the play theory of Johan Huizinga focusing on the aspect of play as a realization of a 'new reality'. Secondly, I would like to explore the concept of playthings as matter by following the notion of Henri Bergson who considers matter as an anchor point of the human intellect, and Gaston Bachelard who considers instruments—here, experimental tools—as a materialization of the abstract world. In that way, I expect to address a further discourse of centering toys on theoretical studies. I would like to explore the concept of toys as social objects and interrogate how we can study toys through the lens of new materialism by comparing it to the previously examined theories focusing on their contrasting standpoints toward toys.

UNRAVELING THE DUAL ROLE OF PUPPETS:
FROM AMUSING TOYS TO VALUABLE TOOLS IN CHILD RESEARCH

Olympia N. Mathiaparanam, Graciela Trujillo-Hernandez, Ellen Kneeskern, & Karl S.Rosengren,
University of Rochester

Puppets are not only popular recreational toys but are also extensively used in developmental research to assess children's social, emotional, and cognitive development. However, concerns have recently emerged regarding the validity and generalizability of using puppets in such studies. These concerns encompass issues like researcher bias, the lack of standardization, ethical considerations, and the appropriateness of this method for different age groups. One specific aspect of puppet research revolves around how children perceive and reason about puppets in research designs. This involves exploring whether children perceive puppets as living entities with their own thoughts, beliefs, and behaviors and whether they attribute different views to puppets compared to the researcher manipulating them. In this discussion, we will delve into the potential implications of using puppets in child development research and how they might influence children's perceptions and reasoning.

Session 8: **Innovations in Toy Design and Evaluation**

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HAPTIC SYSTEMS IN TOYS
Mark Allen, SFRL, Woking, United Kingdom

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This paper reviews current applications in the field of haptics in toys. The term 'haptic' is primarily defined as 'relating to the sense of touch', and is finding increased use in the field of Tangible User Interfaces (TUI). The audio and visual senses are described as 'remote' (i.e. function at a distance), act as sensory system inputs and require dual nodes for vectorisation – determining direction and magnitude. The haptic modality is a 'direct' sense as it requires contact via the skin, which is a complex organ with tens of thousands of receptors, functions as both system input and output, and detects pressure, heat, vibration and slippage. Research has shown that the sense of touch is adaptive due to the neural plasticity of the somatosensory cortex. Touch can be construed as the most reliable of the sensory modalities. When senses conflict, touch is usually the ultimate arbiter.

The sense of touch plays a major role in the development of cognition and social interactions. Play is an essential joy of childhood and is the way children learn about themselves, their environment and people around them. Arguably the majority of electronic toys have received greater attention on their audio and visual than haptic systems.

In the 1990s, companies started creating consumer products which allow users to receive tactile feedback from devices and "feel" virtual objects. A good example may be video game controllers. PlayStation released its first haptic gamepad, the DualShock controller, in 1997, which utilised "rumble" technology – weights attached to spinning motors – and in 2020, released DualSense, which uses electrical current to vibrate small metal coils, resulting in more precise vibrations allowing game developers to match sensations more closely to in-game situations.

More broadly within toys, arguably the adoption of haptic technology has been more complex, primarily due to cost. The most cost-effective electronic system input is via a digital switch – either on/off – which does not emulate the somatosensory system particularly well. The sense of touch is inherently analogue. Applied force and duration of an interaction may also be influenced by an emotive and cognitive context. The miniaturisation of multiple cost-effective analogue sensors has remained a technical hurdle along with the development of low-cost microcontrollers to process the volume of analogue data necessary to create realistic haptic systems.

Ongoing haptic innovations in other industries, once they come affordable or replicable will undoubtedly find their way into toys.

METHODS FOR DESIGNING TOYS FROM THE PERSPECTIVE OF CHILDREN

Krystina Castella, ArtCenter College of Design, Pasadena, California, USA
Karen Feder, Design School Kolding, Kolding, Denmark

When designing toys for children, it is important to understand children's diverse experiences with the toys in order to create more enriching designs. Including children at the center of the process, helps ensure that the toys are relevant and fun for children with diverse play patterns, interests, personalities and development traits. However, even when children cannot be directly involved, their perspective and experience of toys can still be kept at the center of the research and product development process.

This study shares diverse exercises for researchers and product developers to gain the child perspective and bring it to their practice in creating more inclusive child relevant toys. Some methods include collaborating with children and others can be applied to projects in the product development studio as individual or team exercises. The methods shared are utilized in the practices of design research, industrial design, interaction design and user experience design. The presenters will share the methods with project examples as well as outline opportunities and challenges identified with the diverse processes.

Methods include:
- Co-creating with children to understand their perspective
- An internship as a child allowing for the child to lead the researcher through its everyday life
- Building personas and use case scenarios to think through the product experience of a range of children of different ages, personalities, and interests
- Journey mapping and posture studies considering time, space and systems for play
- Inclusivity exercises to develop toys for a range of users that expand impact considering cognitive, social and emotional and physical development as well as special needs, gender, family makeups, and socio-economic backgrounds.

In this collaborative presentation the presenters will share their interdisciplinary work and strategies for supporting children, play and child inclusive design across very different institutional and cultural contexts. Throughout the years, they have shared best practices for research around children and play with hundreds of students and each other. The presentation shares methods and project examples from academia, as well as cases conducted in partnerships with large corporations on established toy brands and non-profits including children's museums, libraries, and hospitals. Presentation attendees will learn these methods and bring them back their own practices to integrate them into future work.

The presentation supports professional development for design researchers, professors and practitioners.

DESIGNING TOYS TO SAVE THE WORLD (IN A MARKET-FRIENDLY WAY)
Brian McCarty, War Toys®, Los Angeles, CA, USA

Millions of boys and girls play with the exact same generic toys. Despite the ubiquity of plastic soldiers and baby dolls, the toys' profit margins are so low that there is little incentive for toymakers to keep investing in and refreshing their lines. As a result, children from lower socioeconomic levels are denied the same quality of play as their more privileged peers, further increasing disparity. The War Toys® nonprofit organization has developed a revolutionary program to bridge that gap and give children everywhere access to toys that better support their development and society as a whole. We are building partnerships with the largest manufacturers in China and fostering market-friendly design changes and additions to enduringly-popular, generic / off-brand toy lines. Toymakers are given free use of our original designs and production molds along with gratis marketing materials and other support. They keep the increased profits, and in return, we harness existing markets and distribution streams to impact millions of children around the world. As pilot and proof of concept, War Toys is working to add noncombatant "army men" to sets of plastic military toys – photojournalists, aid workers, and frontline rescuers – supported by a board game that is positioned as a free, valued-added item. The game provides dynamic opportunities to educate children on the vital work of noncombatants in war, encouraging continued role play and discussion long after the game is won. Changing how kids play and understand "war" is just the beginning...

Session 9: - See Workshops

Session 10: **From Yesteryear to Tomorrow: Creating Systems to Understand Toys and Games**

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CLASSIFYING AND SUBJECT INDEXING OF "EUROGAMES:"
A CHALLENGE FOR TOY LIBRARIANS AND TEACHERS

Michel Van Langendonckt, HE2B & LUDO toy libraries association, Brussels, Brussels, Belgium

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In Europe, the growth and diversification of board games market and leisure practices present challenges for toy libraries both in terms of how games are classified and the clientele they serve. While one still finds families in toy libraries, teachers, other professionals, and adult hobbyists looking for diversified "eurogames" are increasingly present. Further, pedagogical adaptations of eurogames as a trend in ludo-pedagogy and andragogy (Van Langendonckt M,Board games in classrooms, ITRA,Paris,2018) has led to the development of about 40 "ludo-pedagogical centers" in Belgium between 2019 and 2021.

European toy libraries have more games than elsewhere in the world (http://itla-toylibraries.org/Conferences2011-2023). Yet the psycho-pedagogical E.S.A.R classification system focused on four types of play (Exercise Play, Symbolic Play, Assembly/Construction Play, and Games with Rules; Garon,1982, 2002, Filion, 2017) that dominates the classifying-indexing in many toy libraries fails to account for important qualities of these new and diverse eurogames.

This study begins with an examination of existing research that illustrate the shortcomings of the ESAR system (e.g. Boutin& Parlebas,2022; De Cassan,2013; Notebaert,2001; Samier&Jacques,2021; Whitehill, 2008) and illustrative analysis based on games found in European toy libraries, ludo-pedagogical centers and Websites like boardgamegeek.com and escaleajeux.fr.

From there, we examine the usefulness of two alternative indexing tools:
1. The "Ludovortex", a game design and subject indexing tool, for toy librarians and other professionals of cultural, educational, social and health fields (12 social interactions structures,65 mechanics,30 competencies and 30 implements types,10 animation,10 experience and 10 debriefing cards).
2. The S.M.I.L.E.classification range collections on shelves based on school matters and multiples intelligences (Gardner1995, Keymeulen& Van Langendonckt, 2018).

This analysis suggests that while structural approaches are the most universal and efficient for classifications (Boutin& Parlebas,2022), attention is also needed to socio-cultural approaches because they emphasize the relevance of social interactions structures in the Ludovortex both for learning and playfulness preoccupations. Further we find that development of E.S.A.R social abilities along with a limited thesaurus of 30 competences could improve the organization of games on shelves. Finally, the classification system would be improved by taking into account the executive functions and/or psychological skills identified from neuroscience literature.

THINKING AND CREATING IN ANCIENT GAMES

Maria Apparecida Campos Mamede-Neves, Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro, Brazil*
Ana Valéria de Figueiredo, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil &
Universidade Estácio de Sá, Estácio de Sá University, Nova Iguaçu, Brazil

The work presents a study of the ludic, of the process of thinking and the act of creation and, above all, of the constant investigation about ancient games, among them, the African ones. We highlight a brief overview of African and indigenous games and the possibilities they present to develop cognitive skills essential to reflective and creative thinking, pointing out the possible relationships between these millenary games and their digital format that so much attracts today's young people. We present a proposal to educators for a taxonomy of games created by Mamede-Neves (2013) with support from CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico, National Council for Scientific and Technological Development) and which is freely accessible to anyone interested in the subject.

THE INTERCONNECTION BETWEEN TOYS & (DIGITAL) GAMES: WHAT CAN THE TWO INDUSTRIES LEARN FROM EACH OTHER?

Markus Wiemker, Hochschule Fresenius, University of Applied Sciences, Cologne, Germany

This paper discusses the similarities and differences between the development of toys and digital games and the question of what the two industries can learn from each other. As a game designer, researcher, and consultant for toy development I wondered several times which aspects of one industry will help the other (e.g., to understand target groups better or to improve the products or the production pipeline). It's not a new insight that toys enable play and stimulate different kinds of play behavior; maybe the best example for this is a ball that allows all kinds of simple free play, but also different kinds of more structured sports and shooting games (e.g. 3rd or first-person shooter). In games play behavior is usually more structured and restrained, but there are also genres (e.g., sandbox games) where free play and different play styles are supported or where even the dominant game pattern and other games give, like toys, a lot of room for imagination and creativity. But maybe the toy industry can also learn from game development, for example the agile management of production, the construction of personas, and the analysis and tracking of different play motivations, expectations, experiences, and actual behavior. Especially with the new challenges awaiting us, like faster production cycles, new and emerging markets, competing entertainment offers, more and more screen time of the players, and the advent of "real" artificial intelligence, I see some good reasons to understand each other better.

LIFECYCLE CARD GAME: A PLAYFUL WAY TO LEARN ABOUT METAMORPHOSIS

Seung Heon Yoo, University of Rochester, Rochester, NY, USA; Florencia K. Anggoro, College of the Holy Cross; Benjamin D. Jee, Worcester State University, Worcester, MA, USA; Worcester, MA, USA; Martha W. Alibali*, University of Wisconsin-Madison, Madison, WI, USA; Karl S. Rosengren, University of Rochester, Rochester, NY, USA

Games can be an effective educational tool that allows children to take an active role in their learning process in a playful environment (Hassinger-Das et al., 2017). Games may allow for scaffolding interactions with caregivers that can foster children's science understanding (Callanan et al., 2020). Non-digital games (e.g., card games) can promote an ideal learning environment for children to actively learn science while socially interacting with caregivers, since non-digital games elicit more social interactions in both caregivers (Wooldridge & Shapka, 2012) and children (von Steinkeller & Grosse, 2022). The effectiveness of game-based activities has been investigated in mathematics (e.g., Scalise et al., 2018; 2020), but not generally with science games. Furthermore, the educational content of commercially available science games can be too complex for children to understand, even when games target children (Yoo et al., under review). The purpose of this study was to explore whether a biological card game focusing on the concept of metamorphosis can provide an informal learning opportunity where active social interactions between caregiver and child can take place to foster children's learning. We examine the types of questions and responses of caregivers and children that are elicited by the game, as well as the influence of card design (i.e., bland versus rich card illustrations) on caregiver-child conversations.

Seventy-seven caregiver-child dyads (child age: 3-12 years) were recruited from two local children's museums. Since this was part of a larger project that examined the influence of visual representation on biology learning (i.e., metamorphosis), all participants took part in a pretest-intervention-posttest study design. For this study, dyads were asked to play either a bland or rich version of *Lifecycle Card Game* (see Figure 1) after watching a short video lesson on the ladybug life cycle. The game session was video recorded and subsequently transcribed.

Preliminary analysis of 4 dyads suggests that the game promotes caregiver-child conversations about metamorphosis. On average, caregivers asked about 11 questions and children about 4 questions during a 3-minute gameplay. Most questions were about the relation between the lifecycle stages depicted on the cards (e.g., 'Who wins?'; see Table 1 for breakdown of questions). Furthermore, in each dyad, there was at least one case where either a caregiver or child corrected misconception(s) and explained the life cycle of an animal (see Table 1 for summary). Results suggest that biological card games are a promising way to promote children's biology learning.
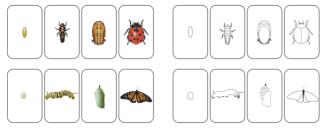

Figure 1. Lifecycle Card Game in Rich (left) and Bland (right) Formats

Note. Lifecycle Card Game is a two-player game where each player gets 16 cards. Each card has an illustration of a lifecycle stage of an animal that goes through metamorphosis, and the deck is composed of lifecycle stages of a ladybug and butterfly. This game is played in the same way as the classic 'War' card game, where each player shows one of their cards and the player with the more advanced life cycle stage wins the cards. The player who wins a greater number of cards at the end of the game wins the game. Images above represent a set of life cycle stages of a ladybug (top) and butterfly (bottom) with rich (left) and bland (right) card design.

Table 1. Types of Questions Asked and Responses/Comments Made by Caregivers and Children (Based on 4 Dyads)

Question Type	Caregiver		Child	
	Total	Mean	Total	Mean
Win	24	6	8	1.75
Game Rule	16	4	3	0.75
Card Image	2	0.5	3	0.75
Other	3	0.75	2	.29
Total	45	11.25	16	4
Responses/Comments				
Win*	20	5	40	10
Game Rule*	9	2.25	3	0.75
Card Image*	4	1	9	2.25
Lifecycle Stages*	12	3	3	0.75
Agree/Disagree*	37	9.25	25	6.25
Other*	8	2	2	0.5
Corrects	7	1.75	2	0.5
Explanation	4	1	2	0.5

Note. Question Type - Win/Tie: Questions about who wins a round (e.g., "Who wins?"; "Which one is further along?", "Which one is higher?"); Game Rule: Questions about the game (e.g., "What to do when there is a tie? Flip cards at the same time?"); Card Image: Questions about a card image (e.g., "Is this an egg?"); Other: Other questions that are irrelevant (e.g., "Are you trying to lose the game?")

Responses/Comments - *: Mutually exclusive items; Win: Responses/comments about who wins a round (e.g., "I win", "This is higher"); Game Rule: Responses/comments about the game (e.g., "We can do it [flip] at the same time"); Card Image: Responses/comments about a card image (e.g., "Another egg!"); Lifecycle Stages: Responses/comments about the order of stages (e.g., "This is fully grown", "This is an adult and that's an adult", "This one is at the bottom and this one is at the top") Agree/Disagree: Responses/comments that agree or disagree with what the other has said (e.g., "Yes", "You are right", "No, I don't think you won"), Other: Irrelevant responses/comments (e.g., "Thank goodness you are here"); Correction: Responses/comments that correct a misconception (e.g., "This is fully grown"); Explanation: Responses/comments that provide an explanation (e.g., "This one is at the bottom and this one is at the top")

WILD PLAY: AN EXPLORATION INTO THE DESIGN OF ECO-FICTION CHARACTER TOYS

Tanya Marriott, College of Creative Arts, Massey University, Wellington, Wellington, New Zealand

The implementation and effect of eco-fiction design criteria applied to designing a range of character toys is an important but under-evaluated field. As a creative employing an embodied practice as a doll and toy designer, well-designed commercial character toys can be powerful pervasive agents for environmental awareness and interconnectedness with the natural environment. Using an eco-fiction toy framework enables the designer to embed ecological principles within the character toy design process. My research demonstrates how a toy play set can embody an eco-fiction narrative and simultaneously be an ecosystem to encourage and stimulate imaginative play. Contemporary children have less free time to play outdoors, and character dolls and action figures are not designed for outdoor play. The pandemic further flagged an increased desire for outdoor play, but character toys designed explicitly for small-world play need redefining to be more effective in an outdoor play space. Edith Cobb describes the act of children building their own narratives within the natural environment as a crucial method to build a stronger sense of self-actualisation and relationships with other living beings. Without this mode of outdoor play, there is a risk that children will become further disconnected from the natural environment. Aotearoa, New Zealand's bicultural views of environmental guardianship and my practice-based experience in this area offer a diverse perspective of children's relationship with the natural world. The research draws from a range of source material, particularly highlighting the successes of the 1980's My Little Pony (G1) ecosystem of character toys in developing an eco-fiction toy design schema. As defined by Dwyer and Buell in environmentally significant texts from Walden to Watership Down, Eco-fiction centralises animals as world figures, exploring the world through their perspective. The research further considers what level of anthropomorphisation of creatures can add narrative value to play. This presentation demonstrates the use of the eco-fiction schema within the design of prototypes entitled 'The Underfoot' toy designs. I will share the initial results from the playtesting sessions conducted with a focus group of New Zealand children, through video analysis, observation, field notes and post-play parent interviews. The results are compared to interview appraisals by international toy industry designers on the final design's environmental engagement effectiveness. Initial findings indicate that using an eco-fiction narrative within the design of character toys can enhance environmental awareness for children aged 5-7 and encourage them to develop unique environmental narratives in simultaneous play with the toys.

THERAPEUTIC PLAY: ADULT PUZZLING AND HARD TIMES
Anne D. Williams, Bates College, Lewiston, Maine, USA

Parents and teachers alike know the benefits of jigsaw puzzles for young children. But most people view adult puzzling at best as merely an enjoyable leisure activity, and at worst as a complete waste of time. This paper discusses the therapeutic value of puzzles for adults during two major jigsaw puzzle crazes in the United States. The puzzle mania of the early 1930s arose out of the economic hardship of the Great Depression. The one in the 2020s grew out of pandemic lockdowns and isolation.

Contemporary accounts from both the 1930s and the 2020s form the basis for the discussion. In both cases, the surge in puzzling reflected both the demand by consumers and the relatively easy entry of new producers into this area of playthings. Many small-scale producers did their manufacturing in home workshops. Advertising played a major role too, via premiums given to purchasers of consumer products in the 1930s, and via social media more recently. While the 1930s craze was short lived, the current one may have more staying power.

THE THERAPEUTIC POWER OF REBORN DOLLS AND THE PRODUCTION OF THE SELF
Emilie St-Hilaire, Concordia University, Montreal, QC, Canada

This presentation will specifically consider three aspects of adult doll play as therapeutic intervention by asking the following questions: First, how do the physical properties of the doll provide comfort and establish needs that are met through caregiving? Second, how do dolls provide a sense of personal identity through narrative play, community, and via retail therapy? And finally, how is companionship attained through imaginative perception and via social connections? These benefits (comfort, a sense of personal identity, and companionship) accompany what I call synthetic relationships (the doll is a synthetic companion, the relationship is real). I will explore these benefits of doll ownership by drawing from research on doll therapy in dementia care, studies on sex doll usage, and according to my own research on reborn dolls (vinyl or silicone hyper-realistic baby dolls). Synthetic relationships can contribute to well-being and the fulfillment of needs where alternatives could be detrimental, or are non-existent. Less a toy than a tool, dolls can prompt a range of actions and responses, ultimately producing positive affective states.

Using narrative accounts my research demonstrates how synthetic relationships support the production of self through sensations of empowerment. Further, ownership of a doll collection can be empowering as it offers a sense of control in one's life. Is the empowering nature of doll ownership one reason why synthetic relationships are gaining popularity at the present moment? Perhaps, but, historical cases of passionate interactions between human figures and human beings frame the current phenomenon of synthetic relationships as a contemporary form of pygmalionism. Little has changed in terms of public perception and personal fulfillment in relationships with artificial humans. In the twenty-first century, however, doll owners uniquely have the ability to connect with one another online, and this has united (and empowered) enthusiasts, mollifying the effects of social stigma for doll owners. Significant advancements in the quality of realistic human figures have also contributed to the viability of synthetic relationships today. Sex doll ownership is discussed here in comparison to reborn dolls. This paper concludes with the proposition that synthetic relationships could actually be indicative of a desire to connect with others. The empowering aspects of doll ownership can support personal development and good social and mental health, ultimately improving real world relationships for many doll owners.

"**KELLY STAYS HOME:**"
CONTENT ANALYSIS OF CHILDREN'S BOOKS ABOUT COVID-19 IN TURKEY AND THE U.S.
Graciela Trujillo Hernández, Burcu Ünlütabak, İlayda Velioğlu, David Menendez, & Karl S. Rosengren, University of Rochester, Rochester, NY, USA

Parents and teachers often use picture books to convey information to children (Shtulman et al., 2020; Kelemen et al., 2014). These books reflect the values and ideas of the culture in which they were created and provide a crucial socialization context (Lee et al., 2014). This study analyzed storybooks about COVID-19 intended for 3- to 12-year-olds published in the first year of the pandemic (2020-2021) in two cultures (U.S. and Turkey). We examined books (N = 25 U.S./ N = 17 Turkey) published in the native language of the country that were found on popular bookselling websites. Books published in Turkey were more likely than books in the US to use directives and recommendations when presenting COVID-19 related information. Books in the U.S. were more likely to provide explanations about the virus. Books in the U.S. presented information about precautions to take (26%), COVID-19 (23%), and the expression of the children's emotions during the pandemic (19.7%). Books in Turkey presented hygiene-related information (10%), COVID-19 (13%), and used anthropomorphic presentations (13%). We highlight similarities and differences in the content and communication styles of the books in the two cultures. We discuss these findings in terms of implications for using these books as socialization tools that parents and teachers can use to help their children better understand the COVID-19 pandemic.

Session 14: **Whose Design for Whom?**

CULTURAL LEGITIMATION: THE EVOLUTION OF AUTHORSHIP IN BOARD GAMES
Vincent Berry, Annie Xiang & Vinciane Zabban[*], University Sorbonne Paris North, Paris, France

Since the mid-1980s, there has been a certain infatuation with board games in France and more broadly in Europe. This is reflected both in the growing number of titles available - more than 1,000 new titles were published in 2021 - and in the ever-increasing number of publishers and people who play them. In 2015, nearly 75% of French people said they had played a board game in the past year, compared to over 85% in 2018 (Berry & Coavoux, 2021).

In parallel with this diversification of games offered, all or almost all professionals note a form of cultural legitimization. Board games are indeed the subject of specialized journals, expert debates, and international awards. These appear printed on game boxes, just as film posters or book covers indicate awards the work has received (Berry & Roucous, 2021). According to professionals, board games seem to be undergoing an evolution comparable to that of comic books, moving from a declassified artistic practice aimed at children to a more legitimate cultural practice played by adults (Piette, 2015).

To further investigate this legitimization, this paper focuses on the evolution of authorship in board games through the study of a data set. Are the game designers always credited? Are they mentioned as "Authors" or "Designers" ? Where and how are they credited? On the box? On the rules? When are they mentioned? Are they mentioned by all publishers? In what way?

The data analysis is based on the "Fond Patrimonial du jeu de société". This is one of the most important board game collections in France, consisting of more than 12,000 titles from the end of the 19th century to the present. Housed at the Sorbonne Paris North University, this collection mainly includes North American and European productions. Close to being exhaustive, the FPJS allows one to observe the growing importance of the mentions of the authors and illustrators, with significant differences depending on the period and country. These differences testify to the evolution of the social status of board games over time:

as a medium of education (Whitehill, 2021) or even innovation, for children, it gradually became an object of family entertainment, and in recent times has taken on the status of a cultural object.

COMMUNITY RESOURCES AND WOMEN AUTHORSHIP IN THE BOARD GAMES WORLD
Jean-Emmanuel Barbier & Vi Tacq, Haute Ecole de Bruxelles-Brabant, Brussels, Belgium

In this paper, we are interested in exploring how the contemporary board games world is structured, and how access to resources for authors could give us insight on its dynamics. Our focus is to confront individual courses with the structure of the field, drawing on research material from two studies.

The first study deals with women's careers in board games authorship using combined quantitative data from events websites and media, and semi-structured interviews completed by a retrospective autoethnography.

Attention is given to gender (Bourdieu, 1998) in the mobilization of resources by the female authors to fit into the chains of cooperation (Becker, 1988) in this leisure-structured world (Fine, 1989).

Women are involved in the creation of board games but in small number. The obstacles can be external to the game world and internal (organizational structure favoring male sociabilities).

Being involved in communities provides important resources for involvement in the leisure (Fine, 1989). Therefore, restrictions on the participation have an important impact as female author career is different from the path expected by the community of hobbyist gamers.

The second study is based on an ethnography of passionate gamers. It is relevant for this discussion as hobbyist gamers constitute the core of the social networks around the legitimate board games world.

They are forming a community of practice (Barbier, 2021), very homogene (Berry, 2021), structured around legitimate forms of participation and reification (Wenger, 1998). It is also the principal source of discourse (Woods, 2012; Rogerson, 2018).

One form of participation is being involved in board games creation, as an occasion to get feedback from others and sometimes from professionals. Consequently, this type of sociability gives access to a lot of resources identified by Fine (1989) in his resource mobilization theory, such as this game literacy.

This core practice legitimates one form of career to authorship. So, female authors take part in this valued activity without moving from the periphery of the hobbyist community, missing out on resources to access spaces where common resources are provided because of their alternative careers.

But a large variety of practices of boardgames exists outside the hobbyist community (Berry, 2021). The strategies used by female authors to access resources implies that there are groups with their own resources among this social field. Therefore, the visible central community of the hobbyist boardgamers should not be assumed to be the only core in the board games world.
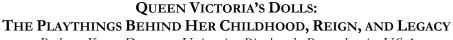
LEVELING UP: THE WOMEN IN GAMES INITIATIVE AT THE STRONG
Julia Novakovic, Senior Archivist The Strong National Museum of Play, Rochester, NY, USA

For more than a century, women have created games and shaped how people play, but their contributions have often been overlooked or obscured. In 2017, The Strong National Museum of Play launched its Women in Games Initiative, which is guided by the overarching goal of using that history to inspire girls, young women, and other under-represented people to confidently play games and pursue careers in games. Julia Novakovic will present on the history of the Women in Games Initiative at The Strong and the importance of collaboration to enrich the representation of women within the museum's archival and object collections, as well as connecting and engaging the public with these stories.

Doris Bergen joined ITRA in 2008 and was an extraordinary researcher, visionary leader, and prolific writer (12 books and more than 150 journal articles and book chapters, including her most recent book *The Handbook of Developmentally Appropriate Toy*s). Always willing to share her time and talent, she was an invaluable member of the scientific committee for our World Conference this year. She was scheduled to be part of this session to present her latest research project "Older Adults' Memories of their Childhood Toy Play," a study she was conducting in collaboration with her daughter Gail Burnett. Sadly, in late June of this year Doris was diagnosed with late-stage cancer and passed away on July 5, 2023. In recognition of her many contributions to toy and play research, to ITRA, and to the many, many scholars whose lives she touched as a mentor and advocate, we dedicate this session in her memory. She will be missed but certainly not forgotten. Rest in Play Doris.

QUEEN VICTORIA'S DOLLS:
THE PLAYTHINGS BEHIND HER CHILDHOOD, REIGN, AND LEGACY
Bethany Kaser, Duquesne University, Pittsburgh, Pennsylvania, USA

For Queen Victoria and Victorian society, toys held considerable power. Dolls were integral components of Victoria's childhood, reign, and legacy. A collection of Dutch peg dolls dominated the monarch's childhood and the public maintained interest in these dolls for years to come. This paper is part of a larger dissertation-in-progress, arguing that Victoria's childhood play influenced and complicated her reign and Victorian society. The larger project contains four case studies of Queen Victoria, Frances Low, Frances Hodgson Burnett, and Queen Mary and their relationship to dolls–especially Victoria's dolls. This excerpt focuses on Victoria and her role as the person behind the dolls and their impact on Victoria and her legacy. The impetus for the project is an edition of Frances Low's *Queen Victoria's Dolls*, housed at the Strong Museum of Play. Low's text is an in-depth examination of the doll collection, published late in Victoria's life and in response to a public interest in famous women and their dolls. The evidence for the importance of dolls in Victoria's life comes from Low's text, Victoria's letters and diaries, and the young Victoria's self-illustrated children's story, *The Adventures of Alice LaSalles* (an edition is also housed at the Strong). Expertise of scholars in girlhood, doll, and object studies–such as Lynne Vallone, Grace Greenwood, Kim Mousland, Robin Bernstein, and Miriam Fornam Brunell–aid in the close reading of these artifacts.

Examination of the dolls reveals much about Queen Victoria and the prominent role dolls played in her life. Her artistic talent is clear through the doll and costume designs. Victoria's preservation of the doll collection serves as a preview to her and Prince Albert's lifelong work in collecting. Victoria's doll play also precludes a generation of girls trained in feminine ideals via dolls, but also opportunities to thwart proper femininity through play with those same dolls. Ultimately, I argue that Victoria's doll play was a catalyst for her creation of a nationally recognized definition of Victorian girlhood and that the complicated implications of these dolls leaves a legacy still existent today. Victoria's dolls function as playthings, artwork, collectibles, training apparatuses, symbols of Victorian girlhood, companions for the young Victoria, inspiration for generations of future doll play and stories, and loci for rigorous discourse on the complicated relationship between toys, identity, and socialization.

AESTHETICS OF THE LUDIC: PLAYING AS POIESIS

Ana Valéria de Figueiredo, Valéria Leite de Aquino & Beatriz Sampaio Iacillo de Albuquerque*, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

Ludic activity is part of human nature. Through it we learn to read the world and create new possibilities. This study investigates games, toys and play in pre-service Visual Arts education students' childhood memories as poetic narratives of their aesthetic experiences, or in other words as poetics of existence.

In this way, we examine playfulness in art and education as a way to seek the roots of the formative developmental processes of identity formation in constant interaction with the surrounding environment and their individual and collective constructions as integral to their search for the aesthetics of life. In this sense, we draw on the Greek notion of aisthesis, "feeling with the senses," in poetic elaboration on a daily basis to go beyond the walls of the university. The initial results of our research point to the importance of inserting playfulness in the training of teachers so that future teachers are more sensitive to the particularities of aesthetics and attentive to the processes of learning to read and write the other as legitimate forms of learning. These connections can strengthen the construction of dialogues as bridges between the broader education field and the university.

AFFORDANCES, OPPORTUNITIES, AND SOCIAL SUPPORT: AN AUTOETHNOGRAPHIC-SYMBOLIC INTERACTIONIST ANALYSIS OF THE IMPACT OF TOYS ON CREATIVITY, SKILL DEVELOPMENT, AND LIFE OPPORTUNITIES

James R. Pennell, University of Indianapolis, Indianapolis

This paper uses a dialogical, autoethnographic approach to examine the role of toys and parenting decisions on the author's childhood development and adult opportunities and interests. Drawing on symbolic interactionist theory, the paper analyzes how self, other, and objects, particularly toys and adult analogues for those toys, came together in my life to produce a range of life skills that can provide the foundation for a good life. The dialogical element is a discussion with my mother of her intentions and parenting strategies in the provision of various toys and her experiences of successes, failures, surprises, and disappointments in comparison to my own memories and understanding (following Chang's [2008] recommendation not to simply rely on one's own recall). Drawing on my mother's and my discussion, I also examine the similarities and differences between my toys and the affordances they provided to my younger brother's toys and his childhood and adult interests and opportunities. These are considered within the context of 1950s and 1960s culture, including the expansion of youth culture, as well as our suburban neighborhood context and childhood friendships (again, following Chang's [2008] recommendation to examine authors' experiences in relation to others). Findings include how similar toys and parental treatment can result in different outcomes as individual identity and interests develop, as well as the fuzzy line between toys and play and the objects and activities associated with adult work and play. Problems of equity/fairness and birth order in toy provision and how they can impact parental decision making are also examined. Finally, the importance of finding a balance between "helicopter" and "permissive" parenting in relation to toy provision and use to promote childhood interests, industry, creativity, and identity development is considered.

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OBJECTS AND CHILDREN'S SOCIABILITY IN THE PLAYGROUND
Gilles Brougère, Université Sorbonne Paris Nord, Villetaneuse, France

This recent research, data collection was conducted January-March/2023, questions the place and the role of objects, focusing on items brought in by children, whether they are toys or not, playthings or not, permitted or not. The objective is to understand their role in the children's relationships by analysing their different uses: playful activities, exchanges, discussions or displays. What do these practices say about the relationships, the material and playful culture, but also the organization of the school space, recess, its games and rules, both tacit and official? If the research does not focus on the objects provided by the school, it will nevertheless be necessary to understand the rules and the relationships with the objects brought by the children.

The literature on the topic focuses on play and relationships between children (Delalande, 2001), the role of media in playground culture (Willett et al., 2013; Burn et al., 2014) but has little interests in objects with the exception of play structures which are not considered in this research which focuses only on objects that children can carry.

Our hypothesis is that objects, the material culture of children, constitute a medium for the construction of relationships that go far beyond play. If the object, especially the franchises (Steinberg, 2012), is a way to participate in the children's culture, we propose to see that participation in different universes is constructed collectively and passed by activities with the peers who support it. Beyond the franchises, particularly to be taken into account, how do the sociabilities around objects build participation in children's culture? The articulation between the different dimensions of children's play culture (franchises, fashions, novelties, more or less transformed traditional practices) will thus constitute one of the questions.

Our main questions are therefore: What objects are brought into the playground by the children? What are their characteristics? What are the practices developed by the children from or around these objects? What is the influence of the school context? What is the articulation between the school world and the outside world?

For this, three Parisian elementary schools (children aged 6 to 11, focused on 7 to 10) with contrasting populations of social backgrounds were selected. In each school, interviews were conducted with the supervisors of the recess. Observations were made during recess of school time and lunch time. Group interviews of children were organized in each school.

COMMITTING TO INCLUSION: PLAYSPACES AND PROGRAMMING FOR ALL

Silvia Steele, Explore & More-The Ralph C. Wilson Jr. Children's Museum, Buffalo, NY, USA

One of the most overlooked populations facing challenges with equity and inclusion are adults and children with disabilities. This presentation will discuss the importance of utilizing inclusive practices when designing play spaces, and children's programming. Staff from Explore & More-The Ralph C. Wilson Jr. Children's Museum, will provide insight and steps taken by the museum to promote accessibility, inclusion, and full participation, which have lasting benefits to the community.

KABOOM! PLAYSPACE IN ROCHESTER'S 19TH WARD PROJECT
Megan DeCausemaker, 540 West Main, Rochester, NY, USA

The importance of play in child development cannot be overstated. Play is the very foundation of learning for children and has a vital role in building relational skills, personal independence and autonomy, cognitive function, imagination, creativity, resiliency, conflict resolution, and a sense of belonging. Access to safe and comfortable play spaces are denied to whole neighborhoods due to systemic racism. In 2020, 540 West Main, Inc. - a virtual antiracist education platform founded in Rochester, NY was selected as a Play Everywhere Design Challenge grantee. The Play Everywhere Design Challenge was created by KABOOM! - a non-profit with a mission to create equitable play spaces in communities where access has been denied due to systemic racism, and the Ralph C. Wilson, Jr. Foundation - a non-profit investment foundation focused on funding community projects in Western New York and Southeast Michigan. Based on research on the effect of play on toxic stress in children, and in collaboration with the local community, the University of Rochester, the Barbara J. Burger iZone, and the 19th Ward Community Association (https://19wca.org), 540WMain built a community-designed playspace to help kids imagine pathways to opportunities through play, their own curiosity, and accessible design. The playspace is located in the 19th Ward of Rochester, NY - the largest and most racially diverse residential neighborhood in the City of Rochester.

Session 18: Screen Time as Toy Time

<p style="text-align:center">Playing Around on Zoom:
The Intersection of Traditional Play With Technology
Rebecca Horrace, Indiana University</p>

Purpose: Play has always been central in the lives of children. However, the decline of free play opportunities for children has become a noticeable trend in current years (Digennaro, 2021; Gray et al., in press). During the pandemic, children turned to online environments to find entertainment and socialization. Typically, these online spaces available for children were adult-invented worlds or pre-constructed games that had an end goal, which made me question: Could there be an online space where children meet for playgroups similarly to in-person, where children share their toys, chat about their interests, and engage in imaginative play?

Methodology: I utilized nexus analysis (Scollon, 2001) to investigate children's imaginative play in an online space through Zoom as children mediated shared discourses and literacies to expand the definition of "local" by converting distant interactions into a common, shared space, allowing endless imaginative play opportunities across the nation.

Videos were analyzed focusing on different actions the children performed, the toys they played with, the dialogue spoken, and so forth. Memos were crafted that connected actions to larger themes of specific play discourses and literacies. Videos were then coded further developing several emerging themes such as digital literacies, embodiment, and belonging.

Findings: By analyzing children's play, I interpreted several components of children's experiences to include– mediated actions, literacy discourses, digital literacies, online restrictions, and media incorporations– across their play avenues as children moved back and forth between digital and n
on-digital realities during their participation in online playgroups. Breaking down children's play practices, meanings evolved of children's understanding of screen conventions; children's expert roles on characters and toys; peer relationships including belonging, inclusion, and negotiations; technology expansion for play and toys; co-authoring as children storied together with toys; etc.

Future implications for this research include several exciting possibilities to implement online playgroups within other social groups, such as mobile families, homeschoolers, hospitals, and libraries, as well as analyzing additional group dynamics of gender, multiculturalism, and age of participants.

Conclusion: Online imaginative playgroups are not only child-centered, but child-led. The experience is truly tailored to the groups' interests and wants, rather than preconceived adult "shoulds." As play advocates, let us embrace the unique opportunities that online imaginative playgroups offer and watch children play their way *through* the screen as together they become creators, collaborators, and storytellers, remixing their way across discourses as they navigate their social and cultural belonging.

PLAYING WITH WRITING IN VOOKS' PICTUREBOOKS

Maria Eduarda Sousa Santos[*] & Vânia Soares Barbosa, Universidade Federal do Piauí, Teresina, Piauí, Brazil

Visual forms of communication have been present in Western society ever since the beginning of civilization. They evolved and nowadays are more visual than ever, with graphic resources such as (moving and still) images, colors, layout, and typography. Picture books, particularly, are examples of those forms of communication which have been highly impacted by the advances in digital technology. Being a toy and/or used as teaching material, this genre challenges its users to understand and integrate all the semiotic modes in its composition during the act of reading. The visuality of writing, here represented by the typography, is part of that challenge and, therefore, has gained the attention of many theorists, researchers, and educators, such as van Leeuwen (2006), Serafini and Clausen (2012) and Silva and Barbosa (2020). In this presentation, we aim at discussing that visuality in contemporary picture books and, consequently, the implication of using this kind of toys in educational context. To achieve that goal, five picturebooks published on the website Vooks were selected and four of their parts – the cover, page of narration, page with mental processes, and

pages with verbal processes – were analyzed. Then, their typography was described based on the systems proposed by van Leeuwen (2006) and Serafini and Clausen (2012). The results showed that typography has the potential of visually defining which participant is speaking as well as establishing relations with the meaning of the word. For example, the typography used in the word "jumped", in one of the narratives, was organized as if the letters were jumping themselves, thus also bringing the ludic to the act of reading. Based on that, we believe that by emphasizing visual aspects of writing, such as weight, size, and framing, and the layout of the pages, for example, parents and teachers could help young readers to read and make sense of those visual elements as parts of picture books' narratives.

VIRTUAL PRETEND PLAY: THE COMMERCIALIZATION OF TOYS ON YOUTUBE

Bhoomi K. Thakore, University of Connecticut

Since its 2005 launch, YouTube has become a significant online platform for videos. Today, YouTube is among the top visited websites, generating billions of daily views. The most popular videos include gaming videos and videos aimed at children. Most new content is posted by the small percentage of YouTube channels with high numbers of subscribers. Many people visit YouTube to learn something or stay informed, and also let their children access YouTube videos. Among parents with children under 11, 81% let them watch YouTube at least occasionally and 34% let them watch YouTube regularly (Pew Research Center 2019). This is mostly facilitated by the 2015 launch of the YouTube Kids app, a child-friendly interface that relies on view history and recommended content like its parent version.

For this presentation, I will conduct a systematic analysis of the YouTube channels within the Top 50 subscribed channels and highlight those that publish non-cartoon videos aimed at children. I will explore the popular themes of these videos, to include unboxing, toy advertising, imaginative play, and video production techniques. Finally, I will reflect on the influence of YouTube videos on children consumers' learning, socialization, and identity development.

Friday August 11, 2023

Session 20. **Immigration & Assimilation: The Power of Playthings**

LEAD IT BE: TOYS, ANTIMODERNISM, AND EMPIRE IN INTERWAR AMERICA
Anne Boyd, Boston University, Boston, MA, USA

In the early 1920s, a German exporter named Gustav R. Julien sent a set of lead ethnographic "Escimo" figurines to the United States, now in the collection of the Boston Children's Museum. Simultaneously hard and malleable, the figurines worked as a form of interactive education for young children during the Interwar Period as part of a larger toy series entitled "New Ways of Teaching History." Over 70 small pieces, many of which are duplicates, comprise the set and range in size from a few centimeters to two inches. Hand painted and thin, the toys render Inuit people as collectively frozen in time, becoming relics of the past within a world which was changing at an increasingly fast pace.

Gustav R. Julien, New Ways of Teaching History: Miniature Metal Historical Figures. Geography & Study of Nations. No. 71: Escimo Life, date unknown, paint on lead figures, Boston Children's Museum, Boston.

By drawing on visual and documentary evidence, this interdisciplinary paper will argue that these ethnographic toys illuminate how the paradoxical antimodernist impulse, at work after World War I, found its way into toys intended to teach young children about Inuit people. Although scholars such as Shari Huhndorf have written about the relationship between the United States, post-World War I imperialism, and Inuit communities, the role of material objects in this complex dynamic has not yet received adequate analysis. By considering the use of objects as pedagogy, this paper will interpret the ideas concerning race, gender, and citizenship encoded within these material artifacts.

SERIAL TOY AND ITS INFLUENCE ON MASS CONSCIOUSNESS
Anastasiia Mikhno, Maria Curie-Skłodowska University, Lublin Poland
presented by Alexia Kosmider, Rhode Island School of Design

The ongoing processes in modern society and changes in the global geopolitical situation inevitably lead to changes within the social structure, particularly in the system of value orientations of individuals and large social groups.

Over the past decades, significant changes have also occurred in the toy industry and the visual aesthetics of mass-produced toys. The era of scientific and technological progress has given rise to numerous new toys, while many of the older ones have transformed beyond recognition or been displaced as an atavism. Toys are not only a channel for transmitting the values of mass culture but also their source and foundation. Serial toys shape and reflect existing social values and the attitudes of public consciousness, which is why they need to be more deeply understood and comprehended.

This paper will analyze the ideological content of mass-produced toys, the changes they undergo in the historical and cultural process, and the relationship between the appearance of toys and social expectations. The ideological component was most pronounced in the production of toys in the USSR, where the state education strategy directed the interests of children with a thematically strictly limited assortment of goods for children's games. This paper will consider what might have been the hypothetical consequences of this strategy.

The following questions will be addressed: Is there a connection between what representatives of different generations played with and the processes occurring in society? How does the ideological content of mass toys influence the value and meaning orientations of society?

This paper aims to summarize information on the researched topic and share preliminary thoughts on the interrelation between the temporal transformation of the appearance of toys and the shift in mass consciousness.

THE WINNIE-THE-POOH TOYS AND THEIR IMMIGRATION TO AMERICA

Mark I. West, University of North Carolina at Charlotte, Charlotte, NC, USA

Christopher Robin Milne's original Winnie-the-Pooh toys are literally the stuff upon which legends are made. When he was a young boy, Christopher Robin acquired a collection of stuffed animals who came to be known as Winnie-the-Pooh, Eeyore, Piglet, Tigger, Kanga and Roo. As a boy, he enjoyed playing with these toys and making up stories about the toys' adventures. His father, A.A. Milne, drew inspiration from his son's interactions with these toys, creating two classic books that deal with Christopher Robin and his toys: Winnie-the-Pooh (1926) and The House at Pooh Corner (1928). The publication of these books, however, was not the final word on the story of these toys.

About twenty years after the publication of The House at Pooh Corner, these toys became the focus of a complicated immigration story. In 1947, A.A. Milne donated the toys to his American publisher, E.P. Dutton. The publisher then arranged for the toys to tour America. After the tour, Dutton put the toys on display in their main office in New York City. Dutton then transferred ownership of the toys to the New York Public Library in 1987. Christopher Milne, upon whom the character of Christopher Robin is based, voiced his approval of his bear's move to America in his memoir Beyond the World of Pooh. Today "Winnie-the-Pooh and Friends" is the centerpiece of the Polonsky Exhibition of the New York Public Library's Treasures. These treasures are on display on the display at the Stephen A. Schwarzman Building on 42nd Street.

The fact that the original Winnie-the-Pooh toys have found a home in New York relates to an interesting history of American responses to British children's literature and culture. British children's authors produced many of the great classics in children's literature, including Winnie-the-Pooh and The House at Pooh Corner, but it took American readers, librarians and scholars to appreciate fully the cultural value of these works. The readiness of Americans to embrace the Winnie-the Pooh toys is tied to the ongoing popularity of British children's culture in the United States.

THE ERÉ POMTECA PROJECT:
ART AND PLAY FOR THE RE-EDUCATION OF ETHNIC-RACIAL RELATIONS

Ana Valéria de Figueiredo & Gabriel de Figueiredo Costa
Universidade do Estado do Rio de Janeiro, Brazil
Zulmira Rangel Benfica[*], Universidade Estácio de Sá, Nova Iguaçu, Brazil

This project aims to investigate games, toys and games of African and Indigenous origin in educational and artistic practices, in defense of anti-racist education by and for diversity in training spaces. Seeking how the games and playing practises of African and Indigenous matrices are present in brazilian composition as a people provides potentialized and effective pedagogical actions for the education of ethnic-racial relations.

On the ludic, Huizinga (2001), Caillois (2017) and Brougère (2002) initially support the proposal; on Education for Ethnic-Racial Relations and Anti-racist Education, documents such as DCNERER (Diretrizes Curriculares Nacionais para a Educação das Relações Étnico-Raciais e para o Ensino de História e Cultura Afro-Brasileira e Africana, National Curricular Directives for the Education of Ethnic-Racial Relations and for the Teaching of Afro-Brazilian and African History and Culture) (BRASIL, 2004a; 2004b), LDBEN (Lei de Diretrizes e Bases da Educação Nacional, Law for National Education Directives and Bases) 9394/96, laws 10.639/03 and 11.645/08 are central to research and teaching, research and extension, goals expected by the investigative work.

Eré Pomteca's guiding question is to enable the contact between Visual Arts and school practice in Basic Education. As central objectives we can mention: to favor, elaborate and develop innovative methodologies and practices related to teaching in/for the Teaching of Arts in interface with the ludic; and specific objectives: to research the socio-historical origins of games, toys and games, specifically of African and indigenous origin; plan, develop and dynamize ludic-artistic workshops with a view to the elaboration of didactic material in creative/innovative methodologies and practices in/for the Teaching of Arts.

The research is constructed as illuminative qualitative, and the data collected will be analyzed according to Bardin's canons. The following goals stand out: the validation of didactic methodologies with ethnic-racial games for use by educators, available online and printed; preparation of a digital inventory of Afro-indigenous games, toys and games; videos/classes and continuing education for teachers from public schools and Normal School students.

LEVERAGING CARD GAMES TO PROMOTE RELATIONAL REASONING IN BIOLOGY: DEVELOPING A PROGRAM OF RESEARCH

Benjamin D. Jee, Worcester State University, Worcester, MA, USA; Florencia K. Anggoro, College of the Holy Cross, Worcester, MA, USA; Seung Heon Yoo & Karl S. Rosengren, University of Rochester, Rochester, NY, USA; Martha W. Alibali*, University of Wisconsin-Madison, Madison, WI, USA

This work investigates how play can support children's learning about the concept of biological variability, which is considered a "big idea" in the biological sciences. Indeed, understanding of within-species variability is fundamental to understanding natural selection and evolution (Emmons & Kelemen, 2015; Shtulman & Calabi, 2012). Past research has shown that young children (and many adults) hold inaccurate beliefs about degree of variation from one member of a species to another and from parents to offspring (Hermann et al, 2013; French et al., 2018). At its core, understanding biological variability involves relational reasoning: discerning relevant relationships within and among biological kinds. These relationships can become salient when children are prompted to compare multiple examples within or between categories. However, educational materials often lack opportunities to make these comparisons. A single exemplar is typically used to represent an entire species in educational materials (Menendez et al., 2020) and in informal science learning contexts, such as museums (Jee & Anggoro, 2021; Schilthuizen et al., 2015).

Life-cycle Stage Cards

Example Species Cards   Action Card

Figure 1. Prototype of a Biologized Card Game

Note. This card game is composed of three different types of cards: animal life-cycle stage card (top images), example species card (bottom-left image), and action card (bottom-right image). Animal life-cycle stage cards consist of images of life-cycle stages of 20 different animals. Species cards consist of images of animal species that go through different types of growth (e.g., species that go through metamorphosis versus those that do not). Lastly, action cards describe a unique trait that some of the animals have (e.g., animals that can be poisonous).

The objective of the game is to be the first player to get rid of all the cards. To set up the game, each player gets 7 cards, and the remaining cards are placed face down in the middle to form a draw pile. Then, a discard pile is formed by flipping the top card of the draw pile. To play the game, a player has two choices: they can either place a card that has the same life-cycle stage as the on the discard pile but from a different animal (across species) or place a card from the same animal (within species) but has a life-cycle stage that is either prior or after the one on the discard pile. Otherwise, the player will need to draw a card from the draw pile. Species cards can be placed on any card. The player must state which animal (or animal life-cycle stage) it will represent for the next player. Similarly, action cards can be placed on any card. However, the next player can only place a card of an animal (or animal life-cycle stage) that has the unique trait. Otherwise, they will need to draw a card from the draw pile.

We describe a program of research in which we leverage simple card games to promote comparisons that are relevant to learning about biological relations. This approach capitalizes on the structure of simple card games and the power of parent-child play. A number of popular card games involve simple relational rules. In War, the player with the higher card value wins the round. In Uno, a player may decide to play a card of the same number (or color) as their opponent's. In each round of gameplay, players have to compare the value (or values) of their card relative to their opponent's. By modifying the playing cards from suits with numbers to organisms at different stages of development (e.g., insect egg, larva, pupa, and adult), we can create simple card games in which child and adult players engage in comparisons relevant to understanding life science concepts (see Figure1). Furthermore, we expect that the familiar rules of simple card games will facilitate parental involvement, offering parents opportunities to provide helpful scaffolding in the context of parent-child play. For example, parents may produce spontaneous analogies that can help young children grasp biological relationships (Valle & Callanan, 2006).

Our presentation will describe our ongoing and future research in which we test "biologized" card games in museum settings. Ultimately, we seek to develop games that provide a fun, informal way to promote parent-child conversations that involve relational reasoning about life science.

Assessing the Influence of Toys/Games Intervention on Children's Foundational Literacy and Numeracy Abilities

Harshul B Brahmbhatt, Children's University, Gandhinagar, Gujarat, India

Purpose statement: In India, early childhood education is primarily based on a teacher-led direct instruction approach, lacking a focus on independent development among children. However, the NEP 2020 mandates the integration of play-based learning to teach Foundational Literacy and Numeracy, presenting implementation challenges in the school environment.

Our recent survey of primary teachers unveiled that the fear of chaos and a perceived inability to maintain discipline were the main reasons for avoiding play-centric or toy-based pedagogy. Teachers prioritise order over play-based learning, expressing concerns that play lacks educational value and hinders knowledge acquisition. The struggle to select suitable games, toys, and activities for the classroom results in limited learning outcomes. Consequently, teachers remain hesitant to promote play in classrooms.

The study aimed to enhance children's mathematical and literacy skills through toy/game-based interventions. Workshops organised by the principal investigator included activities like arranging numbers and reading passages. These engaging interventions utilised games such as Housie/Bingo, musical numbers, Chatterbox, riddles, and story cards.

In line with the National Educational Policy 2020, grade 3 is a critical transitional stage where students should possess foundational skills by age 8. However, many students lack these skills. This study addresses the issue by focusing on grades 2 and 3 students in Gandhinagar, Gujarat.

Description of methodology: The study comprised two distinct groups. The first group consisted of 26 grade 2 students from a government school, who received a daily 2-hour toy/game-based intervention over 7 days. The second group consisted of 20 students from grades 2 and 3, participating in an 8-day summer workshop outside of school, incorporating toys, games, and activities. Subsequently, the children's foundational literacy and numeracy skills were evaluated to gauge the effectiveness of the interventions.

Data: The data for this study was gathered by assessing the children's foundational literacy and numeracy skills. The study participants were assigned specific tasks, and their responses were used to conduct the assessment, enabling a comprehensive evaluation of their abilities in these fundamental areas.

Results: This study revealed an undeniable influence of toy/game interventions on children's foundational literacy and numeracy abilities. After the interventions, significant improvements were observed in both groups under examination, with more students demonstrating proficiency in the skills for the first time and others enhancing their existing proficiency levels. Intriguingly, the first group exhibited a higher proportion of students achieving proficiency in the skill of reading numbers in words.

"MORE THAN JUST PLAYING WITH BLOCKS:" EXAMINING YOUNG CHILDREN'S PLAY TYPES AND DURATION WITH LOOSE PARTS AND ITS RELATIONSHIP TO COGNITIVE DEVELOPMENT

Ozlem Cankaya, MacEwan University, Edmonton, Alberta, Canada;
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Loose parts play is defined as children's play with open-ended, natural (e.g., sand, sticks, leaves), or manufactured materials (e.g., cardboard, pipes, beads) not originally intended for play. Ninety percent of young children's indoor play involves toys and materials, and loose parts present children with infinite opportunities to combine, create, manipulate, and symbolically transform materials, which invites children to creatively explore new ideas and combinations. Loose parts play can be complex and categorized in many ways (e.g., cooperative, solitary, parallel, pretend, constructive, and exploratory play). Loose parts play is unique because children can simultaneously combine different play types, ideas, storylines, and objects. Early learning and childcare communities across the globe widely incorporate loose parts for their perceived high-quality play opportunities supporting children's development. Yet, despite widespread acceptance of its benefits, there is a dearth of research on these materials' effects on children's indoor play quality. In a pre-experimental within-subjects design incorporating qualitative and quantitative data collection and analyses, we recruited 42 4- to 5-year-old children. Their indoor play behaviours were observed in two unstructured play sessions either with (I) open-ended materials (experimental condition; i.e., loose parts) or (II) single-/limited-purpose toys (control condition; i.e., percussion instruments) to identify children's play types and duration. We also administered a cognitive development measure (i.e., Wechsler Preschool and Primary Scale of Intelligence) and the head, shoulders, knees and toes (HTKS) task to measure executive functioning. The cognitive measure is used as a control to inform us about children's verbal intelligence, executive functioning, language, and general cognitive functioning during play. Our preliminary analyses revealed that children played with loose parts (experimental condition) significantly longer than single-/limited-purpose toys (control condition), as expected. In the experimental condition with loose parts, children were most frequently involved in constructive and dramatic play with loose parts, compared to exploratory play in the control condition with the single-/limited-purpose toys. Our discussion will focus on the factors that impact children's play and play complexity with loose parts, such as executive function, age, home language, parental education.

HOW PLAY WITH TOYS TEACH US ABOUT COGNITIVE DEVELOPMENT

Seung Heon Yoo & Karl S. Rosengren, University of Rochester, Rochester, NY, USA

Toys play an important role in children's lives. Toys are not just playful materials that bring joy and excitement to children, but also support children's motor development (e.g., grasping), creativity and imagination (e.g., as part of pretend play), and social development (e.g., sharing with peers). However, the role of toys does not end at fostering excitement and development in children. Children's interactions with toys have shed light on how children perceive and act toward the environment during their first few years of life. More specifically, researchers were able to get a better understanding of young children's perception of the world and what different types of objects (i.e., toys) afford for action. For instance, even though young children can distinguish between a child-sized chair and its miniature replica (e.g., choosing to sit on the chair rather than the replica), 18- to 30-month-old children, nonetheless, sometimes attempt to sit (unsuccessfully!) on a miniature replica toy (e.g., DeLoache, Uttal, & Rosengren, 2004). This behavior has been referred to as a "scale error." Evidence of children committing scale errors has been observed not only in laboratory settings, but also at homes (Ware, Uttal, a& DeLoache, 2010) and preschools (Rosengren, Gutierresz, & Schein, 2010). Another puzzling behavior that young children show is their inability to understand the relation between a room and its miniature toy replica (model room). When children are asked to find a hidden object in a room after showing the hidden place of the object on a model room, 30-month-old children generally are not able to find the object even though they remembered where it was hidden when asked to find it from the model room (e.g., DeLoache, 1987). Furthermore, children showed difficulty in finding the object in the room even when they were first provided with an opportunity to get accustomed with the model room by playing with it (DeLoache, 2000). So, observations of children's interactions with toys have led researchers to realize the dynamic interplay of the environment, the individual child, and the task that children are trying to accomplish, and such observations have led to a better understanding of cognitive development. In this presentation, we plan to unpack the role of the environment, the individual child, and the child's actions to better understand how toys can help researchers' understanding of cognitive development.

Session 23. **Sustainability & Green Design**

THE GREENING OF THE TOY INDUSTRY: A STEP IN THE RIGHT DIRECTION
Vicki Thomas, University of Northampton, Northampton, United Kingdom & Vicki Thomas Associates, London, United Kingdom

How is the toy industry responding to the environmental crisis? What steps are firms taking to respond and lead the change to more circular and restorative practices? What is the designers' role in the process? In the United Kingdom (UK) there have been several campaigns led by children, initiatives by educators and range changes proposed by retailers to alter the industry and citizens' behaviour. This paper explores the possible impact of these changes both in the UK and to practices globally.

The methodology used in this research is both historical and ethnographic. A series of initiatives have been explored through participant observation, semi-structure interviews and literature reviews. Historically, this paper builds on previous research into the toy industry when companies and designers adopted plastics in toy production in the 1950s. It looks in part at how the changes made post war, are now being reversed or evolving alongside the digital revolution.

The research has been undertaken in collaboration: with the Centre for Sustainable Futures at the University of Northampton, Products of Change (leading sustainability in the licensing industry), Wastebuster (projects with schools), and Vicki Thomas Associates (design consultancy). The toy companies' approaches vary from Lego looking at packaging supply chains to Big Jigs' challenges to source sustainable production globally. Efforts are being made to design toys for recycling and develop the infrastructure to make a circular system possible.

The conclusions are provisional and reflective. The initial research indicates that some efforts to use sustainable materials, such as using water bottles to produce soft toys or recycled aluminium, may not provide long term solutions. There is an effort to start with packaging but the toy itself often remains difficult or uneconomic to recycle. The changes are being made outside in the industry itself, in waste collection and material processing. For some, the solution is to use natural materials and the use of found objects as playthings. Yet, work with National Parks, has shown we must work with nature and create restorative play spaces and practices.

Toys should be designed with the circular economy in mind and the next project should be to create new toy design guidelines. Alongside sustainable design, the necessary infrastructure should be place, to encourage not only recycling but also reuse. Collaboration is occurring that may lead to more circular and restorative toy production.

TOYS AND ENVIRONMENTALLY SENSITIVE DESIGN

Mark Allen, SFRL, Woking, United Kingdom

Other than toys which become collector's items, the vast majority of mass-produced toys in the UK face an EoL (End-of-Life) scenario, as landfill. Plastic toys are estimated to account for 90% of the current toy market; however, most of these are unrecyclable. Studies have shown that second-hand toys could pose health risks to young children, as some old Lego blocks, dolls and toy cars were found to contain materials which fail modern toy safety guidelines.

The introduction of plastics post-Second World War revolutionised industry by affording mass produced, low-cost, complex objects in practically every sphere of life. However, the question still remains, what happens to toys at EoL and could novel design, manufacturing processes and material sciences mitigate the impact of plastic waste, embedded electronics and batteries?

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).

Traditionally, parts recovery required manual disassembly to separate the components into plastics, metals and electronics, which is time consuming and only economically viable in high value goods. Research into Active Disassembly technologies initially focussed on SMAs (Shape Memory Alloys) and SMPs (Shape Memory Polymers). While these materials produced the desired mechanical effects they tended to be exotic materials, costly, and mechanically unsuitable for use in everyday products, like toys. Subsequent research into the shape memory affect of standard engineering polymers which are familiar to toy manufacturers, and consequently have advantages over SMPs in cost, availability, operating temperatures, and no specialist moulding knowledge required and the recycled plastics homogenised (not mixed with exotic materials).

In the UK there is little short-term motivation for manufacturers to adopt radical designs and technologies, especially considering the lack of legislative drivers. The European Union RoHS Directive (Restriction of Hazardous Substances) was expanded in 2013 to include toys and is closely linked to WEEE (Waste Electrical and Electronic Equipment) which sets targets addressing the problem of toxic electronic waste.

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. Novel design, inclusion of innovative manufacture, and material science knowledge may be building blocks, on which the toy industry could build, to ensure a healthy environment for future generations.

INFLUENCING THE FUTURE OF SUSTAINABLE TOYS

Ron Asbach & Tim Trapp, Fisher-Price, East Aurora, NY USA

In recent years, there has been a growing demand for more sustainable toys. Parents are looking for toys that are made from safe, non-toxic materials that are designed to last, while being better for the environment. To meet these evolving needs and wants of consumers, the materials, manufacturing processes and business models of the toy industry will need to evolve.

In this presentation, Ron Asbach, Principal Engineer, and Tim Trapp, Director of Quality Engineering, will share what we're learning through Mattel's toy takeback pilot program, PlayBack, and how global quality and safety programs might influence the toy and adjacent industries.

Session 25. **Toy Design Pedagogy**

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DESIGN FOR PLAY: EDUCATING TOY DESIGNERS OF THE FUTURE
Karen Feder, Design School Kolding, Kolding, Denmark

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The world's first international Design for Play Master's Program recognizes that understanding of play is a prerequisite for producing high quality toy design. The curriculum is based on research within play and toy design and qualified through dialogue with institutions around the world and in collaboration with experienced toy design companies. The two-year program offers different courses, all designed to teach students to create inspiring toys, which support positive play experiences. The students come from all over the world with backgrounds in Industrial Design, Communication Design, Textile Design, Fashion Design, and Accessory Design, and collaborate across disciplines. In most of the courses they collaborate with companies, organizations and other design schools. They complete relevant company internships as well as mentorships with professional toy designers, and their Master's project is developed in collaboration with an external partner. All of this to guarantee that their skills and competencies are relevant for companies, users and the world in general. After graduation, the new designers usually find employment in international toy design companies and diverse organizations such as design studios, museums, hospitals, NGOs, municipalities, and universities. Here, they contribute with their knowledges and skills to design for new, innovative toys and playful experiences. Since 2019 the Design for Play Master's Programme has educated 20-25 play designers per year. It is now so well-established and acknowledged that more and more companies are advertising specifically for 'play designers' to get the strong combination of play and toy design. If we want high quality toy design in the future, with a strong play value and relevance for its users, it is crucial to invest in the education of toy designers. We cannot expect either consumers, companies or the designers themselves to be able to ensure the progress and innovation it requires to drive the entire development of toy design of the future. With their independency and critical sense, design schools and universities can play an important role here, by exploring and studying possible futures, pushing the boundaries by experimenting with new concepts, contexts and scenarios. But we cannot do it alone - we need the industry to play along, take chances and invest in the potentials, by inviting students, design teachers and researchers in to the collaboration on educating toy designers of the future.

CARDBOARD TOYS: AN APPROACH TO DESIGNING SHORT-LIVED PLAYTHINGS WITH STUDENTS

Jesper Falck Legaard, Design School Kolding, Kolding, Denmark
Katriina Heljakka, University of Turku, Pori, Finland

Many toys have a short lifespan due to the requirement to be age appropriate. This means that toys either need to be reused or discarded in environmentally responsible manners. In this study we explored the possibilities of using cardboard and similar sustainable materials in the production of short-lived toys, also considering the resulting play value of the objects.

We used an exploratory and cross-disciplinary approach interested in toy design conducted with students of higher education coming from two different areas—industrial design and humanities. Further, the study undertaken involved students from two countries partaking simultaneously in courses focusing on play design. The study involved a class of 18 students from Design School Kolding in Denmark and a class of 8 students from University of Turku in Finland.

The two researchers responsible for teaching the courses facilitated similar tasks for the two groups of students, who were asked to develop ideas for toy design by using card board materials, employing the Comicubes design method and prototyping tool. The students were asked to consider the play value of the created objects from the perspectives of the intended users.

During the two courses, students were introduced to classical theories on play and more novel ones on object play (Smith, 2010), i.e., toy play, with a particular focus on concepts such as the CRISPI model on immersive play experiences (Legaard, 2022) and the Dimensions of the play experience framework (Heljakka, 2018).

The students participated in evaluating and discussing their design work in an online session as part of the two courses, aiming to enable playful learning, international collaboration and to increase learning opportunities among students of different nationalities.

The questions under scrutiny focused on the materiality, mechanics and play value of the newly designed toys. Through an analysis of the students' design work, supported by reflective interview sessions with the students, we aimed to answer: 1. How students perceived the play value of short-lived playthings based on paper/cardboard technology they have designed themselves, and 2. How the new designs were aligned with ideas presented in recent research on sustainability in toys (e.g., Fousteri & Liamadis 2021; Heljakka 2022).

Finally, to understand the value of designing course work of this kind, we asked the students in the two countries how they perceived the international and cross-disciplinary learning experience, leading to a set of recommended principles for enabling international, cross-disciplinary collaboration.

STIMULATING ETHICAL AWARENESS IN TOY DESIGN STUDENTS THROUGH A PLAYFUL EXERCISE

Mathieu Gielen, Delft University of Technology, Delft, Netherlands
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Students in toy design can have difficulty in bridging the gap between theoretical knowledge and application in design (e.g., van Leeuwen, Gielen and Westwood, 2012). The purpose of this study was to explore how to bridge this gap in the domain of 'toy ethics' through the question: how can ethical awareness be effectively integrated into the learning experience of toy design students? With this work, we hope to impact the level of ethical reflection and ethical action of (future) toy designers.

The research was conducted within a master-level toy design course, through a two-hour module that combined theory with a hands-on exercise and reflection. The module began with a lecture on toys and their potential to embody values in domains such as ecology, gender identity, and violence. Students then participated in what we call an "ethics dial" game, where they were asked to argue either for or against a certain ethical stance in toy design – and repeatedly flip and radicalize their arguments following a 'dial' operated by a fellow student. After the game, students were asked to write a 300-word mini-essay reflecting on their learning experience and how they plan to apply this learning in their design work.

Through a thematic analysis of the 18 students' mini-essays, four approaches to ethics in toy design were identified:
1. leaving the ethical appreciation process open for the end user,
2. promoting the personal ethical perspective of the designer,
3. avoiding any content deemed ethically controversial, and
4. following the supposed ethical perspective of consumers.

These approaches can be grouped into two dimensions: the open/closed dimension reflects whether the moral appreciation is open to be explored by an end user or pre-determined through the design, while the pro-active/reactive dimension reflects whether the designers' or end-users' (supposed) values are driving the ethical decision-making process.

Some students reported that the "ethics dial" game was helpful in the learning process because its play frame 'liberated' them: It allowed them freedom to explore radical and opposing ethical stances. This suggests that incorporating this hands-on playful exercise which allows for personal experience before reflection can contribute to higher levels of learning, as defined by Bloom's taxonomy of learning (Bloom, 1956; Anderson et al., 2001). As students' design outcomes become available later this year, the practice of applying the above-mentioned approaches in these designs will be considered.

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