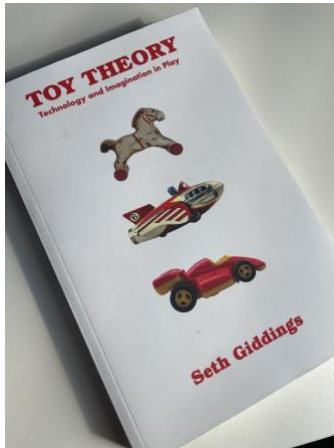


Barbaric Toys: technology, bodies, and play before and after the Human

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My book *Toy Theory: technology and imagination in play*, asks its readers to consider the development of technology from the perspective of play rather than as practical or instrumental application. What if technical innovation were driven as much by experimentation, speculation, performance and hands-on 'toying' as by the identification and satisfaction of immediate material needs? What if technologies were toys before they were tools?

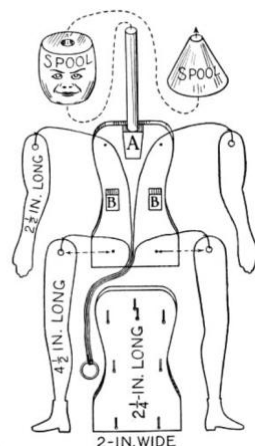
To connect closely with the themes of this conference, today I will concentrate on anthropomorphic play objects, from dolls to automata. What can these artefacts tell us about the relationships between embodiment, imagination, nature and the artificial? And what is the role of play – before the Human (animal and human infant toying) and after (as Artificial Intelligence individuates through game environments and anthropomorphic agents)?



The toy is a universal artefact in human existence, but is rarely addressed in studies of culture, media, and technology. By way of a prologue, I want to briefly note two contemporary contexts in which the toy, with its ambiguous status and unstable meanings, comes more into focus. It is on the one hand it is the least consequential of human artefacts, for children, unserious, often disposable. But on the other, as here, it speaks to cruelty and horror, of threat and prejudice. The child's toy in the ruins of war is a well-established photojournalist cliché, but it has power. Childhood is inseparable from play objects, children explore their own bodies, emotions, and environments through play, so these ruined toys in Gaza are metonyms, synecdoches even, of their 20,000 owners' lives and bodies, also buried in rubble but unpicturable in mainstream news media. These T-shirts are one instance of resistance to the wave of transphobic bigotry that has plagued the United Kingdom in recent years. The cultural politics of the gendered doll here are beyond the scope of my talk today, but I would note that throughout my book, the toy draws attention to, and undermines, entrenched post-Enlightenment binaries of the natural and the cultural, the biological and the artificial, and current discourses of gender fluidity versus biological essentialism. Toys suggest instead material and imaginative change and emergence, the reality of simulacra and the immanent artificiality of all human culture, technology, and behaviour.



little contraptions / petites inventions à sol



In mid-nineteenth century Paris, the poet Charles Baudelaire set out on a walk, first filling his pockets with cheap mechanical toys bought from street vendors to hand to any poor children he may meet. The toys are particularly intriguing objects in this material-cultural microcosm of early consumer capitalism. These cheap “little contraptions”—in the original French, *petites inventions à sol*—are all mechanical in construction and attraction, including “a cardboard Punch and Judy which is worked by a string, or a couple of blacksmiths hammering on an anvil, or a rider whose horse's tail is a tin whistle.” Trifles but at the same time ingenious machines in a morphology of playful objects...

Baudelaire's account notes the mechanical characteristics of these early industrial toys. It hints at economic, social and cultural newness and delineation expressed through these most insignificant and throwaway artefacts. He also hints at a psychological theory of play with technology: the ‘barbarism’ he invokes referring I think more to a kind of primal relationship than violence, though he does assert that children break their

possessions open to find the soul of these toys. I will return to Baudelaire's psychology of toy play to offer some tentative suggestions for the applicability of this toy and play archaeology for contemporary developments in the presentation and application of artificial intelligence.



The book picks up on themes, objects and theoretical approaches that have underpinned my research for quite a long time: theories of everyday and intimate technoculture, with a persistent attention to children's culture and play in and around digital games. Play not only in the cybernetic circuits and virtual realities of digital games, but also in and through physical bodies, material environments, cultural and media ecologies, intangible imaginative operations and tangible physical objects. I have presented and published in the field of digital game studies as it has developed over the past twenty-five years, but have been struck by the lack of attention the field has paid to children's culture in general and to toys as play objects in particular.

Toys...

as evocative objects through which most infants engage with their own bodies' capacities and the world around them

an overlooked component of twentieth and twenty-first century cultural economies

objects whose ostensible mimetic properties become, under close scrutiny to their mobilisation in play, more ambiguous and unpredictable

as objects unstable in their own histories and animation, particularly so in the era of digital culture. What happens to the physical, tangible play object in a media culture dominated by videogames and smart device apps?

as fundamentally technical objects, with material and often mechanical characteristics that shape play and imagination

It asks its readers to look at the development of technology from the perspective of play rather than practical or instrumental application. What if technical innovation were driven as much by experimentation, speculation, performance and hands-on 'toying' as by the identification and satisfaction of immediate material needs? What if technologies were toys before they were tools? So, a thought experiment runs through the whole book, initially playful but increasingly serious:

What if the history and development of technology were not driven by the invention of practical tools and their application to the pressing environmental demands of human survival such as making shelters, hunting and processing animals for food, and the manufacture of clothing? What if, instead, the first artifacts, the first

technical objects—hand axes, spears, sewing needles—were produced not in a time of pressing need but rather in moments of respite from the immediate demands of sustenance, defense, and shelter? What if they were instead the products of a distracted manipulation of materials to hand—sticks, stones, animal bones, and skin?

So... What if technologies have always been at least as much toys as tools? And what if the technocultures, from the paleolithic to the postdigital, have always developed, individuated, as much through noninstrumental motives of play, play with materials, machines, bodies, and ideas? This would question assumptions of the primacy of the human mind and imagination over the body and its environment, the hierarchy of—and significant separation between—cognition (and imagination) and embodied (and environmental action). What if we were to rethink the anthropology of technoculture, and the philosophy of technology, as a nonteleological and noninstrumental development driven by play in and with environments and objects, by aesthetic and kinaesthetic motives, not any immanent desire for larger control?



Ad lib on invention of the wheel. Mesopotamia 6000 years ago for ritual use, not for farm vehicles for another 2000 years, then abandoned. Pre-Columbian Mexico: rituals and toys. Popular toy in Ancient Egypt and Rome.

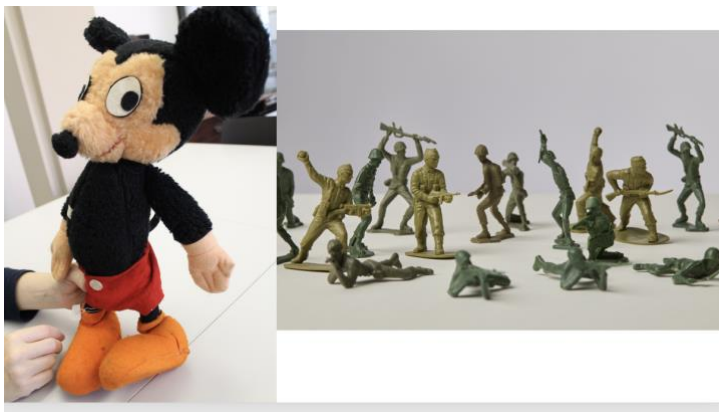
So, these small pottery or wood figures of animals reverse the conventional timeline of invention: that practical machines are subsequently modelled and scaled down by an indulgent adult for children's play. In the case the wheeled machine is created not to address efficiencies of energy and labour in the transportation of materials (wheels would not work in the mountainous or sandy environments of Mexico and Egypt), but by the playful possibilities of a mechanical device built to the scale of child's hands and the sweep of child's arms as the animal is animated in its frictionless articulation with its immediate environment. In Mexico and Egypt the invention of the wheel was, before anything else, an invention for symbolic, imaginative and playful 'useless' activity. It is worth noting that the mechanical aspects of these toys challenge dominant notions of aesthetics and symbolism too: they clearly cannot denote actual animal bodies and locomotion, but neither are these wheels abstraction, ornament or stylisation in the ways that pre-industrial non-naturalistic art is generally interpreted. Here aesthetics follows non-instrumental function, and a *sort-of* animal looks back not to its actual

model but forward to its animated, embodied instantiation in play - a copy without original, a simulacrum of sorts.

Along with their symbolic and intertextual pleasures, a phenomenology of scale, tactility and operability then is key to the attraction of toys and toy-play – the relationships of objects and devices to hands and fingers, their technical capabilities and haptic surfaces.



Attention to toys as technical objects, then, troubles the prevailing notion of technological development as driven by the identification and satisfaction of material, practical and instrumental needs for human society and economy. Toys are technical and operable. They often have moving parts, and as such are machines in their own right, for example jointed dolls, train sets, or construction sets such as Meccano here.



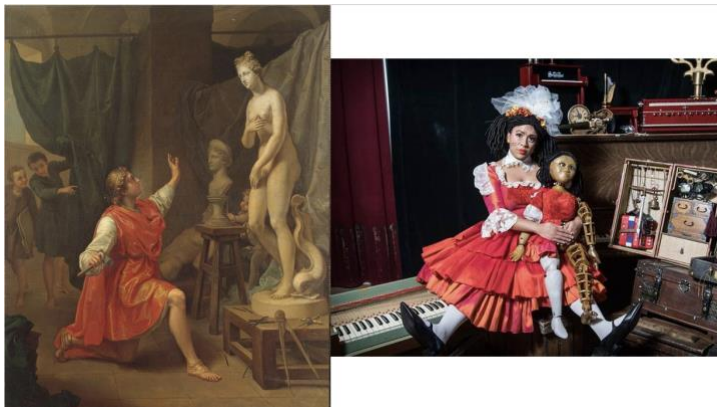
Non-mechanical toys too have their functionality entwined with their material and technical characteristics: the cuddly toy with its soft surface and pliable substrate, designed for tactile and reassuring intimacy; the toy soldier that makes sense only as one of larger set, arranged and deployed in a playful strategy. Toys are functional, they are used to *do* things, just not things with immediate practical ends. They are symbolic, communicative objects, like paintings and ornaments, and play with toys has an abstract formalism and intensity that is redolent of ritual. But they are also handled, placed, animated and combined in the imaginative and voluptuous ‘work’ of children’s play.



Play with toys can be considered Pre-Human. The child in humanist thought is not-yet-Human, variously an idealised being in a state of natural innocence, or in an as-yet unformed and pre-rational existence. Some animals play with toys – domestic dogs and cats are obvious examples, but corvids and octopuses also manipulate objects for non-instrumental ends. There is even evidence of symbolic play: juvenile chimpanzees select appropriately sized and shaped pieces of wood and tend to them as if they were babies, laying them down to sleep in toy nests.

The human baby's own body is its first toy: toes are grabbed, vocalisations test and extend capabilities. As the anthropologist Marcel Mauss put it in his techniques of the body lecture in 1935: "The body is man's first and most natural instrument".

These chimp artefacts bring me neatly to my main case study: Dolls and automata.



Doll as privileged object in this context: an object for thinking about the edges of the Human: life and movement, thought and reason, life and death, object and subject... Greek myths of Haephestus the smith-god, Pygmalion the sculptor whose creation Galatea comes to life, the tales of Hoffmann, Mary Shelley's Frankenstein, and so on... all are regularly drawn on in contemporary explorations of theories of artificial life.



automata video

We can add actual automata to these mythical and fictional creations. Actual androids, notably the spectacular automata of Eighteenth Century France, are often included in cybercultural and posthumanist genealogies.

The term 'android' was coined at the time to describe these human-like devices, elegantly clothed with china heads and hands and with jointed limbs. They simulated music playing, drawing, and writing for well-to-do audiences and royal courts across Europe.

Jacquet-Droz Musician 1770s



Jacquet-Droz's Writer, for instance, is a simulacrum of a boy seated at a desk, able to write texts of up to forty characters long with a quill pen and ink. His head and eyes move as if following the script. His internal workings include a set of wheels to programme the sequence of letters to be written.



At every stage of technique since Daedalus or Hero of Alexandria, the ability of the artificer to produce a working simulacrum of a living organism has always intrigued people. This desire to produce and to study automata has always been expressed in terms of the living technique of the age.

Norbert Wiener

In particular historical moments, self-moving machines personified the technological paradigm of their day. Fashioned from dominant technical processes, principles, and materials, they also conjured up imaginaries of these very technics. And very often these were imaginaries of the animate, of 'living technology'. Writing at the beginning of the information age at the end of World War 2, the cyberneticist Norbert Wiener wrote:

'At every stage of technique since Daedalus or Hero of Alexandria, the ability of the artificer to produce a working simulacrum of a living organism has always intrigued people. This desire to produce and to study automata has always been expressed in terms of the living technique of the age'

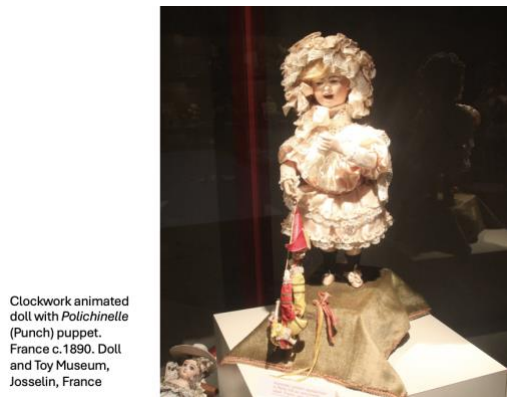
Ad lib: Talos and the bronze age to the clockwork Newtonian cosmos figured in the Writer. At once a practical motive technology and a model of how the universe worked.

These simulacra are thought experiments realised in mechanical form, at once spectacular novelties and prompts to philosophical and scientific reflections on the nature of life, consciousness, and reason. In their design, and in the showiness of their presentation to audiences, prompted philosophical or religious reflection on the workings of the soul, consciousness, or the invisible realities of the microscopic.

What I add to the quite extensive literature on automata is an insistence that we take the *toylike* aspects of these self-moving figures seriously – as central to their significance, not incidental. The toyetic dimensions of mechanical animation is a technocultural mode immanent to science and technology from the ancient world to contemporary AI and robotics – but one that I argue should not be separated from mundane children's toys and toy play.

Recent critical reflection on robotics, virtual reality, AI and other cyborgian intimacies between the human body, mind, and technology often draws on this long genealogy of automata. It generally acknowledges their toylike appearance but downplays any continuity with children's play objects in favour of theoretical concerns about technological paradigms and imaginaries, or the persistence of the irrational and the magical in the rationalist discourses of Enlightenment natural philosophy. I argue that they were, significantly, characterised by key toyetic aspects: a performative mode of demonstration combining wonder, amusement and technical materiality; an articulation of contemporaneous materials and mechanics with distinct technological

imaginaries; and a strong and persistent relationship with play, games and the toylike. The automaton's purchase on protoscientific and natural-philosophical enquiry was inseparable from its affinity with the child's plaything and its cheap distractions, simulacral trickery, and hands-on play.



Most of the eighteenth-century automata looked like large dolls, and, with their ceramic faces and elaborate clothing, were made using materials, fabrication methods, and aesthetics similar to those of high-end toy manufacture at the time. Their imaginative impact was no doubt heightened by the simulacral sense of the doll as symbol or model of the boundary between the animate and the inanimate, particularly with the verisimilitude these new manufacturing processes allowed.

Though these devices were at the vanguard of technological innovation, they were not designed for instrumental or productive use – they were neither tools nor prototypes for tools. They were mechanical thought experiments, asking their audience to take the short imaginative step from watching a machine that is ingenious but explicable to one that can – preternaturally – think and reason for itself. The Writer captured this unsettling proposition as he scratched on his pad, in a play on Descartes, a question that might speak for future androids and simulacra: 'I am not thinking, Do I therefore not exist?'

Toy-like attributes in automata go beyond their surface level aesthetics and materials. There is an underlying simulacral and performative character that renders even their natural-philosophical and scientific motives playful, spectacular, wondrous and quasi-magical. Audiences revelled in, at once, the marvellousness of their artifice and the ingenuity of their technicality. Secondly, the toyetic is an ideal technocultural form for the embodiment and demonstration of new technologies, material forces and their relationships. A toy is a concentration or condensation of materials, ideas, aesthetics, forces and mechanisms into a figure easily grasped the hand, eye, and imagination.

If the toyetic dimensions of automata are important - fundamentally important as I argue, then what can critical and anthropological attention to children's toys bring to these ideas about the instantiation of models of the human, its position in the cosmos, and its boundaries and connections? Let's look at dolls to find out.



I've mentioned nonhuman animal dolls, and the notion that our first doll was our own body.

Doll-like objects are among the oldest and most persistent type of cultural artifact, and are culturally, geographically, and historically ubiquitous. This said, they are often ambiguous objects, with shifting distinctions between child's plaything, religious figurine, effigies, and funerary figures.



Archaeologists suggest that the earliest figures made specifically for children's play are found in Ancient Egypt and Greece. Significantly it is their mechanical character that separates them from ritual figurines: their moveable limbs engineered for animation and posing in play.

Though universal, their form at any particular historical juncture is markedly contingent: with culturally specific styles, symbolism, mechanics, costume and mode of manufacture. It is a boundary object mediating ritual, magic, art, craft, and play. It teaches love and care, figures sex, and animates symbolic violence. As we have seen, doll-like objects toy with imaginaries of animation, and coming to life. The commercial manufacture and consumption of toys in the nineteenth century inspired poetic and philosophical reflection on the doll as simulacrum—a likeness of, or substitute for, the human being.



And in the late twentieth and early twenty-first centuries, the gendered doll—particularly Barbie, with her own late-modern paradigmatic plasticity—has emblematised and allegorised gendered cultural politics and theory. The prevalence of the evil animated doll in TV and cinema horror epitomises both the ancient feeling of immanent animation and the uncanny and a contemporary horror at the fakes and deceit of late-modern culture.

At moments in cultural history and prehistory the doll encapsulates something fundamental, cosmological even, about the relationship between the human body and its technological and symbolic milieus. At other times, often long periods of time, the doll recedes from significance, falling back into the everyday and unrecorded world of childhood.



c. 1460

Ad lib on ambiguity of doll as representation.

Dolls circulate in popular media culture often as creepy objects of fear, a feature of horror films. A key intervention in Western thought that makes an explicit connection between automata, toys, and other simulacra of the human body and mind is Freud's concept of the uncanny. For Freud, the doll channelled an archaic terror: not only the sense that the inanimate artefact might come to life, but also the obverse: a reminder that every human body will ultimately be rendered inanimate, a corpse – post-human. Importantly, both Freud and Ernst Jentsch, whose work Freud drew on, use as examples the life-size dolls, or automata, of ETA Hoffmann's stories, particularly *The Sandman*. And each of them implies that the toyetic dimensions of the uncanny are an adult issue, a phenomenon of the adult mind. Freud recognises this, noting that children themselves have no fear of their toys coming to life, and Jentsch suggested that children's toys escape the uncanny because of their scale and familiarity.

Children's imaginative play can, and often does, conjure visions of violence and death, but these are very different to the adult imagination. In many ways the child's imagination offers a more productive epistemology of nonhuman animation, beyond established and crude assumptions of magical thinking. They epitomise a uniquely toyetic psychological pattern I touch on throughout the book: a hands-on and operable thought experiment that troubles established distinctions between knowledge and belief, the rational and the magical, truth and deceit, the observational and the speculative. If we apply this to adult audiences of the automata - "Ok,' we might ponder, "this here-and-now marvellous machine doesn't think, but our operation of it helps us imagine one that might, and to muse on what an actually thinking machine would entail." To reiterate: this is a mode of thought with significant resonances with the clear-headed 'what if' and 'as if' gambits of children's imaginative play with toys. They know their dolls and animals are not alive but in the compelling reality of play they are not *not* alive.

So, sex, life, death and deceit are immanent to the child-doll relationship but in quite different ways to the fevered and gothic adult imagination in the modern era. Feminist memory work on doll play, notably Barbie play, provides rich evidence for this.

Helen S. Schwartz explains that "We know from personal experience and anecdotal evidence that girls dressed Barbie dolls up and sent them out shopping, but we also know that other girls (or even the same girls at different moments) pretended that their Barbies were prostitutes, daring spies, or suicidal icons of the order of Marilyn Monroe, to be buried in the back yard"

Erica Rand's adult informants offered memories of "how much they had loved or hated Barbie and about what they had done with and to her—how they had turned her punk, set her on fire, made her fuck Ken or GI Joe".

Lois Kuznets argues that the doll is "beyond all other playthings—teddy bears, toy tigers, or toy soldiers not excepted—the most capable of arousing a child's violent longing or loathing". Doll play is, she argues, marked not only by "intense absorption" but also the "abusive acting out of negative emotions on the body".

I would note here that I am not interested in discerning 'transgressive' from 'programmed' or 'prescribed' play, as we might in adult media consumption. The notion of transgression in children's play is misleading: the flowering of images, jokes, songs, and scenarios driven by the taboo and the corporeal, the sexual, and the excretory seems a universal trait in young children's play, mischievous to some extent, cathartic maybe for maltreated children, but also a natural impulse in the exploration of bodily existence and growth.

Barbaric toys. In the Baudelaire essay with which I opened this talk, the poet describes toys as 'a machinery of barbaric simplicity,' in part because of their primitive simplicity, their aesthetics driven by economies of their materials and their mode of manufacture, But also because they are the child's introduction to subject-object

relations, a ‘metaphysical stirring’ in which children seek to break open their toys ‘to get at and *see the soul* of their toys.’

Now, I’m not convinced that subsequent ethnographic work, limited as it is, backs up Baudelaire’s argument as a universal desire, but it chimes with my earlier insistence on a profound difference in imaginative and technical operations in children’s play. In imaginative play, objects are animated, but children are not magical thinkers as is so often assumed. They know their toys are not alive – but in the intensity of play itself, their toys are not not alive. There is a third zone between the animate and inanimate.

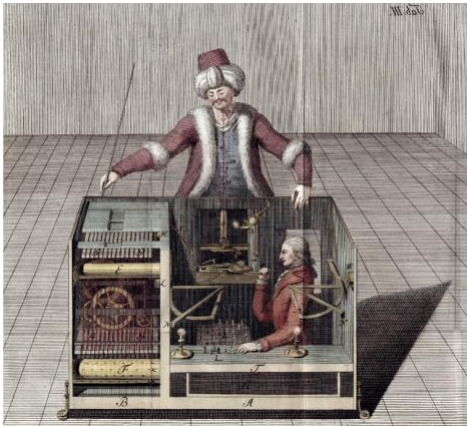


I’ll take an example from the new domain of computer-based playful automata. In the 1980s Sherry Turkle conducted participant observation of children playing with interactive electronic toys and games such as Merlin and Simon. These devices responded to the child’s engagement in a way that pre-digital toys did not. The players reflected on the nature of these devices. One girl explained that they were not alive in the way that a cat was alive, but they were ‘sort-of’ alive.



The toy then offers alternative ways of grasping the play of knowledge, deceit and illusion, that, I would argue, offers insights into human-machine relations more broadly in an age of robotics and AI. The child knows the toy (interactive or not) is not actual living being, but in the moment of play it is more than enough that it functions *as-if* it were.

From the primitive *as-if* gambit of the chimp and its stick doll to contemporary play with doll-like figures animated by fuzzy logic in games like The Sims, we can trace a diffuse genealogy of ludic, imaginative and epistemological attitudes. From Ancient and Enlightenment automata to virtual reality applications and ChatGPT, the dynamic is the interplay of knowledge and belief: we know we are seeing an illusion, we know the seductive visible surface hides inner mechanisms, and we take pleasure in both being nearly-tricked and in the spectacle and ingenuity of this deceit and its fabrication.



Von Kempelen's famous Chess Player epitomises this dynamic: audiences knew it was a trick but were enthralled by its ingenuity and returned again and again to try to figure out how it was achieved. As with spectacular developments in AI today, the attraction of the Chess Player and its automata forebears lies as much in their invitations to imaginative extrapolation as in their actual abilities. Again, this device *doesn't* think, but it seems less unthinking than anything seen before, and... what if it *could* think?

This overarching toyetic imaginative regime then resists the fundamental binary oppositions of recent cultural theory, of nature and culture, and of knowledge and belief/fetishism, but it does not simply valorise or inscribe either instinct or magical thinking in post-Enlightenment rationality. As its presence in the play of animals demonstrates, the toy precedes and transcends both magical thinking and the rational and realist. It hints at a mode of relationality between artefact and player (and the mobilisation of each) in which their separation is collapsed. Like the transpositions of religious ritual -- but everyday and without superstition—preternatural not supernatural.