A WORKING MODEL OF THE WORLD

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LifeSpace University of Dundee

THE WORLD OF THE MODEL

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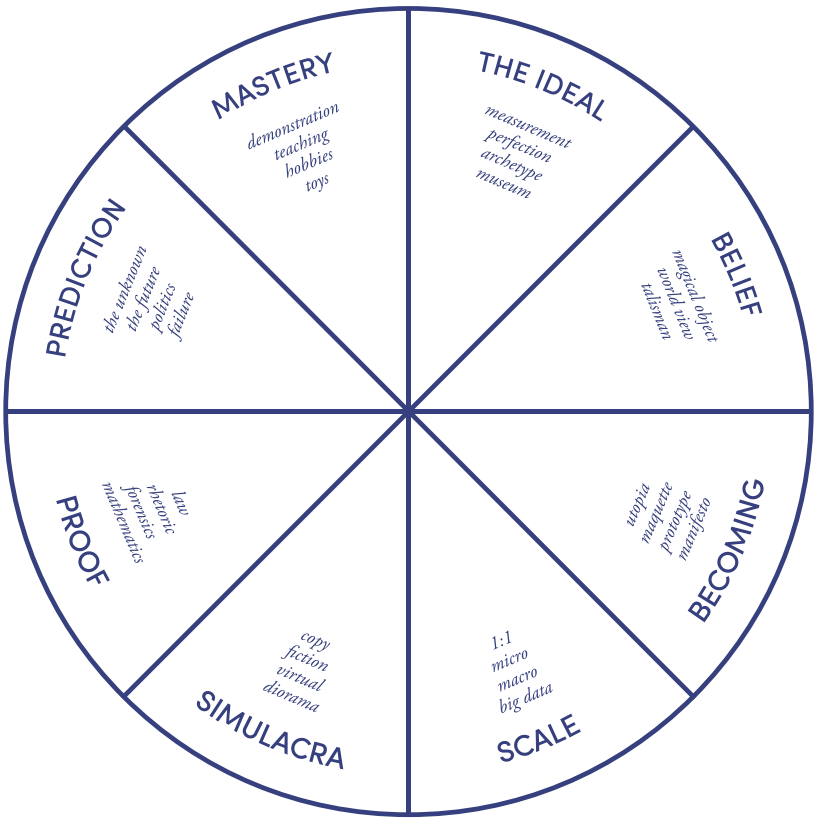
A Working Model of the World explores the practical, philosophical and symbolic work that models do for us, and asks how we use models to contemplate, experiment, invent and teach.

The artists in the exhibition interrogate the role of models in human experience and deploy techniques and forms of model-making in their work. Alongside the artworks are models borrowed from university and museum collections. This eclectic combination invites a conversation between different forms of material thinking from many disciplines.

Models create small worlds, but the world of the model – as concept and tool – is infinite. To get traction on this expansive field we offer eight ways of thinking about model experiences: The Ideal, Belief, Becoming, Scale, Simulacra, Proof, Prediction and Mastery. These eight angles on the model blend into each other - offering different perspectives on the concept of the model, rather than rigid classifications. They cut across disciplinary lines– revealing similarities in the way models figure in different branches of knowledge.



The Ideal

Archetype, Perfection, Measurement, Museum

The Ideal is *the* model from which all others take their measure. From the model kilogram to the role model, *the* model stands in perfect relation to all the subsequent, imperfect, versions that follow its example. The platonic state of the ideal model (a tautology) gives it a motivational force – both moral and practical. It mobilises aspiration, demands imitation, but resists exact replication. Our experience of the ideal model is one of striving or reaching towards.

Like all models, *The Ideal* has an ambivalent relationship to reality. Whilst it certainly exists in circumscribed and controlled conditions (the airbrushed front page, the laboratory, the manifesto, the architect's studio) it cannot survive outside of these small, perfect worlds. The museum and the "white cube" of the gallery are themselves such small worlds - idealising spaces, where civic comportment can be modelled, or new social models trialled.

Belief

Talisman, Magical object, World view

Models crystallise beliefs about how things work and therefore shape human relationships to the world. Mental models determine the kinds of information or evidence we pay attention to. Social, political and religious models can fundamentally influence a sense of legitimate knowledge and action. Theoretical models of complex phenomena (such as consciousness or particle physics) effect how we understand ourselves and the systems and ecologies around us.

Belief includes magical objects, such as voodoo dolls, talismans and lucky charms, that are invested with power to act in the world.

Models are usually thought of as non-linguistic entities, but language itself can be seen as a model for a society or a belief system. Language encodes world views, shaping what can be imagined through what can be said.

Models of belief are often invisible whilst we continue to believe in them. When they are supplanted or fall from favour, they can become absurdities and even embarrassments. Wars are fought over such models – in lecture halls, the press and on battlefields.

Becoming

Maquette, prototype, utopia, manifesto

Models play a crucial role in many creative processes such as design, engineering, theatre, architecture and sculpture. As drafts of new ideas models are causeways between imagination and reality, they are things that bring other things into being. This gives them a distinct *tempora*l trajectory as objects that herald and shape the future. It also gives them a seesaw ontology, as the pivot between productive contradictions such as fluid and fixed, material and immaterial, flexible and concrete.

Models of things-to-come can be about the discovery of the future (finding-form). They can also be about persuasion and rhetoric – created to win over a client (presentation models) or an entire society (manifestos and utopias). Social, economic and political models intersect with *Belief*, *Proof*, and *The Ideal*, and are *always* in the process of becoming.

Scale

Micro, Macro, 1:1, Big data

Scale is a crucial element of model making, with ratios fixing the relation of model:target system. Small scale models create miniature worlds, and turn us into gods and giants. The lure of the miniature is well theorised: its ability to concentrate significance makes the tiniest of details (the miniscule iron in the dolls-house kitchen) fascinating in inverse proportion to its size. Since the invention of microscopy, our ability to magnify has been as compelling as our ability to shrink.

The crucial measurement here is the human being. Models bring both the macro and the micro – the extremely large and extremely small - within the reach of human perception and manipulation. We delight similarly in the grasp-ability of ball and stick atomic models and mechanical solar systems.

Data and agent-based models translate micro-behaviour (such as choosing a house) to macro-consequences (such as increasingly segregated communities) with human-scale impact. Here the complexity and opacity of the model, and the assumptions it encodes, coupled with the enormity of big data, create what we might think of as the anti-model – a powerful tool that renders data operable for far-reaching decisions, but un-graspable by those whose lives it affects.

Simulacra

Virtual, Copy, Fiction, Diorama

From the immateriality of computer games to the misdirecting materiality of wax apples, simulacra bring together the great diversity of stand-ins, copies, fictions, and fakes. Models that mimic the things they represent have a beguiling ontology and varying status with regards to *The Ideal* – they may be a pale imitation of the original, or appear more vibrant and attractive than the thing itself.

Exquisite natural history models, such as Dr Auzoux' papier mache flora, are some of the most celebrated of such objects. These examples of artful science exhibit the aesthetic excess inherent in models – where beauty often exceeds utility.

The future of the model is arguably in the virtual realm of computer simulations. Escaping the limitations of the physical world, such models effectively dematerialise us, so that model and avatar can exist in the same scaleless plane.

The pre-cursors of contemporary virtual environments are the three dimensional fictions of panoramas, dioramas and stage sets. These model worlds offer bounded arenas in which world-views can be staged. Of all of these forms, Worlds' Fairs are perhaps the pre-eminent "working models of the world"– in which real-things (from industrial inventions, to produce, to human beings), become models of themselves, dramatising global flows of trade and power.

Proof

Mathematics, law, forensics, rhetoric

Models give form to truth, or help us find truth through form. As forensic architect Eyal Weizman points out, this is the case in both law and science, where truth is measured as probability and models are created to represent the most likely version of reality.

It is also the case in disciplines where one measure of truth is *beauty* – such as art and mathematics. In this way models support both generative and forensic processes. They can offer "proof of concept" for a theorem or a creative instinct, they can demonstrate the feasibility of a bridge or, as Weizman suggests, be called as witnesses in courts of law.

The line between *Proof* and *Prediction* depends on different models of truth and thresholds of uncertainty. This line is often called into question to destabilise truths (such as man-made climate change) that are unthinkable within certain models of *Belief*

Prediction

The unknown, the future, politics, failure

Predictive models allow us to leap from the known to the unknown, often (though not always) in the direction of the future. The "standard model" in particle physics predicts the discovery of certain things (the Higgs boson for example), which experimental physicists then search for. Climate change models predict the consequences of our actions buffeted by a perfect storm of complexity, high stakes and vested interests.

Predictive models are the engines for stories that conjure a particular future. Since such stories are often created to guide planning and action, they can be self-fulfilling prophecies. In politics models are rhetorical footballs, used to justify policy or undermine credibility.

If battles are fought *over* models of belief, they are fought *with* models of prediction. The grand failure of pollster models in 2016 to predict voter behaviour is offset by the rise of a new kind of strategic modelling, where aggregated social media activity enables both massive data analysis and highly personalised communication strategies.

Mastery

Toys, hobbies, teaching, demonstration

Models help us to gain power and control over a small part of the world. This potential for mastery may be part of structured learning (such as scientific demonstration models), or play (such as dolls houses or construction toys). Such models allow their users to act out scenarios (playing shop or conducting a surgical procedure), creating simplified fictional arenas in which to develop expertise that can be applied in the real world.

Models simplify parts of the world in many ways including scale, idealisation and analogy. Analogical models allow us to grasp something complex through a stand-in(like hydraulics for economic systems in the famous Moniac). All of these forms of simplification imply distortion, which is the price of the insights that models afford.

Mastery also refers to the dynamics of power, desire and ownership at work in the world of hobby models – from train sets to matchstick buildings - where makers painstakingly create their own miniaturised versions of beloved things: demonstrating their devotion with the skill and attention of their modelling. In these perfect small worlds *Mastery* slips over into *The Ideal*.

A Working Model of the World in Dundee features art works by Maria Fernanda Cardoso, Kate Dunn, caraballo-farman, Emily Floyd, Jo Law, Sascha Pohflepp & Chris Woebken, and Karolina Sobecka alongside models from the University collections and research and teaching staff at Dundee. Curated by Dr Lizzie Muller (UNSW Art & Design) and Holly Williams (The Curators' Department) with LifeSpace. A Working Model of the World was developed in partnership with UNSW Galleries, Sydney and Sheila C. Johnson Design Centre, The New School, New York. This exhibition is supported by the Wellcome Trust Institutional Strategic Support Fund (ISSF) at University of Dundee's School of Life Sciences.