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**RE-Thinking the Mystery of Glitch**

Over the last decade ‘glitch’ culture has emerged in art and music as creatives explore the possibilities of harnessing error in digital tools. By unpacking his own creative experimentation, Thomas Barwick demystifies the ‘magic’ of software to help us rethink materials and forge a creative discipline of error

I dropped a heavy lamp base onto my laptop, mashing up a third of the screen a mass of scrambled pixels bleeding off in a crosshatch of horizontal and vertical lines. The image I was working on destroyed so I thought, for a split second, until I drag the image over to another screen and see that its fine. Where is this image anyway? I’ve seen what its made up of, light behind some kind of pigment, and how its represented on the screen in a new way, and that’s because the screen is damaged. This is a hardware image glitch doing what glitches do, making us aware of the materials that the image is made up of. *The errors, or glitches make us aware of the materiality of the software, pulling us out of any virtual sense of reality and making us aware of the images material yet artificial form.(menkman* 2009) I hadn’t really thought of software as a material before and so I started to research this, I found it difficult to trace, intangible, it really IS artificial, knowing its made up of binary algorithms that are beyond my understanding doesn’t help me understand what kind of material this artificiality creates.

Artists who use the glitch to make images fall into two distinct groups that create either glitch art or glitch design. The glitch artist, seeks to *author a critique-by tactically and thoughtfully mobilizing the materiality of the digital rather than simply admitting it in an act of appropriation or as an artistic readymade. Glitch design, by contrast, merely “fulfils an average, imperfect stereotype, a filler or commodity that echoes a ‘medium is the ‘message’ standard.* Though think of this as a useful polarity rather than an accurate paradigm, as there is a lot of crossover between these two approaches. Quite possibly the illustrator sits somewhere in the middle a designers head combined with the nosiness of a fine artists, critically reflecting on the materials they use and how those materials behave. It feels long way away from astronaut John Glenn’s describing how the word ‘glitch’ was coined at NASA. *another term we adopted to describe some of our problems was glitch... a spike or change in voltage in an electrical circuit which takes place when the circuit suddenly has a new load put on it.(Glenn, 62).*

**The voodoo of software**

When artists begin poking around behind the scenes inside software and hardware critics begin to write about ghosts in the machine *plastic and metal corpses with voodoo powers, strangely animate and (self) commanding.’(Bogost, I.2012)* this is not my position at all, I’m not making claims that software is intelligent, quite the reverse. No, I’m finding that there are qualities that simple life-forms have that are similar to software’s qualities, if you look at life-forms in a certain way, describe them as having characteristic qualities guided by a set of rules. Software does behave like artificial life, a simulation, of something like a single cell organism or maybe simpler than that maybe more like a chemical element reacting to external stimulus as it processes image information pixel-by-pixel.

That said, for a long period of about six months my research felt exactly like Voodoo Studies, or just seemed so impossibly complex that I would need to learn a whole new computer code language to understand its artificial materiality and identify its qualities.

The breakthrough came on a University field trip. Written on the first piece of signage I came to as I entered the Bauhuas-Archiv in Berlin was a quote from one of its founders Josef Albers – *Before everything is the material.* I focused on this aspect of glitch images from that point on, looking for specific material qualities. I approached it by thinking about error and misinterpretation in other art practices outside of digital and seeing if they correspond with glitch’s erroneous, perhaps even clumsy, blundering abilities. “The more you rely on good tools, the more boring your sculpture will be,” observes Renoir, just as the Glitch artist, even if her tools are tucked up in neat ordered toolbar windows, tends to be more excited about working with the digital lump hammer rather than the precise, regimented set of surgical actions, not so much bad tools, rather good tools used badly, used in error. Artist, writer and Glitch commentator Rosa Menkmann’s Glitch Manifesto is a lucid psychology of just how these artists, *use the computer’s inherent maxims as a façade, to trick the audience into a flow of certain expectation that the artwork subsequently rapidly breaks out of. As a result the spectator is forced to acknowledge that the use of the computer is based on a genealogy of conventions, while in reality the computer is a machine to be bent or used in many different ways. (Menkman, R. 2009. paper title, ‘Glitch Studies Manifesto’, Amsterdam/Cologne.)*

**The complex practice of error**

Thinking about using ‘bad’ tools and unreliability in my studio, I’m looking at a large stone pot of drawing tools, bamboo, reeds, twig, stiff ruined brushes, an assortment of sticks with wires lashed to them with string. And I realize that I use error in my physical practice all the time and the more I think, the more illustrators spring to mind that have relied on error. It’s a pretty large list from established iconic legends to students I just waved off this year. Observed anthropologically, what an odd practice it is, faux-flawed eyes squinting Hockney-like at the page or subject, sending vague messages to a brain that feigns indifference, passing the signal on without too much consideration to a wrist that is loose, staccato, misbehaving, a naughty spaniel wrist not a working Sheepdog, holds a flexible steel nib pen that is ‘almost’ certain to leak out ink onto paper that is bumpy and imperfect. VOODOO!

But… “you’ve got to play tricks, trick yourself, trip yourself up,” says illustrator Ian Pollock working away with charcoal in front of a mirror describing his drawing process. So it’s not Voodoo, Pollock *knows* he is fooling himself and as an experienced illustrator myself that also works in this way think he is right and that we all know that there is some form of self-deceit in our practice when we work with error and chance. It’s a complex set of actions one following  the other, a chain reaction of forced errors, chance plays a large part in the process. The judgments made are like the judgments of the gambler at the roulette table, there is a strategy, but it’s strategy based on the acceptance of chance and unpredictability. A process of rapid interpretation of events through marks on the page as they unfold through the image making process. Chaotic in feel, undisciplined and messy. The resulting images containing physical glitches that reveal the qualities of the materials being used, and the way the artist uses them that are difficult to separate into two separate elements. Though we can say that the binder between the two is error and that is what’s revealing the qualities of the materials, which is the part I am interested in.

**A creative history of error, from artist to computer**

Follow this approach through reductively, and you come to Agnes Martin, the painter, who was in opposition to thinking at all when making a piece of work, attempting to *work with a vacant mind*. Here, in a letter to Cheryl Harper she describes what’s happening when she is working at her most disciplined, *Going without resistance or notions is called discipline. Going on when hope or desire have been left behind is discipline. Going on in an impersonal way without personal consideration is called a discipline. Not thinking or planning, or scheming is a discipline. (Martin,A.1960’s)*

She identifies the concentrated effort involved in not thinking while making art. As a process she sees it as a rigid activity, requiring this self discipline to accomplish passive modes of thought open to chance, error and loss of controlWhat Martin is fighting against are elements of her process that a computer does not have to repress and says Anna Pasek *is not shaped, like an artist by our values, interests and purposes, as active agents.* It’s these missing qualities that start to define the material qualities of the way that software processes, without resistance, notion less, with no hope or desire, impersonal and thoughtless. Finding these characteristics helps define an understanding of the nature of software as a material.

Doing this comparison with Martin’s set of criteria you will find that at a certain point a separation takes place between the artist and the materials, in order for the software’s disciplined nature to take command, a point at which the artist hands over the image to the computer for automatic interpretation. The artist has always failed to be entirely subjective, they are only ever escaping *from the too-subjective, You can’t avoid being subjective.’’(Albers,A. 1968)*

There are useful comparisons in arts practice but they are not to be found in improvised drawing, even though the **spirit** of glitching does feel like it belongs there in the chaos and energy of pens skidding across paper and pigment and ink sailing about – like the needle ripping back and forth across a record groove, revelatory in a loud, obvious way, but that isn’t the case.

Because once you take on board this sense of ultimate discipline being combined with separation from the materials, it’s all far closer to what’s happening at a processing level with things like print-making or bronze casting, processes whose materials, in this case acid and molten metal, are literally untouchable. They force the artist at a certain point to stand back, just as with processing software like content-aware, you execute one command on an image, a simple area selection command and it then calculates millions of complex calculations. Once you ask it to ‘patch match’ and execute the content-aware fill. Likewise with a copper etching plate you immerse it in acid and this one simple action allows a complex chemical process to happen. And so it’s more this type of unpredictability and potential for error through risk that makes up the material qualities of the software I am using.

And it’s working like this and allowing the process to take place without intervention that I have been pursuing digitally. I use two different softwares, *Photoshop* and *After Effects* to reinterpret scanned images. In *Photoshop* the content-aware fill is used selectively across large sections of the images surface. It’s a process where parts of an image are compared with each other and ‘patch matched’, it samples, compares, clones and reproduces, creating warped images that remind you of print-making or collage. A similar effect is achieved in a different way in *After Effects* using a process called ‘Time Re-Mapping’. Here two similar images, an original, and one that’s been warped in content-aware are put onto a timeline, the processing involves the computer averaging out elements from each image, again through comparative algorithms but now with time an additional rule to be applied to the process.

**Comparative materials**

The next stage is to find out how printmakers and sculptors approach the inability to control every aspect of their materials in some processes. And look at their attitude to materials as well. To see if that suggests new ways to treat software as a material. Looking for other creative processes where the artist allows the material to take control. Repositioning image-making software more closely to real world materials was unintentional. But accepting that new position opens doors to a much wider range of materials for comparative study. So any research into artists’ relationship to their materials can be used as part of an analysis of artists’ relationship to the artificial materials they encounter in software. Critically that enquiry should be opened up beyond western Fine Art to explore other cultures’ attitudes to the kind of material processes that align with the ways of software processes – following the whole ‘truth-to-materials’ line of enquiry to its original sources in indigenous art. A separate strand should also look at Folk and Outsider Art in the west, accepting that here traditional attitudes and customs with materials have been ignored or overturned by artists, who often adopt unique attitudes to the materials used unique to their cultural heritage or individual psychology.

Image-making software at this point in the research feels like a successful synthetic life-form, chemical rather than biological, less complex than its half-cousins – the art materials we use in the real world but built on similar principles. And crucially observable in a comparative way that means there is still much to be found out.

Software’s hierarchies and work flows are predicated to prevent this materiality from being noticed by maintaining an illusion of the real world – your windows, tools, files, are all artificial and so is the work you make here, but its not as restricted a space as it appears. The glitch offers a way to see through that, a way to get back to the very traditional practice of understanding materials in new ways and allowing that new understanding to inform the way images are made. To leave the heavily chlorinated municipal swimming pool behind, run from the leisure centre and leap into the ornamental fish-pond, opposite Iceland.