Lego and the System of Intellectual Property, 1955-2015

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Keywords

Lego, intellectual property, trade marks, patents, licensing

Abstract

This paper traces the ways in which Lego has deployed a range of intellectual property regimes since it first developed the Lego system of interlocking bricks in the mid-1950s, in an effort to exert commercial control over its brick and System of Play. With the bricks initially protected by patent, Lego has, at various times, used copyright, design, trade mark and trade secret laws in an attempt to prevent other firms from marketing competing interlocking bricks. As the patents have expired, Lego has moved from unitary forms of control over the brick, augmenting intellectual property law with more distributed mechanisms of control and governance. The paper describes how the law has influenced the broader evolution of the company, where a focus on engineering has broadened into branding, and then digital media.

Introduction

On 28 January 1958, a tiny company from a tiny country applied for a patent over a tiny plastic brick. The Lego brick,[1] that tiny block of plastic, has been produced in the tens of billions by the Lego factories since that time. It has been the basis of business school case studies and academic colloquia, it is the subject of any number of breathless encomia, and it has been stepped on by countless parents. The humble brick is, however, much more than just a branded, colored, molded and heat-treated piece of polymer: it is the foundation of a system of control and ownership based on the global intellectual property system. In the early life of the brick, the Lego company had complete and untrammelled control over its 'System of Play,' but as the patents on the Lego brick began to expire in the mid-1970s, the company had to change its approach. It sought ongoing protection by using the wider system of intellectual property law, drawing upon copyright, then design laws, and then, finally, trade marks. The history of Lego—

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1 The numerous companies in the Lego group style themselves and their trade marks in capitals—'LEGO' rather than 'Lego.' For the sake of readability we won't use that form here. Generally, when we talk of 'Lego' or the 'company' we are referring to the 'LEGO Group of Companies' that comprises many corporate entities, in many corporate forms, in many different countries, all of which are tightly controlled by the international corporate headquarters in Billund, Denmark. In keeping with the preferred approach of the company, we will not refer to the blocks as 'legos' but rather as 'bricks,' 'blocks' or 'elements.' Also, for the sake of simplicity, we will use the Anglo-Australian form of 'trade mark,' rather than the North American form 'trademark', even when referring to US marks.

the company and its products — shows how the law has shaped the development of this company, and a larger economic evolution.

More than this, the history of the Lego brick helps us understand a remarkable legal transformation — the globalisation of intellectual property law in the postwar era. The Lego brick has been produced since the mid-1950s, and, at least in its basic form, is largely unchanged to this day. In that time, the global intellectual property system has been transformed from a small set of narrow laws that accounted for a tiny percentage of global trade, to a foundation of contemporary capitalism. The Lego company and its bricks have been involved in all parts of that transformation.

This article therefore charts the intellectual property history of Lego. In the first section we look at the early development of the brick, and show how some initial choices affected the later development of the company and its intellectual property strategy. We note how the initial Lego brick was modeled on a British children's construction toy, and how, from this inauspicious beginning, the brick was refined, eventually patented, and became the foundation of the company. Although the company initially saw the individual brick as the important object of protection, at the same time it was developing an entire 'System of Play', an innovation that, in time, became even more important to the company.

From its initial awkward beginning, Lego has developed into an intellectual property colossus and notoriously vigorous litigant, pursuing numerous defendants in multiple jurisdictions, constantly taking offence at and instituting proceedings for the use by competitors of various aspects of its construction toy. In Section 2 we examine how and why this mindset arose. In the early period of Lego's development the company adopted the typical methods of patent and trade secret protection, and it was able to assert strong centralised control over many aspects of its construction system. However, as its patents expired, the company was forced to try to assert protection using the less obvious regimes of copyright and trade mark, and it was notably unsuccessful in using these regimes to stop competitors from encroaching on its control of the brick. The company has never really given up on its desire for strong centralised control, but as its protection expired, it was forced to accommodate some more fluid boundaries in ownership, access, and control.

In Section 3 we trace the one aspect of this new understanding of control. Notably, we show how, in the late 1990s, Lego began to understand how to use licensing as a business practice. Although this type of business is dependent on intellectual property, it is different from the unitary control that Lego had emphasised till then. Cross-licensing entails a set of shared obligations between corporate intellectual property owners, and until the 1990s Lego simply didn't want to give up any control. Thus, Section 3 traces the development of shared systems of control over the Lego system. It shows how this led to a change in the company's mindset: where previously engineering and patents had dominated, during this period entertainment, media, copyrights and trade marks became increasingly important.

In Section 4 we show how Lego took these newly-learned lessons in shared control, and adapted them to the users of its system. Lego has always had a 'nuanced' relationship with the consumers of its products, but in the late 1990s it began to fight directly with its users over ownership and control issues. In particular, the emergence of the community of Adult Fans of

Lego ('AFOLs'), gave rise to difficulties with the company's default approach, of centralised control of its intellectual property. As the AFOLs grew in significance, Lego was forced to cede some degree of control to its users, making it one of the first companies to recognise the significance of the user within the intellectual property system. Lego's experience here preceded and presaged the battles that media companies would wage over user generated content in the internet era, and provides some useful lessons in shared control that we examine in the last section of this paper.

Before the Brick

The corporate narrative of Lego is a tale told many times of entrepreneurial fortune, skill and determination. Lego's history is the stuff of enthusiastic books, business school case studies and even an animated movie produced and posted on YouTube by the company itself.[2] The standard version notes that the Lego story began when a master carpenter named Ole Kirk Christiansen bought a woodworking shop in rural Billund, Denmark, in 1916.[3] Over time he began specializing in wooden toys. Eventually that was all his workshop produced and so, in 1934 he named his company Lego, a contraction of the Danish *leg godt,* or 'play well.'[4] Years later someone would observe that this word was Latin for 'I put together' but that wasn't the initial intention.[5] For more than a decade Lego produced nothing but wooden toys: carved pull-along ducks, wooden cars and trucks, yo-yos. None of these toys involved construction and certainly none of them amounted to a system involving interlocking elements, such as we associate with Lego today.

Lego's trajectory from this point embodies a longer economic-historical narrative about toys: the transition from craft-based small-scale production to intensively capitalised models of mass production. Lego began as manufacturer of wooden toys, often seen in the interwar years as more progressive and more 'natural' than those made from tin. But in the immediate postwar period the plastics industry promoted injection-molded plastic toys as safer, more hygienic, durable and economical than those made with more traditional materials. These brighter, lighter toys embodied a new kind of domestic modernity. In 1947, Ole Kirk purchased one of the first plastic injection molding machines in Denmark, and Lego proceeded to start producing plastic equivalents of the wooden toys that it had successfully produced for years.[6] Well-known examples of these plastic toys of the early 1950s include a small teddy bear in a plane, and a detailed scale model of a Ferguson tractor with attachable components like a plow. Lego's success with plastic vehicles in the 1950s, especially a branded Ferguson tractor, provided the capital for the subsequent investment in the interlocking Lego bricks.[7]

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2 Lego Club TV, 'The LEGO® Story' (*Youtube,* 10 Aug 2012) <http://www.youtube.com/watch?v=NdDU_BBJW9Y>

3 For histories of the early days of Lego, see generally S. Herman, *A Million Little Bricks: The Unofficial Illustrated History of the Lego Phenomenon* (New York: Skyhorse Publishing, 2012) 3-10; P. Graupp, G. Jakobsen and J. Vellema, *Building a Global Learning Organization – Using TWI to Succeed with Strategic Workforce Expansion in the LEGO Group* (Florida: CRC Press, 2014) xxiv-xxvi; David C. Robertson with B. Breen, *Brick by Brick: How Lego Rewrote the Rules of Innovation and Conquered the Global Toy Industry* (New York: Crown Business, 2013) 13-37; D. Lipkowitz, *The LEGO Book* (London: Dorling Kindersley, 2009) 12.

4 Herman n __ above, 5; Lipkowitz n __ above, 12.

5 Graupp et al n __ above, xxiv.

6 S. Herman, *Building a History: The Lego Group* (London: Remember When, 2012) 23.

7 Lipkowitz n __ above, 15.

What we now think of as 'Lego' stems from two innovations that occurred in the late 1940s and early 1950s. The first involved an act of appropriation and iterative adaption, and the second came from a flash of insight. In the late 1940s, Godtfred Kirk Christiansen, the son of Ole Kirk, found a set of plastic building blocks called 'Self-Locking Building Bricks,' created by a British toy manufacturer called Kiddicraft run by a child development specialist named Hilary Page. There were no Danish patents over the Kiddicraft bricks and so Godtfred Kirk took the style and form of these blocks, adjusted the dimensions slightly, struck moulds, and in 1949 began producing the first type of Lego brick—marketed first as 'Automatic Binding Bricks' and later as Lego *Mursten*.[8] Initially an unapologetic knock off of Page's design, the Lego bricks became significantly different and better within the space of the next decade.[9] Notably, Godtfred noticed that the Kiddicraft-style bricks were easy to knock over, because they had no internal binding system. After a large amount of design and testing, Godtfred invented the stud-and-tube coupling system that we see to this day, and which formed the basis of the core Lego patent.[10]

The other important innovation was the creation, dating to 1955, of the 'System of Play.' In the standard history, this insight came about in 1954 from a chance encounter on a ferry crossing between Godtfred and a toy buyer from a department store, who complained that toy manufacturers kept making one-off toys that sold once, rather than create an interrelated set of toys that would generate repeat sales.[11] Responding to this challenge, Godtfred and designers in the company developed a cohesive set comprising Lego bricks, figures, cars, trees and a play mat based around the idea of a town.[12] The set was called 'Town Plan' (or 'Town Plan No. 1'), and from this Lego created an entire 'System of Play', one that allowed for additional brick sets and figures to be added.[13] Eventually this system would encompass a range of different themes, and provide the basis for the introduction of miniature figurines ('minifigs'), technical sets, and licensed intellectual property.

The technical and material attributes of the patented plastic brick have turned out to be essential elements of Lego's innovative 'System of Play', the idea that every Lego interlocking brick could connect with any other. The Lego System promised the interchangeability and reusability of bricks, and hence the cumulative value of a Lego collection. Modern plastics made it possible to deliver on that promise—Lego was an early adopter of acrylonitrile butadiene styrene (ABS) polymer, which replaced cellulose acetate in 1963. Whether a brick was part of a set intended to lead to the creation of a fire station or an airport, it always remained a brick, and any brick could be used to make anything that could be made from bricks. Connectability made this exchangeability possible, but just as important were the brick's appearance and its mechanics. In terms of appearance, the Lego brick was a confident expression of plastic modernity. Unlike some other plastic toy construction elements, it was not designed to resemble a piece of masonry or timber; instead it looked like a functional piece of plastic, a thing that could represent anything. In terms of their mechanics, Lego bricks not only connected to

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8 For a full account see *InterLego A.G. v Tyco Industries Inc., & Ors* (Hong Kong), [1989] A.C. 217; J. Phillips, 'An Empire Built of Bricks: A Brief Appraisal of "Lego"', [1987] 12 EIPR 363, 364-5.

9 The standard account of Lego usually whitewashes this intellectual property appropriation, see e.g. Robertson n __ above, 18. Cf. Herman n __ above, 13-18.

10 For a discussion of the design process, see Robertson n __ above, 19-20; Herman n __ above, 16-18; Lipkowitz n __ above, 32.

11 Robertson n __ above, 21-22; Herman n __ above, 32.

12 Herman n __ above, 32-39.

13 Lipkowitz n __ above, 18-19.

other bricks; they adhered to other bricks with a degree of 'clutch power' that was subtly calibrated to the grip of children.[14]

Counter-intuitively, the fungibility of the brick within the Lego System also fostered the differentiation and specialisation of product lines, through two vital additional Lego commodity forms. The individual brick became an element not merely within collections of assorted other bricks, but an element aggregated within a set, and sets in turn became elements that could be aggregated into series, or 'themes'. We may still see the brick as Lego's definitive product, and of course it was the brick that was the subject of the key patent and so much subsequent litigation, but bricks as such are now likely to be purchased by enthusiasts, artists or other specialist builders, rather than by or for children. Each of these innovations, the set and the themes, were only partially and indirectly protected by Lego's interlocking brick patents. Instead, as we explain below, they embodied other kinds of symbolic value, in the form of narrative, design, or branded reputation, and each of these became subject to different property claims as the company evolved.

Protection

Like many technology-based companies, Lego's initial corporate culture relied on strong intellectual property protections, and in this case these protections were based initially around patents. As the company and the Lego system evolved, Lego sought to adopt other types of protections—which we'll see were focused on trade marks—but the foundation was a series of utility patents concentrated on the basic connectability of the brick. Starting in 1958, Lego sought patents over their basic brick design in numerous countries, including Denmark, the United Kingdom and the United States. The initial filing was in Denmark on 28 January 1958, but the company was quick to see the significance of international patent protection. Thus, Godtfred Kirk Christiansen was granted U.S. Patent 3,005,282 on 24 October 1961, for a 'Toy Building Brick' relating to 'bricks or blocks adapted to be connected together by means of projections extending from the faces of the elements and arranged so as to engage protruding portions of an adjacent element when two such elements are assembled.' Then, as now, the most important feature of the brick was the combination of studs on the top of the brick and tubes inside the brick; when combined this combination gave the bricks the signature 'clutch power' of the Lego system, allowing stable construction with relatively easy disassembly.[15] Subsequent utility patents were granted over various new advances in the Lego system—for rotatable brick elements[16] or the design of the minifig,[17] amongst many, many other innovations—and Lego developed large scale patent portfolios in countries where it marketed its products throughout Europe, North America and Australasia.

This early stage in Lego's development relied on an identifiable paradigm of control: that of strong, centralised, unitary protection. The company saw its corporate success defined by establishing formal mechanisms of protection through the patent system over various features

14 Robertson n __ above, 20 ('That design…delivered what LEGO continues to call "clutch power." When a child snaps two bricks together, they stick with a satisfying *click*. And they stay stuck until the child uncouples them with a gratifying tug. And therein lies the LEGO brick's magic. Because bricks resist coming apart, kids could build from the bottom up, making their creations as simple or as complicated as they wanted.')

15 Id.

16 Rotatable Element for Toy Building Sets, U.S. Patent No. 4,176,493 (filed 11 Nov. 1977) (issued 4 Dec. 1979).

17 Toy Figure, U.S. Patent No. 4,205,482 (filed 22 Aug. 1978) (issued 3 Jun. 1980).

of the blocks and elements of the Lego system. Based on this understanding of intellectual property, success for the company came from establishing ever-stronger forms of control, concentrated at a single point at the highest executive levels of the company. The patent system was uniquely well-developed to deliver this sort of centralised, monopolistic control, and during its early stages Lego developed an impressive international patent portfolio as well as extremely sophisticated mechanisms of central patent management.

This pattern wasn't to last. In the late 1970s and early 1980s, Lego faced its first crisis of control as its international portfolio of utility patents over the bricks began to expire.[18] A number of competitors sought to take advantage of the installed user base of Lego users by producing competing brick systems that were compatible with the Lego system: that is, these could interlock with Lego bricks. In the US, the toy company Tyco began marketing its SUPER BLOCK line of bricks to compete with regular Lego and DUPLO bricks. Tyco copied the basic design of a number of Lego bricks, but was careful to produce its own moulds and to manufacture to different tolerances, so that the 'clutch power' of the Tyco bricks was much lower than comparable Lego bricks.[19] Tyco began selling its bricks in 1985, noting in its advertising that its product looked and felt just like Lego's, but was cheaper.[20]

Lego's response was to sue Tyco under a series of theories including false advertising and unfair competition based on Tyco's use of Lego marks and designation, and a more interesting and serious claim of a common law trade mark in Lego's 2 x 4 brick configuration. Although Lego was moderately successful in the false advertising claims, largely because of marketing missteps by Tyco,[21] Lego failed in its bid to establish a trade mark in the brick design on the basis of the functionality doctrine. This places a limit on trade mark protection for trade mark and trade dress that is distinctive of source but which confers benefits to the product that involve cost, quality or desirability to the consumer. So, for example, even if the little plastic studs on the top of the brick are highly distinctive of bricks that come from Lego, the company cannot stop other manufacturers from selling similarly studded bricks if the studs provide some valuable function to the brick. The main justification for the doctrine is that conferring trade mark or trade dress protection to such features would be equivalent to granting permanent patent monopolies over functionally useful features of the product, although other related justifications have been advanced.[22]

Many jurisdictions have some version of the functionality doctrine, and it was not only in the US that Lego ran into problems with using trade mark to protect brick configurations. The company sued its Canadian competitor—a company called Ritvik, which produced a line of bricks called 'MEGA Bloks'—on the same theory of trade mark infringement, bringing the case all the way up to the Canadian Supreme Court. It eventually lost in a unanimous opinion on the same

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18 *Tyco Industries, Inc. v Lego Systems Inc., et al*. 5 USPQ2d 1023 (D.N.J. 1987), *aff'd* 853 F2d 921 (3d Cir. 1988); F. Lidz, 'Block Party', *Smithsonian Magazine* (May 2013) 64 ('The original patent on our interlocking brick expired in 1975,' says [Mads] Nipper [Lego's then-head of marketing]. 'The only way to continue differentiating ourselves from our competitors was through creativity.')

19 *See Tyco Industries, Inc.*, 5 U.S.P.Q. 2d 1023, 1024.

20 Ibid 1025.

21 See e.g. *Interlego AG v Croner Trading Pty Ltd* (1992) 111 ALR 577 (Federal Court of Australia).

22 R.G. Bone, Trademark Functionality Reexamined (2015) *J. Leg. Anal.* doi: 10.1093/jla/lav002

functionality basis that was fatal in the US against Tyco.[23] It lost also in the European Court of Justice, and in some European courts.[24]

Lego's lack of success during this period wasn't confined only to trade mark, and its attempts to use other intellectual property regimes were similarly fruitless. In the United Kingdom and Hong Kong it sought to use copyright and design registrations to stop competitors and to reassert control over the design or form of the brick. It was rebuffed at each turn. In *InterLego v Tyco*, the House of Lords held that Lego's registered design was limited by a modified form of the functionality doctrine, deciding 'that the mere coincidence of eye-appeal with functional efficiency will not confer the right to protection if, in fact, every feature of the design is dictated by the function which the article is to perform.'[25] Having failed with the designs regime, the company turned its attention to copyright. But here, Lego's strategy of regime-shifting ran into the protections created by legislators to channel protection into either designs or copyright, and thereby stop double claims of protection in both regimes. Thus, in *InterLego v Folley*, the company was unsuccessful in its bid to protect the form of its bricks and tiles by claiming copyright in the engineering drawings used to create the dies, given their role in protecting the design of the bricks[26] The company even had spotty success with various European laws that prohibited slavish imitation, a form of unfair competition—continental courts regularly found for the defendants on the basis that the interoperability with the Lego system was a pro-competitive outcome.[27] The conclusion was clear: once the foundational patents had expired, Lego no longer had sole despotic dominion over the form and design of the brick. It's unclear whether management was aware of the irony behind the reason for its failure. The brick's interchangeability and functional simplicity were the very features that made the Lego system so powerful, and yet limited its protection once the patents expired.

This must have been a bitter pill to swallow. The failed attempts at alternate forms of protection read as a company testing the boundaries of a progressively diminishing field of control. The original management's understanding of unitary control had been steadily eroded over the years, leaving the company exposed to the financial realities of competition based on price and quality, rather than the monopolistic control and supra-competitive rents available to patentees. At the same time, this first crisis of control wasn't merely about money: from the perspective of the company, not only did competitors like Tyco and Ritvik undermine the financial basis of the company, but they also affected the integrity of the System of Play that is so fundamental to the company. SUPER BLOCKS and MEGA Bloks required a number of complicated and ugly interface devices to connect with the Lego system, and the competing blocks were also typically of lower quality and possessed lesser clutch power. It's notable that the only real success that Lego had against its competitors during this first crisis of control was a false advertising claim against Tyco for the assertion that SUPER BLOCKS were just as good as Lego's bricks. Tyco's product clearly wasn't as good, and it clearly didn't work seamlessly with Lego.

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23 *Kirkbi AG and Lego Canada Ltd. v Ritvik Holdings Inc.-Gestions Ritvik Inc. (now operating as Mega Bloks)* (2005) 43 C.P.R. (4th) 385 (Supreme Court of Canada). See B. W. Stratton & H. Lue, 'Lego v. MEGA BLOKS in the Supreme Court of Canada: Ephemeral Rights in Toy Bricks', (2006) 96 *Trademark Reporter* 587; E. C. Mohammed, 'L'ego My Trade-Mark! Mega Blocks to Protection: Lego and the Functionality Doctrine Revisited' (2007) 21 *IPJ (Canada)* 27.

24 *Lego System A/S vs Mega Brands Inc*., decision 4A_20/2012 (Federal Supreme Court, Switzerland); *Lego Juris A/S vs OHIM*, C-48/09 P (European Court of Justice).

25 *InterLego A.G. v Tyco Industries Inc., & Ors* (Hong Kong) [1989] AC 217.

26 *InterLego A.G. v Alex Folley (Vic) Pty. Ltd.* [1987] FSR 283.

27 See e.g. *Mega Bloks Inc v. Lego System A/S* [2008] ETMR 73 (Supreme Court (First Civil Section), Italy).

Notwithstanding its numerous losses in court, Lego has never changed its preferred approach, and there are numerous examples of the company using the intellectual property system to gain as much control as possible over various aspects of its business. It never stopped seeking utility patent and design registrations, including some that have become notably important, such as the 1978 design registration for the minifig.[28] The company has also been notably effective at convincing legislatures for protections that assist its position. The EU Designs Directive[29] provides a 'must-fit exception,' excluding designs registration of product features which must necessarily be reproduced in their exact form and dimensions in order to interconnect to the product in which the design is incorporated.[30] However, Article 7.3 provides an exception to the must-fit exception for 'modular systems' like Lego bricks, and so,

> …the mechanical fittings of modular products may nevertheless constitute an important element of the innovative characteristics of modular products and present a major marketing asset and therefore should be eligible for protection.[31]

These provisions are often referred to as 'Lego clauses' since they came about from strong lobbying by Lego within EU institutions, especially the Commission.[32]

All of these examples show that Lego has never—and probably will never—give up on the desire for strong, centralised control over the individual elements of its building system. However the crisis of control that began with the expiry of the initial brick patent in the late 1970s, and continued with various litigation losses during the 80s and 90s, prefigured a change in the company's approach to intellectual property. As it was forced to give up on unitary dominion, a new understanding emerged within the company, and with this new approach came a different relationship between the company and the brick. During the period after the first crisis of control, the brick lost its central role in Lego's intellectual property strategy. In time, the company's intellectual property strategy shifted to different objects of control.

Partnership

It is rare for a company to embrace the reductions in control and revenue that are inherent in the expiry of intellectual property protection. Lego is no exception. The company has never given up on its desire to control the brick; but other understandings have emerged as the company evolved and as the market for children's building blocks matured. This initial change in corporate understanding can be understood as revolving around two features: the locus of intellectual property control and the emergence of an alternative approach to control, one that featured shared access in the form of partnerships.

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28 U.S. Des. 352,745. The company also recently prevailed in its claim that the minifig has become a distinctive trade mark within Europe, see *Best-Lock (Europe) Ltd v. OHIM & Lego Juris A/S*, Case T-395/14 (European Court of Justice, General Court, Third Chamber, 16 June 2015)

29 Directive 98/71/EC of the European Parliament and of the Council (13 October 1998).

30 Ibid art 7.2; Ibid rec. 14.

31 Ibid rec. 15. Similar provisions are contained in rec. 10 and 11 as well as art. 8(2)(3) of the EU Designs Regulation, which created the Community Design Right.

32 See generally G. Tritton, *Intellectual Property in Europe* (London: Sweet & Maxwell, 2008).

First, during the period from the 1980s onwards, Lego's focus of intellectual property control changed. Initially, as we've seen, the company emphasised control over the brick and similar small-scale elements. It appears that the company didn't recognise the opportunities for control over larger-scale features of the system, even though it is true that, from the earliest days of the Lego system, sets were important to the company. Town Plan No. 1[33]—the first offering in the Lego 'System' and the iconic innovation by Godtfred Kirk Christiansen credited with creating what we think of as 'Lego' — was available from 1955 and comprised interlocking bricks that made up a gas station, a hotel and other town buildings, together with a mat with roadways printed on it, 1:87 scale metal cars, trees and people. Although Lego continued to offer sets like this, and continued to refine the System of Play, during the early stages of the company's development the unit of intellectual property control was over the individual brick, and small scale elements like minifigs. The company didn't seem to think about larger or different units of protection.

However, by the late 1970s Lego began to systematise their sets into themes, and a new understanding emerged within the company. Arguably their first theme—later called Town—stems from the iconic Town Plan No.1, but the Castle and Space themes both emerged in 1978[34] and then in time the company began to develop and release sets specifically to fit within these broad themes. These themes emerged more-or-less organically from the Lego system, and they weren't planned as an exercise in branding. Within the standard histories of Lego, the emergence of the themes is often explained as a feature of the corporate ethos of creative play, since purchasing a new set that is thematically-related to one that a child already owns gives more opportunities to extend the creations that could be built.[35] But the development of themes also led in time to the understanding by Lego that it now had brands that functioned independently of the individual bricks, or of the 'Lego system', and these themes had commercial value beyond either the brick or the system. This is an important evolution, because it enlarged the scale of the intellectual property focus, from the individual bricks to higher conceptual features of the Lego system. At the same time, this evolution scaled the corporate understanding of Lego downward from the monolithic 'system', freeing the company to explore bricks, sets and even whole systems that didn't fit neatly with each other.[36]

Although the early themes of *Town*, *Space*, and *Castle* operated mostly as a sorting device for the types of bricks inside thematically-related sets, later themes began to operate in ways that we would think of as implementing modern branding practice. Themes generated meaningful consumer associations independent of source identification, and as a result the company started to recognise the potential of these brand lines. The *Town*, *Space* and *Castle* themes became ever more distinctive throughout the eighties, with special characters and pieces developed only for sets within those themes, and new sub-themes emerging for each main theme.[37] By the late 1980s, the theme-as-brand understanding was sufficiently important to the company that new

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33 See Lipkowitz n __ above, 18-19.

34 Lipkowitz n __ above, 22 displays the first *Castle* and *Space* sets. The Town theme traces its lineage back to Town Plan No.1. See Herman n __ above, 21-40.

35 Herman n __ above, 21.

36 In time, themes like *BIONICLE*—introduced in 2001—and *EXO-FORCE*—introduced in 2006—would emerge that could barely interconnect with other bricks, a development that once would have been an anathema to those designing within the Lego system. See Lipkowitz n __ above, 98-99; 106-113.

37 One example: there were numerous sub-themes of the *Castle* theme, including *Black Falcons* (1984-1992), *Crusaders* (1984-1992), *Forestmen* (1987-1990) and *Black Knights* (1988-1994). Herman n __ above, 93-98.

types of themes emerged—ones that were developed as identifiable brands, not merely as evolutions of the standard system.

Thus, in 1989, Lego introduced the *Pirates* theme, and over the next few years developed separate lines within this theme, including sets branded as *Islanders* (featuring Polynesian references) and *Armada* (with a Spanish Armada look-and-feel).[38] In 1992 the *Paradisa* line of sets was released, which sought to appeal to girls by its pale pink, green and white colours, and included horses and female minifigs.[39] Throughout the 1990s users of the various themed sets developed independent and specific associations for brands as divergent as *Aquazone* (underwater adventurers), *Belville* (girl-related themes), *City* (urban services and engineering), *Space Police* (science-fiction police drama), *Knights* (medieval/fantasy heroes), and *Blacktron* (science fiction adventurers), among many others.[40] It's evident that during this period Lego came to understand that consumer loyalty to brands is a significant means of control of purchasing decisions, as well as a means of segmenting markets to appeal to specific audiences: boys who wanted to be space explorers reached for the *Blacktron* and *M:Tron* sets, would-be civil engineers built *City* sets, and girls contented themselves (or not) with the pastel-colored and home-oriented *Belville* range.

Lego's trade mark portfolio for this period reflects how quickly it learnt the branding lesson, as it expanded significantly from the 1980s onwards. The expiry of the brick patents in the late 70s, the emergence of construction brick competitors in the 80s, and rise of thematically-linked sets during the 90s led Lego into a deep investment in trade marks and branding. The company continued to desire unitary and centralised protection, but the focus and locus of intellectual property control had shifted in large part from the brick to the control of the set and the theme. As this locus of IP control shifted, Lego became a more sophisticated user of the IP system. Nonetheless, it is striking that, although the company came to understand the significance of brands and invested heavily in its trade mark and branding portfolio, it relied on internally-generated brands. From its inception, and throughout the years until the late 1990s, the company simply didn't license-in any brand from outside. It wasn't until 1999 that Lego released a set that featured any intellectual property licensed from another company. The new theme was *Star Wars*,[41] licensed-in from LucasFilm and launched to coincide with the release of the first prequel in the *Star Wars* canon, *Episode 1*.[42] This point signaled a radical change in the company's approach to licensing-in—in 1999 it issued fifteen sets of *Star Wars* licensed product, and by 2009 it was releasing as many as twenty four.[43] In the following years, Lego created huge numbers of sets based on outside intellectual property assets, with sets based on *Raiders of the Lost Ark*, *Harry Potter*, *Spiderman*, *SpongeBob SquarePants*, Ferrari cars, and innumerable others.[44]

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38 Herman n __ above, 128-133.
39 Ibid 134.
40 Ibid 136 et seq.
41 S. Beecroft, *Lego Star Wars: The Visual Dictionary* (London: Dorling Kindersley, 2009) 3.
42 Herman n __ above, 242
43 Beecroft n __ above, 4-9.
44 See e.g. Lipkowitz n __ above, 102-103, 140-157; E. Dowsett, *Lego Harry Potter: Building the Magical World* (London: Dorling Kindersley, 2011); N. Martell, *Standing Small: A Celebration of 30 Years of the Lego Minifigure* (London: Dorling Kindersley, 2009) 72-90.

The most intriguing question in Lego's licensing of the Star Wars intellectual property is why the company took so long to become a fully-fledged licensor of content? Lego's competitors in the toy business, companies like Mattel and Hasbro, had been involved in licensing deals as early as the mid-1960s.[45] Kiddicraft, the original source of the plastic interlocking brick, had begun an ambitious licensing programme for its sets of household 'miniatures' at the same time. Licensing was an established practice in media, entertainment and sports companies decades before Lego first licensed-in any LucasFilm content. What was it about Lego that meant they were so late to this party? Although any theory must be speculative, it seems to us that there were at least three features that explain the lag.

The first explanation relates directly to the importance of intellectual property to Lego corporate culture, notably the company's reliance on centralised protection described in the previous section. This approach demands exclusive, unitary control over intellectual property. Steeped in this model, Lego executives were unlikely to seek out ways of diminishing control by sharing any part of their intellectual property portfolio. So they didn't consider that a more profitable mechanism of intellectual property commercialization was to engage in licensing-in content from outside the firm.

The second explanation is one that resounds in the industrial organization literature: during the 1980s and 1990s, the company was going through a major transition, from a toy, learning, and engineering company, into something else, something that was ill-defined then but which today we might think of as a transmedia, or creative industries company.[46] It took Lego some time to recognise and manage the transitions involved in knowledge and business practices. All corporate changes are hard, and tensions between the old and the new typically take profoundly longer than appears reasonable in retrospect. It's not surprising that Lego's transition towards becoming a media conglomerate was only apparent by 1999, when it finally realised that it could leverage the brand of a Galaxy Far, Far Away.

Finally, it seems likely that Lego's ethos of creative play may have constrained the company's interest in these sorts of commercially-significant deals. The ethos of creative play valorises original and creative production by the child, and building *Star Wars*-themed sets must have been viewed by the company as merely replicative or mimetic. Instead of creatively-playing, kids using the *Star Wars* sets can be seen as merely reproducing elements from a Hollywood blockbuster. An episode of *The Simpsons* explains it best: Lisa visits her local 'Blocko' store, but is disappointed to find only an array of sets dedicated to scenes or characters from the *Cosmic Wars* franchise. 'I kind of wanted to create my own thing,' she says, 'do you sell any just plain sets?' 'No. We do all the imagining for you,' says the helpful woman behind the counter. Lisa picks up a 'Chubba the Shedd's Dust Palace' box: 'I'll just buy one of these and build something different.' The salesperson responds: 'Do, and you better build yourself a lawyer.'

This is a wonderfully sharp cultural critique of Lego's current approach to creative play, and how this connects to licensing. But it's worth noting that in this respect the *Star Wars* models were not conceptually different from the complex sets (themed or otherwise) that Lego was

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45 D. Hunter & G. Lastowka, 'Barbie™' (2015) *Tulane Technology and Intellectual Property Law Journal* __ (forthcoming).

46 H. Jenkins, 'Transmedia Storytelling', (2003) *MIT Technology Review*, available at http://www.technologyreview.com/news/401760/transmedia-storytelling/

making prior to its initial foray into licensing—all of which sets were based on the reproduction of a design, and then its immersion in imaginative story telling or re-telling.

The move to licensing-in other properties transformed the company in a number of ways. At its most prosaic it is credited with turning around Lego's fortunes, which were starting to suffer by the late 1990s. By then Lego had posted its first operating loss, and the period up to 2004 was a difficult one for the company.[47] It saw a series of financial difficulties, as well as the handover of control from the family to two outsiders.[48] At the same time as the transfer of formal control, Lego transformed itself into something quite different from what it had been before. It began to accept shared control of intellectual property, and under this model, licensing and branding became central to the success of the company. By the early part of the 2000s, the company had given up on the idea that it had to control every part of Lego system, and began to embrace partners and shared intellectual property control.

The evidence for the emergence of this new understanding of shared control is everywhere within the Lego canon, but one example is particularly striking. The Lego *Adventurers* theme was introduced in 1998, the year before *Star Wars* became Lego's first licensed-in intellectual property. The *Adventurers* theme was set in the 1920s and featured a dashing explorer hero, Johnny Thunder, who undertook exciting quests with the beautiful Miss Pippin Reed, pilot Harry Cane, and the older Dr Kilroy.[49] The first *Adventurers* sets took place during the 'golden age of archaeology' and featured adventures set in Egypt, involving mummies, temples and pyramids.[50] Later sets included rescues of the Golden Dragon from Emperor Chang Wu's Dragon Fortress, and a journey in search of Marco Polo's lost treasure, one that ranged across India, China and Tibet, as the adventurers faced a tyrannical maharaja, a wild yeti, and Johnny's arch-enemy, Lord Sam Sinister.[51] The series is self-evidently modeled on the Paramount/LucasFilm *Indiana Jones* series, the first movie of which was released in 1981, seventeen years before the *Adventurers* theme was launched. Knowing now what we know about Lego's success of its licensed-in content, it seems remarkable to realise that Lego was creating colorable imitations of intellectual property from a film company that, one year later, it would license-in. When Lego released a licensed *Indiana Jones*-themed set in 2008, it marked the beginning of a hugely successful series.[52] In time this would lead to the development of a remarkable cross-licensing regime with LucasFilm: videogames were developed, based on the *Indiana Jones* franchise, but with Lego minifigs and bricks now playing their part as the fundamental, but no-longer material, basic elements in a digital System of Play.

As Lego developed stable forms in its themes, it also experimented with the way that narrative could be built into its brands. Narrative play requires roles and people, and this requirement gave rise in time to the minifigure. The first Lego figures were bespoke, moulded characters, static and unmodifiable occupants of the early *Town* sets. In the 1970s, a new *Family* set became Lego's biggest selling product ever. Because they used regular bricks, these figures could be

47 Robertson n __ above, 4-6.
48 Herman n __ above, 261; Robertson, n __ above.
49 The characters had different names in various countries. 'Johnny Thunder' was also known as 'Sam Grant' and 'Joe Freeman,' 'Dr Kilroy' was sometimes styled 'Dr Charles Lightning' or 'Professor Articus' and 'Pippin Reed' was also called 'Pippin Read,' 'Gail Storm' and 'Linda Lovely.' Lipkowitz, n __ above, 91.
50 Herman, n __ above, 181.
51 *See* Lipkowitz, n __ above, 91.
52 *See* Herman n __ above, 255.

modified, but they had very limited movement. They were replaced in 1978 by a new, articulated design that became the standard in all subsequent sets: the mini-figure or 'minifig'. The existence of a standard allowed an extraordinary proliferation of characters, differentiated by colour, headgear, hair, and printed clothing. Over time, facial expressions and other details were also varied from the stock, neutral happy face. Villains looked evil, pirates acquired eyepatches, and a female chef became the first minifig with eyelashes in 1992.[53]

It seems difficult to overestimate the importance of the minifig for Lego's subsequent history: this addition to the system made possible the later deep involvement in character-based themes, and of course Lego's licensing arrangements with movies and television, notably the *Star Wars* series. It made possible a whole range of transmedia activity, where the minifig representation of a fictional character could become the basis of video games such as the Lego *Harry Potter* series.[54] The important feature of all of these titles is that, whether or not we are talking about physical Lego, the minifigs remain the key players, rather than any kind of figurine or audiovisual representation of an actor or the original character. In the Lego video games, for example, if the minifig character dies, he or she explodes into a shower of Lego pieces, which then recombine into a new model. The centrality of the minifig is probably not merely a matter of licensing; it seems rather to go back to the ethical dimensions of 'playing well', the initial premise of Lego's founder. Despite the portrayal of conflict in themes such as in *Raiders of the Lost Ark*, what is being depicted here cannot be war or real violence, if it is happening to minifigs. In a good story bad things must happen, but Lego ensures they do so within a defined domain of safe play.

Another revealing piece of evidence of the fundamental change in Lego's corporate understanding of intellectual property is found in the 'Biological Chronicle', or *BIONICLE*, series. Introduced in 2001, the series comprised of parts that were almost completely incompatible with the traditional Lego building systems, and it featured an elaborate narrative that was told through comic books, novels and, eventually, online games and animations. When the idea for the series was proposed, the story goes that the traditional Lego executives expressed skepticism—they had little or no understanding of a multimedia strategy that was driven by a top-down narrative and a clearly defined brand, rather than the bottom-up experience of playing with the toys.[55] But management took a chance on the new narrative/toy form, and reaped outsized benefits as a result.

BIONICLE was, for a while, the best selling Lego product, but the significance of the series goes well-beyond the money it made. If the first *Star Wars* set represents the point at which Lego became a licensing and branding company, then set *8549 Tarakava* and set *8538 Muaka & Kane-Ra*, the first *BIONICLE* sets, represent the point where Lego became a media company. In 2003, Lego released the movie *BIONICLE: Mask of Light*, and followed up shortly thereafter with three sequels, various novelizations, and comics.[56] By this stage Lego was experimenting with numerous media strategies, including a collaboration with Steven Spielberg in 2000 called *MovieMaker*, which allowed kids to make webcam movies on a tiny Lego film-lot. In time the

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53 G. Farshtey & D. Lipkowitz, *LEGO Minifigure Year by Year: A Visual History* (London: Dorling Kindersley, 2013) 52-53.

54 Dowsett, n __ above, 82-85.

55 Herman n __ above, 174.

56 Lipkowitz n __ above, 106-113; Herman n __ above, 174-178.

Lego media strategy would encompass all forms of media, including books and cartoons, video games featuring bricks, movies featuring minifigs, and even movies featuring videogames featuring minifigs. Lego's embrace of partnerships finds its delightfully ironic apogee in the *Lego Movie,* which features Lego minifigs of DC-owned characters like Batman, created by Animal Logic, an Australian computer animation company, using ideas and models pioneered by TT Games, an English videogame company.

We see this now, but it was only by the middle of the 2000s that the transition became complete. By then, Lego had become a transmedia company, with formal and complex licensing arrangements that involved licensing-in, licensing-out, cross-licensing, and an elaborate branding strategy for its themes and series. Its approach to brick sets had become more complex as well, moving from player mimesis of the picture on the box, to an understanding that the player would connect with the set in a diegetic relationship, with formal narratives, characters and understandings partially under the players' control and partially directed by the company-approved story.[57] Partnership was now an established form of intellectual property control embraced by the company.

But Lego was about to be confronted with a wholly-different challenge to its approach to intellectual property. In the late 1980s and early 1990s the company had successfully navigated the first crisis of control caused by the loss of its brick patents and its failure to protect the brick by other IP regimes, by moving its attention to the branding of sets and themes, and embracing a (slightly) more pluralistic understanding of control that allowed for partnership and shared ownership. The next crisis of control was different: this involved a challenge to Lego's fundamental control of how knowledge was produced within their system, and who was allowed to participate in that knowledge production.

Participation

No company is an island unto itself; and Lego has long been forced to navigate its way through the corporate desire for control and the consumer's demands for freedom and access. At first this was a fairly simple relationship, but in time it has become much more difficult. This section examines what happened after Lego adopted corporate partnerships, and was forced to recognise shared control of intellectual property, this time with its users.

In the early part of Lego's development it connected with its users in ways that were typical of companies of the era. That is, it released a set of bricks or developed new elements or themes, often based on market surveys or consumer testing before the release of the product, and then after release it made an assessment of whether the product was selling profitably and what needed changing. Although the market has a significant role to play, this is a model of 'participatory' innovation that relies on centralised control. This approach assumes that the company's executives know best how to respond to the information that the market is providing. This understanding is very similar to the company's initial emphasis on strong unitary protection of its intellectual property: both approaches are predicated on centralised mechanisms of control, and centralised command-and-control structures within the company.

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57 *See* e.g. A. Smith, 'Beyond the Brick: Narrativizing Lego in the Digital Age' (2011) at <http://web.mit.edu/comm-forum/mit7/papers/Lego_AaronSmith_2011.pdf.>

It is therefore not surprising that Lego's early emphasis on protection via intellectual property operated at the same time as this kind of centralised model of participation.

However, over time the company was forced to adopt a more fluid understanding of the locus of innovation, and it fought a series of battles with its users over control of the means of innovation in Lego products. As a result the company is an interesting case study in distributed control of innovation—as specifically an interesting early precursor to user generated content in media industries—since Lego was one of the first companies forced to recognise user-creativity and user-involvement in the process of design and dissemination of its products. It had to recalibrate its use of its intellectual property portfolio to accommodate these realities: unlike media companies of the time, it couldn't merely assert the total control, nor was it able to deal with the issue by the cross-licensing that occurs when a company embraces intellectual property partnerships. It had to embrace a brand new approach to intellectual property control, one that emphasises participation. Lego had to grapple with this reality during the 1990s and beyond, and its move to this new acceptance of external participation in creation presages the entire UGC movement that occurred in internet-delivered digital content during the 2000s, and is an early case study in how companies deal with this loss of control.

For Lego the challenge came not in video remixes or music mashups, but in the rise of Adult Fans of Lego, or 'AFOLs.'[58] Adult fans were never part of the company's main strategy and emerged as a demographic without the intercession of the company. Indeed AFOLs initially challenged Lego's core understanding of itself as a toy company, and as a company that was focused on the culture of children's creative play. Adult users of Lego were an anomaly for the company, one that it initially ignored, and then, over time, reluctantly accepted. The company eventually split its marketing group into two: one focused on users under the age of thirteen and one over.[59] Even with this change, the company had difficulties adjusting to the way that adult users interacted with its products. During the late 1990s, the relationship was especially vexed, as the company and the AFOL community wrestled over numerous aspects of control. A number of trade shows and conventions were created by the AFOLs, which were originally branded as 'Lego Conventions' or 'Lego Cons' until the company objected to the use of the core company trade mark and the arguable sponsorship claim that this entailed.[60]

Détente has been established and the company has drawn up guidelines for the use of its marks.[61] These days the conventions are usually styled as 'BrickCons' and the company doesn't intercede as long as the 'LEGO' trade mark is not used.[62] Indeed the somewhat generic 'brick' moniker is now routinely used in AFOL activity to get around this sensitivity. For example, Dan Brown, an evidently enthusiastic collector from Bellaire, Ohio, installed his collection in an old school building and called it 'The Lego Museum.'[63] Predictably, he was soon faced with significant legal threats. His protestations—that he was a true AFOL, that he was merely

58 See generally J.C. Garlin, 'Block Party: A Look at Adult Fans of Lego,' in *Fan CULTure : Essays on Participatory Fandom in the 21st Century* 119-130 (K.M. Barton & J.M. Lampley eds, 2013)

59 Ibid 121.

60 LEGO Group, *LEGO Fairplay*, 11, available at <http://cache.lego.com/r/www/r/legal/-/media/legal/media%20assets%20library/brochures/fairplaybrochure.pdf?l.r2=-2035337139>

61 Ibid.

62 Ibid 10.

63 J. Bender, *Lego: A Love Story* (Hoboken, NJ: Wiley, 2010) 195-200.

contributing to the AFOL community, and the like—did little to mollify the company. These days a notice on the museum's website notes:

> One of the main problems we faced was the name change game. Due to legal reasons that has (sic) been all over the place! We are now 100% secure, and approved for...Toy and Plastic Brick Museum.[64]

However, Brown has still managed to sneak in a reference to the main brand: in secondary parts of the museum marketing he calls his attraction, the 'Unofficial Lego® Museum.'[65]

AFOLs deviate from corporate control in other ways, notably in the nature of the way that they interact with the bricks. Children typically engage in play that encodes the values of Lego: this occurs either in emulation through making the sanctioned models on the cover of the set, or in a limited form of creative mimesis of features of their world, often involving cars, houses, rocket ships, and so on. This is the kind of 'creative play' that Lego built itself around. AFOLs don't use the same playbook, however. Their interactions quickly cross a number of boundaries that the company feels obliged to patrol. In particular, the emergence of MOCs — 'My Own Creations' in AFOL-speak[66]— has posed all manner of challenges for the company. MOCs are creative uses (usually by AFOLs) of Lego to produce all manner of dioramas or objects: these range from simple creations like a rainbow truck, to architectural models like the Empire State Building, or depictions of the Zombie Apocalypse.[67] The issues around MOCs have ranged from the relatively simple to the fiendishly complex. At the simple end we find MOCs that involve an AFOL reproducing third party intellectual property—for example, Adrian Drake's model of the *Serenity* spaceship from Joss Whedon's *Firefly*, or Mark Borlase's 60,000 brick diorama of the Rebel-Empire battle on Hoth from *Star Wars*[68]—which Lego could deal with by demonstrating that they were merely an instrumenting technology, like a pencil or a cassette recorder. Even if the users engaged in infringing activity, the company shouldn't be held responsible for the actions of those infringers who operated at such a significant remove from Billund.

More difficult issues have arisen from AFOL uses that challenged the non-aggressive ethos of the company, or which involved activity that might have made the company look bad, or subjected it to potential legal liability. Perhaps the best example is the set of instructional manuals showing how to make dangerous objects, like spring and rubber band guns, or replica pistols. Books like 'Badass Lego Guns', 'The BrickGun Book', and 'Forbidden Lego'[69] are now widely available, but when the first one of these emerged—called 'Weapons for Lego Lovers'[70]—the company did everything it could to stop its production. Relying mainly on threats involving arguable trade mark infringement claims, Lego was able to slow the dissemination of these sorts of works. But the lessons of the 'Lego Con' convention organisations were not lost on

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64 'Un-Official Lego ® Museum: Toy & Plastic Brick Museum' <http://www.theplasticbrickmuseum.com>

65 Ibid.

66 Garlin, n __ above, 123.

67 Bender n __ above, 51.

68 Garlin, n __ above, 124.

69 M. Hudepohl, *Badass LEGO Guns: Building Instructions for Five Working Guns* (San Francisco: No Starch Press, 2010), *The BrickGun Book: Build the World's Most Realistic LEGO Handguns* (San Francisco: No Starch Press, 2013); U. Pilegaard, *Forbidden LEGO: Build the Models Your Parents Warned You Against!* (San Francisco: No Starch Press, 2007). See also J. Streat, *LEGO Heavy Weapons: Build Working Replicas of Four of the World's Most Impressive Guns* (San Francisco: No Starch Press, 2012).

70 M. Hudepohl, *Weapons for Lego Lovers* (Germany: Xubor, 2009)

the producers of these books, and they found that there was little the company could do as long as they limited use of the marks to purely descriptive uses, and were careful to disclaim sponsorship or endorsement by Lego. It is notable that neither the books, the conventions, nor the museum use the well-known Lego graphical device: this logo is so distinctive that its mere use is likely to give rise to actionable associative confusion. As a result, the publishers of books about making weapons from Lego bricks have been able to avoid litigation from the company by using the descriptive 'brick' moniker.

Although these AFOLs caused the company heartburn, perhaps the most difficult case of an adult user was Zbigniew Libera. Libera is a Polish artist who approached Lego for a donation of bricks to use in his art. The company agreed, but was appalled when their donation resulted in an artwork called *Konzentrationslager*, comprising a series—a putative 'theme', in fact—of fake Lego sets depicting Nazi concentration camps. One set depicted skeletal prisoners behind barbed wire fences—Libera used skeleton minifigs from the *Castle* theme to depict the prisoners—while another shows a minifig being hanged on a gallows. A third set shows skeletons being dragged into a crematorium blockhouse under the watchful eye of a black-clad guard, with the massive crematorium chimneys, all-too-familiar from Holocaust documentaries, towering above the roofline.[71]

The Libera situation is more significant for Lego than the other sorts of AFOL-uses; and not just because his was an 'artistic' use that attracted lots of press, and was exhibited in the Jewish Museum in New York, eventually to be bought by the Museum of Modern Art in Warsaw.[72] Rather the *Konzentrationslager* artwork threatened Lego because it adopted the trade dress and the tropes of themes and the sets, and specifically used the stylised Lego and 'System' device mark on the sets. Libera specifically stated on the sets that 'This work of Zbigniew Libera has been sponsored by Lego,' an observation that was true to the extent that Lego donated the bricks to the artist, but definitely not what the company intended.[73] Lego attempted to stop the display of the set, arguing that Libera's use was confusing and deceptive; but eventually backed down once the artist hired a lawyer.[74]

Lego's challenges with artistic use of their bricks has recently become apparent in its difficulties with the Chinese artist-provocateur Ai Weiwei. The company refused to sell Ai a large number of its toy bricks for his latest art installation, and was quickly accused of censorship, both by the media and by Ai.[75] Although it is clear that this wasn't censorship[76] and the company was quick to note that it nowadays removes itself from political uses of its bricks, many saw Lego's actions

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71 Baichtal & Meno, n __ above, 160-162

72 D, Ng, 'Warsaw Art Museum Buys Zbigniew Libera's 'Lego' Concentration Camp', *Los Angeles Times* (3 Jan 2012) <http://latimesblogs.latimes.com/culturemonster/2012/01/Lego-concentration-camp-warsaw-museum.html>

73 J. Baitchtal and J. Meno, *The Cult of Lego* (San Francisco: No Starch Press, 2011) 160.

74 Ibid 161.

75 Fergus Ryan, 'Artist Ai Weiwei banned from using Lego to build Australian artwork', *The Guardian*, 24 October 2015, http://www.theguardian.com/artanddesign/2015/oct/24/artist-ai-weiwei-banned-by-lego-to-build-artwork-australian-exhibition ; Lindsay Bever 'Lego collection sites pop up around the world to support Ai Weiwei', *The Washington Post*, 29 October 2015, https://www.washingtonpost.com/news/worldviews/wp/2015/10/26/lego-wouldnt-sell-bricks-to-chinese-artist-ai-weiwei-so-fans-are-donating-theirs/

76 Dan Hunter, 'Lego shouldn't brick it over Ai Weiwei – refuting the censorship argument is child's play', *The Conversation*, 9 November 2015, https://theconversation.com/lego-shouldnt-brick-it-over-ai-weiwei-refuting-the-censorship-argument-is-childs-play-50189

connected to the announcement of a new theme park in China.[77] As a result a coordinated grassroots efforts sprang up to collect unwanted Lego bricks for Ai's use; thereby prolonging the media frenzy. Whatever the reason for its refusal, and whatever the merits on each side, the company was clearly going to be harmed no matter what its approach to the problem. The Ai Weiwei controversy provides another example of the difficulties that certain types of AFOLs will inevitably bring to the company.

The rise of the AFOLs, and their multifarious reuses of Lego bricks, has generated a new set of understandings for the company. It has gradually moved from its rigid control of uses and users, to a more nuanced understanding of the actions of those who engage with the bricks. In 1998, at a time when the company was beginning to accept partnership as a model of control, Lego introduced *Mindstorms*, a robotics kit that fast became its best selling series. Immediately on its release, a Stanford University grad student named Kekoa Proudfoot reverse-engineered the secret microprocessor controller and posted the details to the internet for AFOLs and others to use and adapt.[78] Lego was forced to begin rethinking its approach to user innovation, rejecting the lawsuit proposed by its legal team, adopting instead the recommendations from its marketing department which suggested co-opting the users instead of suing them.[79] The company's initial 'user friendly' response resided mostly in its decision not to issue suit rather to embrace its users' creativity; but by the time the company introduced the *Mindstorms NXT* upgrade in 2005 it had embraced a more open source approach, going so far as to nominate four external experts as the 'Mindstorms User Panel' who had access to early designs and were involved in user testing and feedback.[80]

The lessons of *Mindstorms*, Libera and other AFOL involvement have not been lost on the company. Lego has begun to embrace a deeper form of participation from its users, and from the AFOL community. In its third iteration of *Mindstorms* the company expanded its user panel to a dozen members, affectionately known as the '12 Monkeys,' who are now involved in numerous aspects of the development of the *Mindstorms* range.[81] Executives now rave about the involvement of the user panel members, noting 'Their enthusiasm, paired with their insight and technical skill set, was just such a winning cocktail…That was the biggest reason for engaging them.'[82] As a result, 2012 witnessed Lego's creation of the Ambassador program to provide an official channel between the company and the AFOL community.[83] Eighty-eight ambassadors from thirty countries were selected to work with the company in 'all areas which concern the worldwide LEGO community' and to be the voice of their respective user groups within the company.[84]

Giving up on control has led to other benefits for Lego. The successful Lego *Architecture* theme came from an AFOL named Adam Tucker Reed, who proposed the theme and even developed and marketed the first sets.[85] The company has even experimented directly with user-led

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77 Lydia O'Connor, 'Lego Refuses To Send Its Toy Bricks To Ai Weiwei, Artist Says', The Huffington Post, 25 October 2015, http://www.huffingtonpost.com.au/entry/ai-weiwei-lego_562cfc9ee4b0443bb5643dd1

78 Lidz, n 19 above, 64.

79 Ibid.

80 Ibid 65.

81 Ibid 66.

82 Lego executive Søren Lund, quoted in Robertson n __ above, 193.

83 Garlin, n __ above, 122.

84 Ibid.

85 Robertson n __ above, 203-211.

innovation, setting up a website, originally called CUUSOO and now called 'LEGO Ideas', where users can suggest an idea for a set, gather support from a community, and propose it to Lego for production.[86] And even where the company makes commercial decisions no longer to produce certain sets, it has begun to see users as useful in the continuation of its brands. So, in 2010, the company shuttered production on the *BIONICLE* range, but it set up an online space called *BIONICLEstory.com* for users to continue the narratives and stories about the theme.[87]

Lego has come full circle in its embrace of the AFOLs. In 2012, Jim Foulds, one of Lego's heads of community engagement, noted

> The LEGO Group is very excited about the activities and growth of the Adult Fan community. We have strived to create programs and actions to support fan activities and at the same time to ensure that we don't impede them. For example, Rebrick, which is a social bookmarking site that The LEGO Group created, allows fans to highlight and share LEGO creations they find on the internet.[88]

The story about Lego and user participation is, then, a story about the tensions that emerge when a control-focused company engages with users who seek their own path in creativity. Many years later, media companies would confront a similar problem with the development of user-generated content and the challenge to control that this posed for them. Some of the lessons learned by Lego are similar to the ones learned in time by media organizations. For example, the assimilation by Lego of users in the CUUSOO website and the *Architecture* theme is similar to the lesson learned by Disney with its film *Frozen*. A notoriously belligerent litigant, Disney discovered that allowing users to adapt *Frozen*—posting YouTube clips of kids belting out 'Let it Go', or Vimeo tutorials showing teenagers how to make themselves up as Elsa—drove higher sales for the products that Disney sells, namely the movie, film merchandise, princess dresses, and so on.[89]

Of course Lego was luckier than the media companies in its relationship with its users. Media and entertainment companies have faced the dilemma that user-generated content often takes the same form as the product that they would like to sell, and therefore the users' products compete with theirs. Understandably, record labels are troubled by mashups of their MP3s, in the same way as film companies are concerned about supercuts of their movies, or book publishers worry about fan fiction: each of these uses is unpaid, threatens to substitute for the content itself, and is often critical of the content itself. Lego of course never had any of these problems, and in the end the challenge for the company has been to use the intellectual property system to encourage the full flowering of users' creativity. Of course this also meant that the company was encouraging, at the same time, its users to buy more Lego bricks.

Conclusions

86 'LEGO Ideas Homepage' <http://ideas.lego.com/>
87 *See* Herman n __ above, 177.
88 Garlin, n __ above, 128.
89 A. Leonard, 'How Disney Learned to Stop Worrying and Love Copyright Infringement', *Salon* (23 May 2014), <http://www.salon.com/2014/05/23/how_disney_learned_to_stop_worrying_and_love_copyright_infringement/>

For legal scholars, Lego's history illuminates the evolution of intellectual property regimes in the latter part of the twentieth century. Unlike media companies whose intellectual property strategy was based solely around content, Lego is a signal example of a company built around providing the infrastructures of creativity and of play, and the story of its use of intellectual property is a story of push and pull. Lego provides a sustained demonstration of the way that commercial operators have engaged with the intellectual property system to develop environments in which other, non-commercial, actors have flourished, and the tensions that these relationships involve. Some of these tensions follow from the fact that the Lego system itself is a technology for reproduction at least as much as or more than it is about creation.

Tracing the development of Lego's intellectual property strategies tells us a lot about the interactions between the law and the firms that rely on it, as well as showing the significance of intellectual property to the development of artifacts as culturally important as the Lego brick. Looking back over the history of Lego and intellectual property, we find three main themes emerging.

First, we see the importance of regime shifting to the company and, at the same time, the difficulties that companies have in adjusting their intellectual property understanding. Looked at from the highest levels, the most significant change for Lego was the move away from patent and towards trade marks as its strongest mechanism of protection. The developments of brands and themes and its reliance on trade mark law throughout the 90s and onwards made a huge difference to the company's success. In fact, the company was so focused on trade mark law that, as we discussed above, it sought to protect the three dimensional configuration of the brick through this stratagem. And most recently, it was successful in the EU in its efforts to use trade mark law to protect the shape of the minifig.[90]

Regime shifting and the use of multiple forms of intellectual property protection to supplement each other is similar to the approach that the pharmaceutical industry uses to extract supra-competitive rents when drug patents expire. Drug companies use the patent monopoly period to build consumer recognition in its drugs, so that when generic alternatives become available, consumers (and doctors) may still ask for the drug by its trade marked name.[91] Like drug companies, Lego may not be able to stop others from copying its bricks any longer, as it no longer has viable intellectual property rights in them. But the company can leverage branded content to ensure that consumers only buy Lego bricks.

Second, we have seen the emergence of Lego as a transmedia company, developing a range of products that rely in turn upon a range of different intellectual property regimes. The *Lego Movie* was, of course, dependent on copyright, various aspects of the *Mindstorms* line have been protected by patent and the laws on confidential information, and all of the Lego range is covered by trade marks. The transition towards transmedia created considerable difficulties for the company as it grew, and it has been challenged by crises of control throughout its history. The company was initially able to rely on strong control via patent; but the boundary expanded and the company was forced to rely on more porous systems of control, such as trade mark law. At the same time the company grew to view intellectual property through the paradigm of

90 *Best-Lock (Europe) Ltd v OHIM, Lego Juris A/S*, Case T-395/14 (General Court, 16 June 2015).

91 G. Parchomovsky & P. Siegelman, 'Towards an Integrated Theory of Intellectual Property', 88 *Va. L. Rev.* 1455 (2002).

partnership that allowed distributed sources of control, which necessarily meant that the boundary of control expanded and became even more porous. Now the company finds that the boundary has moved even further out and because the intellectual property protections are weaker out there at the edges, more slips through the cracks.

All of which is not to say that the company has willingly accepted these limits to the strong, central intellectual property option. As documented above, the company litigated a range of cases related to the protection of the brick after its patents expired, and it faced a series of ignominious defeats in almost every jurisdiction where it brought suit. If Lego has become more accepting of the notion of shared ownership of intellectual property then it has done so reluctantly.

Finally, our story about Lego illustrates the expansion and transformation of the intellectual property system, one that has deepened and ramified over the last sixty years. Lego began with a patent-specific view of its commercial activity, and a monolithic view of the type of control it needed to exert. In the subsequent partnership model, other agents enter the field, owners of additional intellectual property. New legal controls come into play. The household remains the key site of consumption, but it is increasingly, and simultaneously, both an audiovisual domain, and a domain of material culture. In our final participatory model, new agents create further levels of complexity, and expand the field still further: there are non-child subjects and new intermediaries, many of them online. Across these transitions, direct control shades into a state of divided sovereignty; and then into something we recognise more as a form of government at a distance. The most recent phase involves real trade-offs for Lego; but in this period the company has flourished more than ever before.

The next challenges are likely to crystallise around new, increasingly hybridised systems of digital and material reproduction: 3D printing and design, new forms of production, and the wave of emerging online intermediaries in that domain. These new technologies, practices and institutions are likely, once again, to complicate Lego's relationship to the intellectual property system. As the fans, makers, users, artists, players, builders and hackers proliferate and diversify, Lego will need to rethink its understanding of intellectual property once more.