A Lego snowmobile and the elements of miniaturization

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Figs 1-2. Close-up of Lego figure on desk and its components.

In the words of Claude Lévi-Strauss, miniature objects are ‘not just projections or passive homologues of the object: they constitute a real experiment with it’ ([1962] 1966: 24). It is rare however that they are meaningfully interrogated, despite recent efforts to engage with them more effectively as objects with the ability to embody complex ideas in ways which influence human society (Evans 2012; Knappett 2012; Foxhall 2014). In this article I will attempt to examine the processes by which a miniature is conceived and constructed, and consider to what end these techniques have been employed, by connecting a popular plastic toy – a Lego snowmobile – with a subject of global geopolitical importance: mineral exploitation in the Arctic.

Miniatures are the tangible by-products of a series of technical processes known collectively as miniaturization. In miniaturization, practitioners make a series of decisions, influenced by their environment, towards an appreciable result. I hypothesize that these decisions, when applied with skill, result in a combination of three techniques – scaling, simplification, and mimesis, referred to here as ‘elements’ – which together contribute to the creation of a miniature object. This miniature object is then deployed to defined audiences as a tool of suggestion.

If miniaturization is a technical process, then it becomes ‘an action which is effective and traditional’ (Mauss [1950] 1979: 104), operating within a system of interactions which require ‘not just the application of mechanical force to exterior objects, but … qualities of care, judgement and dexterity’ (Ingold 2001: 21). Miniaturization is therefore as cognitive as it is physical in its execution and thus can only be partially observable or quantifiable; however, even partial observations, when properly contextualized, can reveal a lot about a practitioner’s intentions.

The three elements of miniaturization are each dependent on decisions made by the producers, without which the process could not take place. I will illustrate these decisions with a £4.99 household miniature made by probably the most popular European miniature precursor, Lego. It is a figure of a person on a snowmobile from the Lego ‘City’ range, code 60032. I assembled it in accordance with published instructions in about 10 minutes from 36 pieces, although the notion that I was in any real sense responsible for this production is a clever deception: the true producers behind its creation are of course the designers and manufacturers employed by the Danish Lego Group.

From the design concept phase through to the plastic moulding (to say nothing of sales and marketing), Lego have employed a wide array of connected technical processes – cognitive and physical – in creating and distributing this object. This is the smallest kit available in a range which, when combined, allows a customer – the audience of the object – to construct and then interact with a large polar facility dedicated to mining non-specific ‘crystals’. This article does not pretend to be a piece of investigative journalism, but the release of this playful depiction of polar mineral exploitation by Lego may not be a coincidence, given their close and long-standing commercial partnership with Shell, only recently terminated under pressure from a Greenpeace viral protest campaign against Shell’s presence in the Arctic (Greenpeace UK 2014). Could it be that, through the medium of a ubiquitous range of popular toys, Shell and Lego are attempting to normalize or even romanticize polar mineral extraction?

To explore how in this case the process of miniaturization might have been used to subtly influence an audience, I am going to compare the miniature snowmobile with an image of a full-size snowmobile (Fig. 3) used in the Antarctic for a different kind of mineral extraction by astrophysicist Dr Ray Jayawardhana, now Dean of Science at York University. This vehicle was employed in 2011 during a search for meteorites buried in the Antarctic ice sheet (Bettam 2011). In the image, Dr Jayawardhana is pictured seated on a Ski-Doo Skandic SWT model from the mid-2000s, suitably adapted for purpose.

I acknowledge that a single comparison hardly constitutes empirical evidence – the image of Dr Jayawardhana acts here as an illustrative device for the purposes of exploring the three elements of miniaturization. I am also, of course, not suggesting that Lego based their snowmobile miniature on Dr Jayawardhana or on the particular brand of snowmobile he is driving – as will be demonstrated, the Lego miniature cannot be a reproduction of any particular commercially available snowmobile.

Scaling

The first element for comparison is scale. Fig. 6 below presents four principal measurements from each of the examples.

These should be treated as indicative rather than scientific: as noted, the Lego miniature is not a direct comparison with Dr Jayawardhana’s machine and snowmobiles can vary considerably in dimension based on purpose. As a result, considerable margin for error should be expected. It is possible, however, to immediately see one particular discrepancy in the scales: the weight ratio is significantly larger than any of the other measurements.

The disparities in the spatial ratios alone are sufficient to illustrate that this miniature is clearly not an attempt
by Lego to reproduce a realistically proportioned model. Lego designers are not, it can be assumed, careless or lazy: these disparities are a quite deliberate effort to imbue the miniature with qualities which it requires to perform its task. Accurate scaling does not appear to be one of these qualities, but a disproportionate reduction in weight does.

The very essence of a miniature is that it decreases in size from the thing it resembles. This is inherent in the word itself, and it is often considered that the reduction in size is an attempt to intimately engage with the audience. Susan Stewart notes that ‘a miniaturization is effected through the viewer’s stance’ (1984: 134); by its small size, it creates an intimate link between maker and viewer through the conduit of the miniature. Alfred Gell also illustrates the way in which miniaturization can produce this effect with his recollection of a matchstick cathedral he saw as a child that forced him to ‘pay tribute to dexterity in objectified form’ even as he was ironically surrounded by the medi- eval building that the miniature resembled (1992: 47). For Gell, the miniature – smaller, more intimate and approach- able – produced the greater and more lasting effect.

This is a deliberately incorporated feature of Lego: the scale, particularly the weight, is reduced so that a person can interact with the miniature – they can hold it, play with it, destroy it and simply reconstruct it again. This is possible due to the very technique which permits the reduction in weight: the use of modular plastic. At its core, any Lego object is formed from a collection of hard plastic bricks manufactured in a uniform range of sizes and shapes to fulfil particular roles in the construction process. It is this structure that enables Lego customers to create miniature objects small enough and light enough to make effective miniatures for play.

That the miniature’s size allows it to be played with is an essential affordance, one that specifically makes it, in this instance, a toy; as ‘the physical embodiment of the fiction: it is a device for fantasy, a point of beginning for narrative’ (Stewart 1984: 56). By encapsulating messages in reas- suring fantasy, toys become ‘not simply objects for play, but are also a medium of communication between children and adult’ (Barton & Somerville 2012: 63). As educational devices, toys operate as transitional objects which through his recollection of a matchstick cathedral he saw as a child.

The reduction of detail on the Lego snowmobile is significant, while Dr Jayawardhana is a celebrated astro- physicist, with intelligence, personality and free will, the Lego figure has no capacity for thought or action beyond those imposed on it by its audience. Thus, though both may exert influence on their environment, the degrees of complexity of engagement between a living human and a plastic figure are obviously vast.

Simplification also applies to the cognitive technical aspects of the construction process – a particularly interest- esting facet of Lego and similar modular construction miniatures. Considerable effort in design and production – almost all of it totally divorced from the type of activity involved in the design and construction of an operational snowmobile – has gone into generating the impression that it is the customer which is creating the object. In truth, the customer has almost no say in the matter: although on a larger scale Lego bricks can be combined into imaginative constructs, it is notable that this is not the case with this snowmobile, nor with the polar set from which it comes. The bricks in this set and others like it, are not, for the most part, generic construction blocks, but parts specifically manufactured for the construction of carefully engineered designs. These box sets give the impression of individu- ality, but encourage conformity; they are developed and marketed in such a way that it is difficult for a customer to build and play with the miniature in any other capacity than the one determined on the box.

The reduction of detail on the Lego snowmobile is complete: unlike some other makes of miniature vehicle (including some Lego kits), it has no engine or moving parts (other than the pivoting skis) and requires no fuel other than the most basic propulsion by hand. Its lights are merely coloured plastic, and aside from static handlebars there are no controls whatsoever. It also has no windshield: Lego clearly do not anticipate that the driver would face freezing polar winds or debris. These details were consid- ered extraneous and removed as too complex (or unsafe) for the miniature’s purposes in relating to an audience – examples of the ‘distorted dimensionality’ identified as a common feature of miniature objects (Foxhall 2014).
The photograph in Fig. 3 depicts Dr Jayawardhana in the middle of an icefield. His snowmobile is being deployed in an environment for which it was designed. No Lego snowmobile miniature will ever be deployed in such an environment for anything other than humorous reasons. The Lego miniature is instead photographed on a desk. It may seem odd on first viewing to see a snowmobile in this position, but the Lego snowmobile is actually in its intended environment. This is for the simple yet obscure fact that whatever it may be called, the Lego snowmobile isn’t actually a snowmobile at all.

That this miniature was not inspired by any specific snowmobile in anything but the vaguest terms can be proved by examining the rear of the Lego snowmobile. Here, instead of the tracks on Dr Jayawardhana’s machine, there is a smooth convex hemisphere of grey plastic. No snowmobile, especially one involved in mineral extraction, has a similar construct, of plastic or otherwise: such a method of transport on the ice would soon be rough, scarred and useless. On the softer environment of a carpet or table however, which this miniature was designed to be interacted with, this method of travel is smooth and simple, eliminating the complexity of installing moving parts. This alteration clearly demonstrates that this Lego kit is not intended to accurately reproduce a snowmobile in miniature, any more than the plastic figurine accurately portrays a human being. It is instead a repurposing of the snowmobile image for the miniature’s representative task.

Finally there is a simplification in concept. Although Dr Jayawardhana’s scientific work has a negligible impact on the environment, large scale industrial Arctic mineral exploitation is a dirty and dangerous industry with complex geopolitical ramifications (Kraska 2013). The Lego models, accompanied by cheesy animated videos on the Lego website, cut this close to the bone. It is even more complex to exploit quite literally child’s play and creating an informal pedagogical link between the tiny snowmobile and a sanitized, simplified version of a highly controversial issue.

Mimesis

Without mimesis, or resemblance, no miniature could be created, or even envisaged. To create a miniature, one must have a prototype: something to which that miniature can be iconically linked, drawing on that image and adopting some of its character and power (Taussig 1993), but without the utilitarian responsibility of the original. To be effective, the prototype must be something which the intended audience will recognize – in this case, a snowmobile. It is telling that nowhere on the box does the word snowmobile appear. This is partly a consequence of the fact that Lego is an international company in a multilingual marketplace, but this does not devalue the point that children as young as five (or at least their parents, who will actually buy the kit), are considered able to recognize a snowmobile without prompting.

A miniature must always therefore be an iconic resem- blant of a prototype known to the intended audience, although as Lévi-Strauss notes, miniatures do not have to have a physical prototype to be created: the Sistine Chapel paintings are, after all, a miniature depicting the End of Time ([1962] 1966: 23). Although it may not appear so at first glance, such is the case here: the Lego snowmobile cannot be an accurate miniature reproduction of any one snowmobile, but even with its simplifications and alterations it does act as an icon of the entire class of vehicle; it is an imaginary snowmobile which incorporates just enough physicality of the type of object to incorporate its social associations while simultaneously eliminating extraneous detail.

Caution must be taken when considering the idea of mimesis that one does not conflate it with representation. Representation is an action in which something acts on behalf of or symbolizes something else; mimesis is the formation of an iconic link which may or may not have symbolic purpose. There is no rule that something which is representational must look like the thing it represents, or that something that bears mimetic similarity must represent the thing it resembles.

Dr Jayawardhana’s snowmobile cannot be said to be without representation: every object contains an ‘indivisible mix of ritual, myth and technical action’ which they divulge to knowledgeable observers (Lemonnier 2012: 60), but in design and construction it must conform to the requirements of its functionality as a practical tool of transportation in the polar environment. Miniature objects however, are consciously made to be used in unconventional ways. The key is to identify the ‘point on the continuum of miniaturization when its primary function becomes representational rather than utilitarian’ (Phillips 1998: 91). Unlike everyday tools like knives, spades or indeed snowmobiles, which must obey the physical requirements of their utilitarian functionality, miniatures are designed to represent something intangible to an audience – an imaginative, representative functionality enabled by a combination of the three elements of reduction, simplifica- tion, and mimesis, unbound by utilitarian considerations and focused instead on the intangible functionality of the semiotic, an object which bears meaning.

Representation

The Lego snowmobile may iconically resemble snowmobiles, but it does not necessarily or even very plausibly represent them; the Lego miniature adopts some features and dimensions of snowmobiles and abandons others at will. These choices reflect the requirement of the designers to embody particular mimetic powers of representation, indi- cating a series of decisions which contribute to the three elements of play and recognizable that anyone raised in a place where Lego is available can instantly recognize it, understand its role in society, and equate it with their own youth, just as childhood modes of play can re-emerge in adulthood (Sillar 1994: 52-53). It may be that the miniature is deliberately designed to represent a clean, simplified impression of mineral extraction in the Arctic to its audience, ages 5-12.

It might represent all of these things and more. It is this which illustrates the unexpected yet powerful strength of miniaturization as a medium for encapsulating and transmitting intangible ideas. It is a non-verbal, visual, tactile language which can mean different things to different people, or even the same person in different contexts. It can be used to create, through its incorporation of con- nected elements, entire fantasy worlds that reflect not reality that is, but the reality its designers wish for an audience to engage with. Every miniature therefore embodies a series of decisions which contribute to the three elements of miniaturization, with each decision designed to augment the miniature’s ability to communicate with its audience.

Miniatures may surround us, but they do not do so passively or without intent and they do not appear by accident. Whether producing a miniature, buying it, or playing with it, we are all participating in the technical process of mini-aturization and its three contributory elements, and should all be aware of the ways in which small inanimate plastic objects may subtly influence our lives.
Scale of Lego model

<table>
<thead>
<tr>
<th>Lego model</th>
<th>Height (mm)</th>
<th>Width (mm)</th>
<th>Length (mm)</th>
<th>Weight (g)</th>
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</thead>
<tbody>
<tr>
<td>Snowmobile</td>
<td>1330</td>
<td>1100</td>
<td>3110</td>
<td>277,000</td>
</tr>
</tbody>
</table>

Ratio

- Lego model: 1:32
- Snowmobile: 1:22
- Lego figure: 1:35
- Snowmobile: 1:13,850

All measurements excluding Lego figure / Dr Jayawardhana. Measurements for snowmobile from snowmobile.com (2014).