When making becomes divination: Uncertainty and contingency in computational glitch-events

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This article investigates those aspects of computation that concern uncertainty, contingency and indeterminacy. Starting from a critique of current dominant models of computation, and drawing on the philosophical notions of the virtual and the event, uncertainty, contingency and indeterminacy are proposed as virtualities that express the ongoing differentiation of digital matter. On these grounds, the glitch is reframed as an event capable of revealing the potential of the digital in processes of computational making. Ideas concerning the incomputable and non-human intelligence of the algorithm underpin this argument. Finally, it is proposed that intuitive and uncognitive modes of apprehending digital making operate as forms of divination that capture the unprogrammed unfolding of matter.

Keywords: philosophy of design, computational models, digital design, design processes, uncertainty

> Malfunction and failure are not signs of improper production. On the contrary, they indicate the active production of the 'accidental potential' in any product. The invention of the ship implies its wreckage, the steam engine and the locomotive discover the derailment.
>
> Paul Virilio
> *The Accident of Art* p. 2

> The reproducibility of the machine is not a pure programmed repetition. The scansions of rupture and indifferentiation, which uncouple a model from any support, introduce their own share of both ontogenetic and phylogenetic difference. It is in this phase of passage to a diagrammatic state, a disincarnate abstract machine, that the 'supplement of the soul' of the machinic node are distinguished from simple material agglomerates.
>
> Félix Guattari
> *Chaosmosis. An Ethico-Aesthetic Paradigm* p. 42

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The way in which a society organizes its systems of intuition - its science, its philosophy and its technics — is in every manner a political one.

Sanford Kwinter
The Computational Fallacy p. 212

This paper aims to problematize the relationship between computation and making by bringing to the fore the uncertainty, contingency and indeterminacy that are embedded in digitally-driven processes where both computation and making come together. This paper argues that uncertainty, contingency and indeterminacy should be taken as virtualities — modes of reality implicated in the emergence of new potentials, producing actual experience (Deleuze, 1991). As such, their constitutive role in digitally mediated processes of making is assessed in the field of computational design and in particular in the new field of computational making, understood here as a way of looking at the digital as a type of making activity not restricted to digital fabrication but encompassing embodiment, sensorial participation and the situated apprehension of materiality.

Against the view that equates the digital with a programmed determination of routine execution, this paper aims at theorizing the un-programmed data-matter recombinations and disruptions taking place in practices of making that are enabled by computation, for instance, the digital fabrication of physical artefacts. If the power of algorithms lies in their systemic, logical and routine execution by means of a linear and causal performativity (Berlinsky, 2000), not all algorithms however behave in this way. Some are inductive, exploratory and generative, and their outcomes cannot be fully predicted. Instead, they operate by opening spaces of inconceivable potential (Terzidis, 2003), and this points precisely to what, for Deleuze, is the virtual: the repository of manifold potential that can be actualized (Deleuze, 1991, 1994, 1999). Thus, the actualization of the virtual — the change that the virtual produces as a force that inserts itself into (and breaks apart) concrete reality — is to be understood not in terms of things, but in terms of events.

On these grounds, I introduce the notion of *glitch-event* to map the unpredictable and unexpected irruption of the virtual in computation-driven processes of design and making. It is argued that insofar as *glitch-events* are the by-products of the mutual modulation and differentiation of analogue and digital, then they can be apprehended via material intuition as data-rich divinations of possible futures beyond cognition and control. To articulate this argument, which is also underpinned by recent scholarship on computation and algorithmic culture (Parisi, 2014a, 2014b; Parisi & Portanova, 2011), the paper begins by taking the glitch as paradigmatic of uncertainty and indeterminacy at their extreme, and by reformatting it as an event. Then, it examines ideas