



HAL
open science

The Greening of the Toy Industry

Vicki Thomas

► **To cite this version:**

Vicki Thomas. The Greening of the Toy Industry. 9th International Toy Research Association World Conference Toys Matter: The Power of Playthings, Aug 2023, Rochester, United States. hal-04632871

HAL Id: hal-04632871

<https://hal.science/hal-04632871v1>

Submitted on 2 Jul 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

The Greening of the Toy Industry

A Step in the Right Direction

Vicki Thomas

*Vicki Thomas Associates, London UK. Sustainable Futures Research Center,
Northampton UK*

Abstract

Producing toys and playthings that are sustainable is a challenge facing us all. In the UK tentative steps are being taken by individual firms, designers, and educators. Researching as both an academic and design consultant, enabled the author to interview and observe those trying to make change in the toy sector and shift to more sustainable practices. The paper looks at the introduction of new materials in the past and present and the challenges involved. It picks up on voices trying change attitudes and behavior. The solutions seem to lie beyond one industry and actions need to be taken across sectors and continents. The conclusions point to the key role of organizations like Products of Change, that enable diverse industry sectors to collaborate and work towards more sustainable practices.

Keywords : Sustainability, toys, materials, design, licensing, recycling, stories.

Ten years ago, as an academic team at the University of Northampton (UoN), in the heart of the United Kingdom (UK), we worked with several local toy and play organizations. We found that Product Design students were often more creative when tackling play related briefs. We had learnt from local historical research that much of the plastic innovation during the 1950-60s in UK toy manufacturing had happened in the region. These new plastic materials and machine tools changed toy design and production fundamentally. (Schaber et al. 2010; Thomas 2013; Thomas 2016a)

The Fisher Price Museum in Aurora tells a very familiar story about the change from wooden toy production to plastics, as experienced in the UK after WWII (Thomas, 2016a). Similar positive benefits of the new materials were understood by producers and consumers. Firms like Lego, seeking to move from wood to plastic production, came to the Britain to seek new machine tools and expertise. The

machine tools for the injection and rotary molding of plastics, developed by John Orme in the East Midlands were exported worldwide, allowing playthings like plastic footballs, to be available globally (Thomas, 2016a).

For some plastic pioneers like Hilary Page (1953) these new materials allowed children to learn through play in a safer and more affordable way. An infant's development was at the fore, with child psychology being applied to toy design. This focus on nursery products linked to child development started to be the focus at Fisher Price too as they developed plastic production. In the UK some firms and critics considered plastic toys *cheap and nasty* when compared with more traditional wood and metal items. Oral histories (Victoria & Albert Museum, 2013) about the industry in this period, also reflect the debates at the time (e.g., Barthes, 1993 [1957]) around what was considered a *good* toy. Wooden toys were considered superior. Nevertheless, firms like Lego and Fisher Price embraced child psychology and the new plastic materials to produce educational toys at an affordable price. The longevity of these playthings and the continuing success of the brands, indicates the success of these innovations with the public.

Methodology

The use of plastics in the toy industry is being challenged again as part of the wider environmental crisis. They are made from finite fossil fuels and easily pollute our planet. This paper looks at some of the steps being taken towards sustainability, attempts to turn back the clock in order to consider the best next steps. It draws on historical methods and desk research but also on semi-structured interviews undertaken at UK trade shows and electronically with senior executives. Many spokespersons from larger companies like Mattel and Lego are seeking to showcase their in-house research and share initiatives and challenges. They are active at conferences and on-line forums, such as ITRA and Sustainability in Licensing Conference (SILC) organised by POC.

The method is also participant and practice-based research. As a design consultancy we are seeking to design more sustainable ranges. So, the research methodology also uses ethnographic techniques linked to design thinking (Brown, 2009; Cross, 2011). Toys are seen as part of a wider reciprocal exchange process. Vicki Thomas Associates (VTA) has specialized in designing gifts. It takes at its starting place, the work of Marcel Mauss' (1954 [1925]) *The Gift* – with its analysis of gift exchange. The gift exchange process was commercialized 1850-1880s and 1950-1980s and items like toys were designed and marketed as gifts (Thomas, 1984). Innovations

of rubber playthings in Europe came in the 1800s and plastic in toys in the 20th century.

Mauss' analysis of gift exchange argues that it is a social process found in all cultures and an important part of understanding the role of toys in culture (Sutton-Smith, 1986). Huizinga (1998 [1938]), Sutton-Smith (1986) and Nachmanovitch (1990) also sees *play* as a similar social process that is common to all cultures and societies. We are increasingly being asked to design toys that consider the social, to make playthings that are more inclusive and multi-cultural, and to address global environmental concerns. These issues are often summed up in commercial project briefs like the United Nations Sustainable Development Goals (United Nations, 2015).

The research for this paper draws on commercial experience and observation of business practice as a consultant and design historian. Most toys are purchased by adults to give joy to children. They wish to pass on knowledge and experience by sharing what they enjoyed and valued. They also seek things keep children engaged and occupied. More than one toy company representative said (Schaber et al., 2010) that they do not budget for market research with children because it is ultimately the adult that is the purchaser. Others like Fisher Price, invest in large amounts of observational research, especially with babies and preschoolers (personal communication, 2023). Child psychologists, development specialists and educators are diligent in selecting items that are purchased for use in public places, nurseries, and schools. Amanda Gummer publishes the *Good Toy Guide* to offer advice to parents and retail buyers that is "Tested by children endorsed by experts" (Good Toy Guide, 2023).

Children are also affected by screen use and the fads of the playground. The power of media and in particular the role of licensing by publishing film, television, and games companies (Fleming, 1996), is vital to understand. During a conversation with an American Art Licensing Agent at Brand License Europe (BLE), it was reported that it is increasing difficult to establish new children's characters as they need to have a presence on social and traditional media channels.

Although children do choose to pick up and play with the toys, it is the adult view of sustainability which leads to a *greener* purchase. The onus in the research methodology is historical, practice based and observational studying the adult's view – as designer, manufacturer, distributor, licensor, commercial buyer, specifier, or parent and how they are responding to environment challenges.

Toy Design Education

In UK design schools, toy design briefs are included in Product Design courses, often only as one brief over a three-year course (Thomas, 2016b). There has been a shift to focusing design for mass plastic production, using computer-aided design software. The trend has been for students to propose app linked toys.

Product students are learning coding for apps but often without a grounding in graphic design. Graphics and illustration courses can develop good visualization techniques and prepare students to work with branding, licensed properties, and characters. As a result, some of the knowledge and design skills needed for traditional, more sustainable toys have been lost and they can lack engineering design skills and knowledge of materials required for sustainable toy production.

The character and story can be paramount. Toy Design education is not necessarily the same internationally. Some courses are more focused on toy design, especially where there is a demand from local producers and media content companies, such as Hong Kong, elsewhere in Europe, USA, and Far East. Nene College (predecessor to UoN) did train designers, who worked at local firms like Mettoy but that ceased when focus shifted to toy distribution in the 1970s.

Wooden and soft toys are considered craft rather than product design and often only when linked to specific clients such as hospitals. Each year at New Designers a graduate exhibition held in London, one can see old toy concepts reworked to respond to current social concerns, such special needs or dementia. They are *good* for the user in a second way.

These therapeutic benefits have a long history in the UK. At the London College of Furniture (LCF) staff were employed with an expertise in designing for users with a disability or creating educational toys. Designers, like Roger Limbrick and John Gould, looked to European toy design approaches for inspiration. John Gould had set up his own small-scale toy production selling to firms like Heals in the 1960s. He was involved with the introduction of toy libraries allowing more families access to quality toys.

As a design consultancy in 1993, we were asked to design playthings as part of licensed and retail own-brand ranges. Few UK design graduates seemed to be prepared with the right skills. So, looked for expertise and training in toy design at LCF. Later, there was an opportunity to contribute the training to the Product Design course at the UoN. Although, employed to teach theory I was encouraged to contribute her practical toy design experience.

UoN students worked with outside organizations including charities, such as Sue Ryder, a foundation providing support for those living with a life-limiting illness or grief; local toy distributors, manufacturers, trade bodies. (Schaber et al., 2010). Alongside, live projects, the course team developed a materials library, introduced discussions on ethics, cross-cultural design, and environmental issues across the Product Design curriculum. In summary, toy design education is becoming more aware of sustainability issues.

Licensing Stories

At the VTA we continued to work in the licensing sector often with heritage based intellectual properties. We represented the estates of illustrators such as Mabel Lucie Attwell (Thomas, 2013) or George Studdy (Babb and Owen, 1988). Mabel's creations, like her cute children or Studdy's Bonzo the Dog, were created to appeal to adults initially and *later* adapted for children. Bonzo first appeared as a magazine cartoon in the 1920s at his popularity generated licensed toys and merchandise from the outset. Licensing allows the imagery and messages to be reused and recycled and for stories to be shared across generations.

We later represented textile collections – The Quilters' Guild of the British Isles. Craft skills, handwork, and the reuse of textiles, were at the core of the product and their licensing narrative. As with wooden toys, off cuts or production line waste fabrics had been used in doll-making. These were replaced by synthetic fabrics. For the consumer, first rayon, then nylon and polyester, provided affordable and easy-care fashion. The new fabrics were taken up in soft toys and dolls clothing manufacturing (Thomas, 2016a). The introduction of fashion dolls like *Barbie* and *Cindy* parallels the rise of ready-to-wear and teenage fashion made possible by use of synthetic materials.

More recently, we have been working with tourism sites, like London's St. Pancras Station, Shrewsbury Abbey, and the UK National Parks. They all required sustainable and locally manufactured toys for their gift shops and education activities. We consider the family visitor's perspective and values regarding the benefits of play to education, community, health, and creativity. A heritage site's location and their legacy story are key. We designed virtual reality apps so that children could be citizen scientists. They had to be playful and sustainable, the requirement to produce sustainable play is not just the remit of the toy companies.

Seeking to Collaborate

Fox Puzzles of London Ltd. had been producing wooden tray puzzles for the educational market and were trying to break into the heritage sector (i.e., arts and cultural organizations). They moved their China production to India, where they worked with local toy makers and introduced them to laser cutting and helped them to adapt natural stains to meet international toy standards.

They were typical of smaller importers and charity retailers, who we have observed shifting production to work closely with specific communities abroad and upscale traditional craft production. Often their stated aim is to produce toys that are *fair trade*, like coffee or chocolate. They aim at ethically, socially, and sustainably produced toys. *Good* toys in a third way. Lanka Kade and Best Years are further examples of companies with a social message for trade buyers. Their handmade toys appeal to church groups, charities, heritage outlets and educational catalogues.

How are bigger toy companies and distributors responding to the environmental crisis? Ten years ago, toys were being developed with an appreciation of the issues. An eco-dolls house distributed by DKL Marketing, featured in the All Work No Play Exhibition (Thomas, 2013) but it did not sell well beyond educational settings. The green message was important in the classroom, but the eco-house did not replace *home* a traditional dolls house.

We observed that National Geographic Magazine, was able to actively license its brand to a wide range of toy companies. Others signed BBC licenses agreements linked to the David Attenborough's natural history series. By 2019, UK National Park were an alternative to the National Geographic, as that property became part of the Disney licensing program. The smaller jigsaw companies we spoke to simply could not sign the Disney license with large advances and minimums. A *green* brand license seemed an entry-level or quick fix to make a toy greener.

Helena Mansell-Stopher, one of those who had been involved with the National Geographic's Licensing program, she went on to found Products of Change (POC):

to support, encourage and perpetuate companies and brands in meeting their sustainability goals through educating to inform change and peer-to-peer networking. This members' organization because of its strong licensing industry links has active members from major toy company and retailers. (POC, 2023)

POC was created as a forum for discussion, between licensors (larger media firms and publishers), toy manufacturers and retailers. Collaboration seems key.

Use of Alternative Materials

Ken Garland's account (2012) of toy production at Galt in the 1950-60s, tells the story of how Galt started producing high quality educational toys *for families* to buy. Wood was preferable to plastic. Plywood was an option for volume production. This in turn became too costly. Many producers moved to plastic, but Galt started to produce in cardboard. Yet, cardboard products have different play values and longevity. They were considered disposable.

Today, toy firms like Bigjigs who produce and distribute wooden toys, reported in an interview how they have been responding to the environmental issues by ensuring that the timbers they source for production are sustainable (personal communication, 2023). Beech can be replaced by rubber wood a byproduct of plantations in some regions. Legislation regarding the origin of all timbers means that Forest Stewardship Council (FSC) certifications are required. The onus is on all toy companies using wood, to show they have sourced sustainable raw materials. This can require a strong commitment in time and administration.

Bigjigs have created ranges of toys using suppliers based in the Far East and China. They often bought in or took on the distribution of toys, made of greener materials such as spent milk jugs (Green Toys), silicon (now a Bigjigs own brand of beach toys) and cardboard (Tiger Tribe). Toys, made from beech wood, are still required by some customers. They bought and dried it in Eastern Europe before exporting it to trusted partners in China. Yet, even with these steps toward more sustainable practices, toy companies find themselves still asking, "What of the carbon footprint involved?"

Wood can be sourced in the Far East, but the certifications, registrations and translations must be checked repeatedly to ensure compliance to the FSC standard. It is not a one-off process and requires continual monitoring of factory registrations to ensure compliance. Covid and the onset Ukraine War has made wooden toy production process much harder. Sustainability and maintaining compliance to the recognized standards means that wooden toys will become more expensive.

Trees take time to grow. Plantations of trees do not provide biodiversity of a natural woodland. Large areas of forest are prone to wildfires linked to global warming. Trees are vital to reduce carbon in the atmosphere, so existing woodlands need to be managed using coppicing and pollarding, to produce natural raw materials, but not kill the tree. Making a shift from plastic to wood and cardboard is problematic.

Playpress produced a range of cardboard construction toys in 2018 including an Eco-house. They considered rebranding it as National Park Ranger's house. They did not need to as they had a full order book from for tourism, heritage, and leisure centers. They asked the Consultancy to create a new collection of toys for castles and cathedrals. Covid only increased demand, as indoor activities and educational toys were attractive to locked-in families.

In parallel, the National Parks were overrun by visitors as the public was encouraged to exercise and meet in open spaces. Suddenly, encouraging visitors to the Parks through licensing programs was not sustainable. Income generated away from the Parks was welcomed but their own focus was on saving the Parks for future generations.

A license agreement for maps with Harper Collins was acceptable. Yet, wood pulp for paper is not cheap, the costs of printing and shipping are rising. Fewer picture books are published, his confirms the account, of the American Art Licensing Agent that said new illustrated children's properties are increasingly difficult to license.

Lego has worked hard to retain their educational and creativity credentials through a focus on play. Alongside this creative message they have also embraced licensed merchandise. In 2022, their design teams told us about sustainability and the challenges they face. Redesigning and minimizing their packaging seemed to be the starting place for their own toys, but they were also asking their licensees to be more sustainable in their choice of materials.

Changes in legislation on packaging, aimed at the supermarkets, has also been making a difference. The box, dubbed the *silent salesman* by Pilditch (1961), is key. Toys need shelf appeal (Thomas, 2017) and the sales message must be conveyed in a more sustainable way. It must look, and use, less plastic.

There is no international standard labelling process for bio-based or recycled plastics. Every visitor to the London Toy Fair in January 2023 was given an electric car model produced by a Dutch company, BioBuddi. The car was made of 85% sugar cane waste. Growing of sugar cane is criticized as it can be grown on rainforest cleared land. Even as a food crop it is seen as unacceptable as too much sugar is considered unhealthy. So, cane waste is problematic (Pavid, 2021).

The drive by major retailers means that there is a demand from sustainable materials across the plastics and packaging industry. For many firms like Lego packaging seems the entry point. They are encouraging reuse and exploring routes to circularity and sharing their journey at events like the Sustainability in Licensing

Conferences (SILC) organized by POC.

RECOUP (2023), issued a report of their findings from their analysis of the materials and recyclability of seven toys complete in their mint condition packaging. They concluded that the recycling of non-electronic toys is problematic because the toys examined used mixed polymer types, and contamination from dyes, paints, and metal components. But how many toys enter the waste stream in this way, only those disposed of as part of product recalls, stock clearances, or damaged stock? Generally, toys and their packaging are soon parted (often becoming separate playthings). As packaging has been a focus of campaigns and legislation and any information about the toy's inside and how it can be handled by waste processing systems (Recoup, 2023) may only be on the box. Often the vital information about the toy's recyclability goes in the bin with the packaging.

Firms at the London Toy Fairs in 2022-23 promoted their change to green production by showcasing their shift in production to recycled plastics. Several highlighted taking plastic water bottles and converting them into plush and soft toys. The marketing of water in plastic bottle is a new practice. Now refillable are being designed to appeal to children and water fountains are being reintroduced as *free refill stations*. Plastic water bottles are being recycled into more water bottles rather than toys. Recycled materials can be in short supply.

Trapp and Asbach (2023) provided examples of the challenges of using recycled plastics. The purity of the material could not easily be assured particularly regarding its chemical composition. The plastics materials are altered by the recycling process, so that the finished molded products might not be as strong, safe, and long lasting. Safety legislation is inconsistent internationally but also even within the United States. At Fisher Price children's toy safety seemed to be an immediate priority rather than wider environmental concerns for which they have less control. Fisher Price has produced greener alternatives to a standard product. They found that public are not making an active choice to buy greener toys. They gave the example of a stacking toy, which they produced in a sustainable plastic. It did not sell well, even when they tried to hold the price, against the oil-based plastic alternative (by removing a hidden rattle element). Sustainable products need to sell.

Recycling Toys

The plush toys themselves do not seem to have an easy recycling route. All the Paddington Bears placed with flowers, as a farewell to Queen Elizabeth II, were all

duly washed and re-given. This washing process also pollutes introducing microplastics to the wastewater stream. Who is going to refurbish the bulk of soft toys in this way or turn the soft toys back into raw materials for toy production? The European Union Toy standards and some US States require new materials – rather than recycled materials be used, especially for soft toy stuffing. How does one define new and clean?

Wastebusters is an organization, that has established a free environmental education program for schools, with a focus on waste, resources, and sustainable consumption. They generated a partnership with POC, RECOUP and other industry partners to run the very successful *Recycle to Read* campaign. School children were encouraged to bring toys to school for recycling. The money generated was used, to build up book stocks for their school libraries: “From promoting reuse, developing recycling infrastructure for hard plastic toys and plush, with a research and knowledge sharing pillar supporting producers/ brands to improve toy recyclability and wider circularity/ sustainability”(personal communication, 2023).

It sounds a real positive initiative with 24,000 schools internationally and over 17,800 in the UK: “Wastebusters with a unique opportunity to use toy reuse and recycling to engage children and families in learning about the circular economy in a fun and relatable way”(personal communication, 2023).

As outlined in the RECOUP report (2023), toys are not routinely collected in the UK and there no established recycling systems. Wastebusters have had to build partnerships with recyclers. They have faced problems. First, the materials in many toys are cheap and not a valuable waste resource. So, they found accepting electronic items helped make the process viable. Second, toys need to be sorted far more, than say packaging. Some are better cleaned and reused. Larger children’s vehicles are often removed at the recycling center and sold on site. Some toys already passed on between generations, are later thrown in the recycling bins. They came from a different production era when little thought was given on how they might be broken down into component parts. Fisher Price had run a project taking back their toys and faced a very similar dilemma with old toys. Third, the Wastebusters’ partners learnt there was a need to consider the mix of materials used and the actual design of toys needs review. The report highlighted how small parts – like dolls shoes – are simply too small to be collected by machinery. The *Recycle to Read* program work is developing:

A 19-store supermarket broken hard plastic toy recycling trial prior to expansion to ~500 stores with a single retail partner in 2024, putting hard plastic toy recycling in easy reach of the majority of UK families, with interest in replication in other retail

chains – with book rewards for schools based on citizen participation (personal communication, 2023).

Partners, like Golden Bear, producing toys out a mix of materials are keen to collaborate and share information with others as a member of POC. They are working through their ranges to move to more sustainable products and packaging. Plastic ties are being replaced by paper and Golden Bear are demanding their manufacturers in the Far East use more sustainable materials.

In the UK organizations are taking steps forward from paying royalties for an environmentally conscious brand licensees and to building collaborations across the industry.

Learning from Past Innovations

In 2020 the owner of Fox Puzzles contacted UoN. He was advising the inventors of a new type of plastic made from rice husks, branded The Incredible Husk. The material was developed in Malaysia, from waste normally burnt in the field causing air pollution. A process was patented to turn rice husks into a food safe plastic to replace melamine. It was developed further so that it could be used in toy production by specifically adapting it for injection molding. The material they claimed is bio-degradable and could act as a fertilizer. It is one of several bioplastics using bamboo, sugar cane, seaweed, and starch. Here, the added value was that the crop waste was not burnt. It was also argued rice is not grown on rain forest land cleared for cultivation – like sugar cane or palm oil production. The Incredible Husk team's proposal was to work with UoN to access research, product design and apply for Government funding. They were protective about their intellectual property, so working under non-disclosure agreements, they shared their innovation with Vice Chancellor and research leads.

The secrecy echoed earlier research undertaken on behalf of the Dunlop Archive project (Thomas, 1983). The Dunlop research looked at insurance documents and Goad Insurance maps, showing early rubber and gutta percha factories in the UK in the 1800s. Innovators making toys and exploring these new materials copied the practice of indigenous communities in Brazil, playing bouncing balls and waterproofing. They experimented with imported rubber and the plants were grown at Kew and plantations established in Malaysia. Innovators like Thomas Hancock kept his masticator secret rather than patenting the process. This delayed, innovation by others. Charles Mackintosh worked instead with dangerous chemical

solutions, to make raw rubber workable as a coating for fabrics. In the end, these innovators collaborated. Mastication reduced the quantity of volatile solution required, making the mix less hazardous and easier to apply. Collaboration overcame secrecy.

Starting a collaboration between the UoN and Incredible Husk was not straight forward. The University did not have a specific sustainability research center dealing with the impacts of new materials and alternative technologies. The UoN stepped back from the partnership. Choosing instead to establish a new research center drawing on internal the toy design and environmental research expertise. The Sustainable Futures Research Centre was established in July 2022. The Incredible Husk was launched in January 2022, after they won The Green Apple innovation award.

The Sustainable Future Research Centre

UoN has research centers across the institution. There is a world leading Leather Institute, as Northampton is the home of the shoe industry. The rubber and gutta percha study (Thomas, 1983) describes how these materials were used by the leather producers and the same was true for oil-based plastics in the 1950-1960s the new plastics went into the production soles and uppers for shoes of all kinds. The tools for cutting leather cut fake fur for soft toys.

The Research Center's plan is to involve organizations and producers outside the UoN helping them with innovations and to better understand the commercial, social, and environmental impact of materials. Local businesses include toy distributors, engineering, footwear and accessories, construction firms, food processing and packaging.

To support the toy industry, it seemed vital to bring together key organizations and businesses. Pentatonic, POC, Wastebusters and the *Good Toy Guide* were already collaborating acting to the make the toy industry more sustainable. Wastebusters were keen to access product design expertise, to create a set of design guidelines. As the Centre was established another project PolyCe ended. One of the outcomes was a set of design guidelines had been produced for household electrical goods. PolyCe had Horizon 2020 European Union funding (Walters, 2021), and this provided a model for future collaboration with UoN.

Children's Voices

Pentatonic have a record of being called into work with individual brands. This specialist consultancy grew out of experience in the waste industry. Many designers, producers, retailers, and policy makers simply, do not have such an extensive knowledge or understanding of waste processing. One need only refer to the RECOUP report to understand that current curb side collections are not the way forward alone.

In 2019, two schoolgirls Ella and Caitlin McEwan, started an online petition to stop plastic toys being part kids' meals in fast food restaurants. Their campaign was picked up by the BBC (2019) series dealing with packaging waste, so this put pressure on both MacDonald's and Burger King. As a result, both companies changed their toy promotions in the UK, but Burger King reacted swiftly and stopped their offers. They asked Pentatonic to recycle their existing stock of plastic toys. They also offered to recycle any kids' meal toys that children still had at home by returning to them to their outlets. Pentatonic had the expertise in waste management, so were able to collect but to actively dismantle and recycle the plastic. As a result, they produced trays, embossed with play activities for use in their client's outlets:

Customers were incentivized to return toys through the offer of a free meal. Over 12 weeks, more than 300 tons of toys were recovered from the retail return program and the stock held by Burger King in their UK warehouses.

Pentatonic worked with logistics providers and recycling companies in the UK to sort and separate the toys using mechanical recycling techniques, recovering as much usable material as possible. Our design and engineering teams then worked with Burger King to look at the available materials and their respective performance properties to find useful solutions for reintroducing these materials as new products within the Burger King ecosystem (personal communication, 2023).

In 2018, at VTA, we pitched the idea of a *Park Life* children's magazine to D. C. Thomson, a major publisher of kids' comics. It would link to the National Parks sponsorship and licensing program. But the publishers responded that they were dependent on the backing of the magazine distributors to the major retailers. There was resistance from distributors as promotional cover toys are considered vital to generate sales. But in 2020, Skye Neville, a ten-year-old, made them think again by starting a petition to remove or replace toys on the front of their comic and children's magazine titles with more sustainable playthings (Neville & Neville, 2023). Retailers responded. Waitrose took a lead and worked with distributors. Now creative and

craft type items are appearing instead (not necessarily plastic free). Seymours a magazine distributor (member of POC met at SILC in 2022) working to develop guidance to support their sector and reduce plastic waste and transition to more circular practices in magazines.

In July 2023, the Young V&A opened and replaced the Museum of Childhood in London. It is now a space to inspire and generate creativity. It has chosen to exhibit the work designers experimenting in recycling and producing new playthings. These displays will encourage more young people to speak up. Play and creativity may increase the next generations voice on the crisis.

Greta Thunberg (2019) is certainly providing children with a role model for how to make a difference. Despite the idea that adults are the focus of marketing campaigns, the child can influence adult behavior, when it comes to sustainability.

Taking steps forward

The companies and organizations approached were overall open, interested, and willing to share their tentative steps towards sustainability. Others were more cautious and secretive because of the commercial competition, sometimes a sense moral superiority, or a fear of making mistakes.

The research indicates efforts are being made to move to use sustainable textile materials, such as using waste plastic water bottles to produce soft toys. But this may not provide a long-term solution. A process needs to be found working with the wider textile industry. The fashion industry is tackling issues such as regenerative crop growing, filtering for micro plastics, and setting up a new version of the *rag trade* to keep fabrics circulating for longer.

New bioplastics all have their advocates, but questions are raised about their long-term impact on the environment. The packaging is taking a lead, encouraged by supermarket chains and food producers. All are working under pressure from legislation to reduce single use plastics and still insure safe food distribution. The toy industry can benefit from the food safe materials.

There is nothing new in campaigns against waste and getting communities involved. The Women's Institutes in 1954: "Establish(ed) a campaign to preserve the countryside against desecration by litter of all kinds" (Payne, 2023). Known as *Keep Britain Tidy* it included educational guides for schools. Wastebusters initiatives are not new. Waste collection and sorting systems need to be improved and

standardized globally. Mattel are working to use plastic from river catchments where waste was not routinely collected and could be called *ocean bound*.

Often a plastic toy remains difficult or uneconomic to recycle. A circular economy model, just for toys may not work. Toys are manufactured way from their main markets. Shipping toy waste back to be made into new toys is not workable. It does not economic, practical, or environmental sense.

For some the preference is to use natural materials and encourage the use of found objects as playthings. Yet, as our work with National Parks has shown, we must work in partnership nature and create restorative play spaces and practices. Natural resources even flowers are limited. Our play must be in balance with nature.

Thinking about the difference and similarities between the introduction and use of new rubber materials of the 1850 and the oil-based plastics 1950. The sheer volume of toys made from the new plastic materials was not the only problem, but it was the notion of disposability, linked to with the relative cheapness of plastic toys: "The use-it-today, sling-it-tomorrow designs of our throwaway society". (Fiell and Fiell, 2019, p122)

Plastic toys could be used for promotions – in cereal packets, kids' meals, and magazine covers. Collecting was encouraged by the gift industries and licensing – not just one doll and accessories but a house full. A throw away culture was created. *The Waste Makers* – as described by Vance Packard (1960). Do we need so much?

Toys are still designed to be sold in volume. We do need new toy design standards. We need toys that are designed last, several users, which can easily be repaired, as well as ones that are easy to break apart and recycle. We possibly also need to revive and strengthen our toy libraries. These ideas are not new.

The initiatives and discussions instigated by POC, are generating change within licensing industries, that seems to be vital first step. Why? POC bring sectors together (Fairtlough, 2008) to discuss and share experience. The licensing crosses many consumer sectors: media/publishing organizations, fashion, retailers, gift, sport, heritage, brands, and toy companies. We need to move forward together.

A circular economic model developed in isolation appears unworkable. The global distances are too vast. Systems for recycled materials and sustainable natural resources can be created materials Waste from different industries can be processed together. Old toys do not need to be made into new toys.

Creating a narrative to inspire will be important. The licensing and media industries are linked to the creators of stories. The vision – from and for children, can be embedded into consumer merchandise, especially in our toys and playthings,

could help us *all* change our behavior and attitudes. Children are learning about the environment through play, and they may need to continue to lead and pester the adults. If we are all going to make that step change necessary, it needs collaboration by us all.

References

- Babb, P., and Owen, G. (1988). *Bonzo: The life and work of George Studdy*. Richard Dennis.
- Barthes, R., (1993 [1957]). *Mythologies*. Random House.
- British Broadcasting Company, (2019, July 8). Sisters petition MacDonald's and Burger King for plastic toy ban. <https://www.bbc.co.uk/news/uk-england-hampshire-49069522>
- Brown, T., (2009). *Change by design: How design thinking transforms organizations and inspires*. Harper Collins.
- Cross, N., (2011). *Design Thinking: Understand how designers think and work*. Bloomsbury Publishing.
- Culbertson, A. (2019, July 8). *Burger King removes all plastic toys from kids' meals - Sisters from Southampton prompted the fast-food chain to address its plastic use - and McDonalds will offer a swap system*. <https://news.sky.com/story/burger-king-removes-all-plastic-toys-from-kids-meals-11813599>
- Fairtlough, G., (2008). *No secrets! Innovation through openness*. Triarchy Press.
- Feill, C., and Feill, P. (2019). *100 ideas that changed design*. Laurence King Publishing.
- Fleming, D. (1996). *Powerplay: Toys as popular culture*. Manchester University Press.
- Garland, K. (2012). *Galy Tots the graphic work of Ken Garland+Associates for James Galt & Company from 1961-1981*. Pudkin Books.
- Gummer, A., (2023, July 15). *Good toy guide*. <https://www.goodplay-guide.com/good-toy-guide/>
- Huizinga, J., (1998 [1938]). *Homo ludens*, Routledge.
- Mauss, M. (1954 [1925]). *The gift: Forms and functions of exchange in archaic societies*. Routledge & Kegan Paul.
- Nachmanovitch, S., (1990). *Free play improvisation in life and art*. Penguin Putnam Inc.
- National Geographic, (2019, July 9). *Barbie and National Geographic announce global licensing agreement* <https://nationalgeographicpartners.com/2019/01/barbie-global-licensing-agreement/>

- Neville, S., & H. Neville, H., (2023, July 8). *Change organization*
<https://www.change.org/p/ken-murphy-stop-selling-comics-and-magazines-with-plastic-toys-in-your-tesco-stores>.
- Packard, V., (1960). *The waste makers*. David McKay.
- Page, H., (1953). *Playtime in the first five years*. George Allen Unwin.
- Pavid, K., (2021, July 31) *Sugar: A killer crop?* <https://www.nhm.ac.uk/discover/sugar-a-killer-crop.html>
- Payne, D., (2023, February 13). *Clothing this naked Earth: Politics and the planet*. [Exhibition]. London School of Economics, UK.
- Pilditch, J., (1961). *The silent salesman: How to develop packaging that sells*. B. T. Batsford.
- Products of Change, (2023, July 35). *Driving sustainable change together*
<https://www.productsofchange.com/about/>
- Recoup, (2023). *Researching the recyclability of plastic toys report*. Internal report. Recoup. Unpublished.
- Schaber, F., Thomas, V., and Turner, R., (2010). *Designing toys, gifts and games: Learning through knowledge transfer partnerships*, In A. Silva and R. Simoes (Eds.), *Handbook of Research on Trends in Product Development: Technological & Organizational Perspectives*. IGI Global.
- Sutton-Smith, B., (1986). *Toys as culture*. Gardner Press.
- Thomas, V., (1983). *India Rubber & Gutta Percha. New materials in Nineteenth Century Britain* Unpublished. Dunlop Archive Project.
- Thomas, V., (1984). *Gifts: The designers' role in the commercialization of gift exchange*. Royal College of Art/Victoria & Albert Museum: Unpublished.
- Thomas, V., (2013). *Mabel keeps calm and carries on. The wartime postcards of Mabel Lucie Attwell*. The History Press.
- Thomas, V. (2016a) *Playing in Northampton: Connecting past, present and future*. In M. M. Patte, and J. A. Sutterby, (Eds.) *Celebrating 40 years of play research: Reflecting on our past, exploring the present, & playing into the future*. Hamilton Books
- Thomas, V., (2016b). *Product design education: A journey?* - Conference Proceedings International Conference on Engineering & Product Design Education, Aalborg University, Denmark.
- Thomas, V., (2017). *The toy box – The changing semiotics of toy packaging*. In E. Zantides (Ed.), *Semiotics and visual communication II: Culture of seduction*. Cambridge Scholars Publishing.
- Thomas, V., and Schaber. F., (2013). *ALL work and no PLAY makes you a dull designer Exhibition Catalogue*. Northampton Design Research Group.

Thunberg, G., (2019). *No one is too small to make a difference*. Penguin Random House.

Trapp, T., and Asbach, R., (2023) *Influencing the future of sustainable toys*. Toys Matter: The Power of Playthings - 9th ITRA World Conference Rochester, NY USA.

United Nations, (2015, October 16). *The 17 sustainable development goals*.

<https://sdgs.un.org/goals>

Victoria & Albert Museum, (2013, April 25). *British toy making project*.

<http://www.museumofchildhood.org.uk/collections/british-toy-making-project>

Walters, A. et al., (2021). *Design for and from recycling - Practical guideline for designers*.

PolyCe. <https://www.polyce-project.eu/wp-content/uploads/2021/04/PolyCE-E-book-Circular-Design-Guidelines-2.pdf>