The (F)Laws of Gravity

Chris Thurlbourne

The (F)Laws of Gravity explores forces of expended energy, unseen and unknown – specifically energy exerted through production and how it can influence a material's form by revealing evidence of the consequences of embedded energy, and exposing new spatial experiences. This exploration becomes a prerequisite for investigations into instability, unpredictability, and transformation, activated by embedding forces of expended energy, and invite us to see that uncontrollability can generate quality. That thought emerges through material interaction, and that meaning and form when co-created encourages us to think with, think through, and think alongside the substances around us.

The principal material for this ongoing research is recycled plastic. Plastic products are highly controlled, predictable, and follow strict guidelines to achieve consistency. Plastic, perhaps more than any other material, has become a symbol of control. It is manufactured to be uniform, predictable, and efficient. Most plastic objects appear finished before we ever encounter them – smooth, sealed, anonymous. Unlike wood, clay, or stone, plastic rarely carries the visible traces of its origin or the marks of processes that shaped it. This anonymity has contributed to the perception of plastic as disposable, as waste, and as fundamentally alien to our experience of material life (Ingold, 2011; Geyer, Jambeck, & Law, 2017). Plastic is treated as a disposable material, valued for function or convenience rather than for its substance or properties. As a result, plastic is often excluded from the kinds of tactile, perceptual, and conceptual relationships that have historically characterised our engagement with matter.

Yet when plastic is observed during its formation, when it is heated, softened, and allowed to move, something surprising happens. Gravity begins to leave its mark. The material sags, stretches, pools, and thickens under its own weight. Subtle variations appear. The object stops being fully controlled and begins to behave like a natural substance. Its form emerges from interaction rather than imposition. This process allows the material's qualities to become visible: its viscosity, elasticity, and flow, which are hidden when plastic is mass-produced or industrially constrained. By allowing plastic to behave according to its own tendencies, the research exploration invites us to see plastic as a material that acts, responds, and participates, rather than as inert or disposable.

Figure 1: Plastic prototypes. Photo, copyright, the author

Central to the work is the idea that to achieve quality one does not by default require control. In industry, quality control assumes that good products are those that conform precisely to a pre-set standard, with any deviation treated as a defect (Deming, 1986; Montgomery, 2013). But systems in nature show us a different possibility: the uncontrollable can generate quality. In the Earth's mantle, rock that seems solid flows under heat, pressure, and gravity over millions of years. Its slow, uneven motion produces stability and form, not through control, but through responsiveness to forces beyond human influence (Karato, 2008; Turcotte & Schubert, 2014). Likewise, when plastic flows, sags, and folds in response to heat and gravity, it produces forms that are coherent, resilient, and compelling. Quality emerges from negotiation, not domination.

This idea aligns closely with the work of Lambros Malafouris and his Material Engagement Theory. Malafouris argues that thinking and meaning are not confined only to the mind. Instead, they emerge through sustained interaction with materials. As he writes:

Thinking is usually understood as something we do about things in the absence of things. On the contrary, thinging denotes the kind of thinking we do primarily with and through things. For the material engagement approach, withness and 3horoughness take precedence over aboutness. There are no two separate processes, one realised on the 'inside' and the other on the 'outside,' but a single process of cognitive becoming. Things have a cognitive life not because of what they represent, or how they can be represented, but for what they do, and meaning emerges from the parameters of their performance and usage as actualized in the process of engagement. – Malafouris (2013:117)

This passage highlights a core principle of Material Engagement Theory: meaning is not imposed on objects by the mind; it emerges through interaction with them. Objects, substances, and materials are not passive. They participate in thought, decision-making, and creation. In this research, plastic behaves as a 'thinking material', responding to forces, recording interactions, and shaping form in collaboration with the author. Gravity, heat, and the material's own properties act as co-authors, making the resulting forms the product of dialogue, not domination.

The plastic experiments in the exhibition are suspended from a glass façade, itself constructed from meticulously engineered metal frames and sheets of float glass. These materials are the epitome of control: every dimension, every surface finish, and every joint has been predetermined, tested, and manufactured to exacting specifications. Unlike the plastic objects they support, these architectural materials reveal little of their own history; the iron, steel, and silica that comprise them have been processed and homogenized to such a degree that their origin and the transformations they have undergone remain hidden. Where the plastic forms record interactions with heat, gravity, and material behaviour, the metal frames and glass surfaces are almost entirely predictable, offering no evidence of contingency, variation, or responsiveness. Their uniformity creates a silent backdrop, an ordered lattice that frames the creative unpredictability of the plastics, yet simultaneously contrasts with it. The highly controlled, anonymous, and engineered architecture serves as a stage upon which the

emergent, contingent qualities of the plastic are revealed. In this setting, the research exhibited makes visible a tension between materials we have dominated and materials developed through negotiation, prompting to reflect on how knowledge, control, and perception differ across the material world. The metal and glass, though flawless and precise, are mute, they do not act, resist, or respond – while the plastic in front is alive with interaction, memory, and agency.

Figure 2: Plastic prototype under production. Photo, copyright, the author

By foregrounding plastic's behaviour, the works invite us to experience material differently. It allows us to perceive its intrinsic qualities, its elasticity, its flow, and its responsiveness. Qualities that are invisible when plastic is used in mass production. Observing how material sags, stretches, or folds helps us form a new relationship with it: one that values responsiveness and adaptability rather

than control and disposability. Plastic in this research is not just a functional material or a source of future waste even; it is a participant in form-making, capable of revealing the forces that shape it and of expressing properties that would otherwise remain hidden.

This perspective challenges traditional ideas of artistic authorship. In creating these works, the author does not impose a predetermined form but instead engages in a process of negotiation with the material. Gravity, heat, and resistance are collaborators in the form making. The final artefacts are not copies of an ideal plan; they are records of interaction, documenting a conversation between human intention and material agency. They show that creative quality can arise from openness to the uncontrollable rather than the suppression of variation.

Scientific research supports this approach. In materials science, plastic deformation demonstrates how substances change shape under sustained stress, often producing forms stronger or more resilient than those imposed by rigid control (Ashby & Jones, 2012). Geophysics shows that Earth's dynamic stability depends on continuous, uneven deformation rather than rigidity (Turcotte & Schubert, 2014). Evolutionary biology emphasizes that adaptation and coherence emerge through responsiveness to complex environments, not through uniformity or perfection (Lewontin, 2000; Kauffman, 1995). Across these domains, a consistent principle appears: uncontrolled, emergent processes can generate quality.

This research, and the works produced, embody that principle. By allowing plastic to respond, flow, and deform freely, they make visible the potential for materials to be active participants in meaningful making and creation. Twofold, we are invited to reconsider plastic, not as inert or disposable, but as a material that acts, remembers, and responds. Plastic aside, the work opens the possibility of forming other relationships with materials, based on attention, responsiveness, and engagement rather than domination or control.

Ultimately, the research suggests that we reconsider what it means for an object to be 'good' or 'well made.' Instead of defining quality in terms of conformity, uniformity, or control, we can recognise forms that emerge from dialogue with forces, materials, and environments. The uncontrollable is not chaos; it can produce coherence, resilience, and beauty. Plastic's folds, drips, and sags show that the qualities of matter can be instructive and expressive, revealing information about

forces, time, and conditions that produced them and invite us to form new associations with a familiar material as a result of unfamiliar production, and encourage new engagements by just observing and scrutinizing what we see and experience.

Figure 3: Plastic prototype under production. Photo, copyright, the author

Here, plastic does not deny nature. It participates in it. Gravity, heat, and resistance shape it as they shape rock, soil, or mantle material. By engaging with the material on its own terms, we form relationships that emphasise attention, observation, and responsiveness. This work reconsiders how to perceive and value material, suggesting that we should learn to respect material's agency, respond to its behaviour, and appreciate the quality that emerges from interaction. That thinking and

meaning are not only confined to the mind. Instead, meaning emerges through sustained interaction with materials.

In the research, the works invite us to see that the uncontrollable can generate quality, that thought emerges through material interaction, and that meaning and form when co-created encourages us to think with, think through and alongside the substances around us. By embracing the relational, responsive, and emergent qualities of matter, we open ourselves to new ways of understanding, valuing, and connecting with the material world.

Here, plastic does not only resist disposability; it encourages us to see, to think, and to value differently. It reminds us that whatever the material type, like the Earth, they are participants in processes, not mere static matter. The works invite viewers to recognise the qualities of matter itself, acknowledging that the uncontrollable can be as generative as the controlled, and that quality is often discovered, not imposed. Ultimately, the work invites us to rethink what we value. Instead of asking whether an object is controlled, identical, or efficient, it asks whether it is responsive, coherent, and honest even to the forces that shaped it. In a culture obsessed with precision, the research argues for another kind of quality – one that emerges when we allow materials to behave, to resist – and to become where meaning and our relationship to material matter emerges from the parameters of their performance.

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BIO:

Architect Chris Thurlbourne was educated in the UK and won the RIBA Silver Medal for his thesis project. He has been active for over 30 years as both educator and practitioner. He holds the position of Associate Professor at the Aarhus School of Architecture, Denmark and has international teaching experiences, including an external examiner at The Bartlett School of Architecture UCL. His practice, STUFF, has designed awarding buildings, most notably the Renover-Prisen DK and Arkitektur Prisen DK. He is also an active researcher specialising in undesirable waste as a resource.