

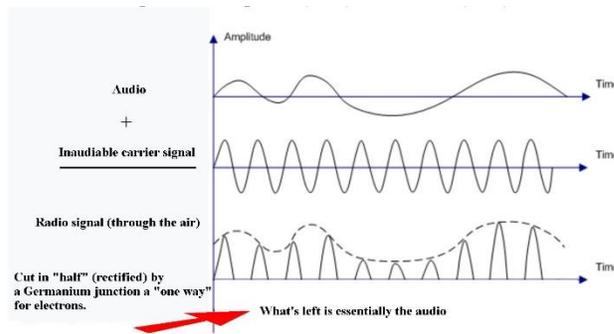
Frau Dulent on Doping

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(or improvements due to impurities.)

Would you believe that it weren't for a "cats whisker" you would never have heard anything on an AM radio? Largely because with the "whisker" you had to find a polluted (e.g. doped) natural junction on a germanium crystal by prodding it with a spring loaded hair thin wire (a "cats whisker") until you found a naturally doped junction that acted as a clipping p/n junction-diode separating the audio from its carrier by eliminating half the received signal.

Such a junction, a natural diode, comes to be because of **impurities** in the Germanium and is referred to as doping when artificially induced.



AM Modulation -- Radio

But I digress.

John Ruskin

As J. R. observed in his book [“The Stones of Venice”](#) what makes the facades of the Venetian palazzo's so attractive are excursions of geometric impurities in the facades. I would argue that this was an attempt at impurity (doping) against an otherwise clinically symmetric approach to architectural geometry and esthetics. Such “impurities” provide structural strength and visual delight. Consider: If all crystalline materials were 100% pure the crystals would all be geometric primitives and become rather boring in their symmetry.

Observe the differences among columns and windows.



It is a known fact that alloys, e.g: mixtures of different materials change the properties of these mixtures. An impure material changes its geometry by way of the molecular geometry of the mix and thus the mechanical behavior of its molecules and its appearance. (See Pyrite below).



At the very minimum the color of the materials changes: (SiO₂ variations below)



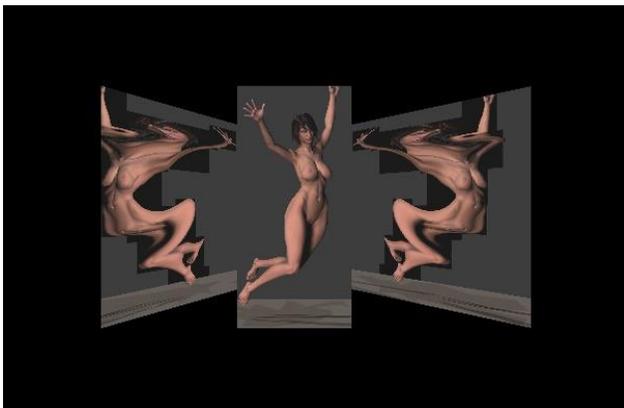
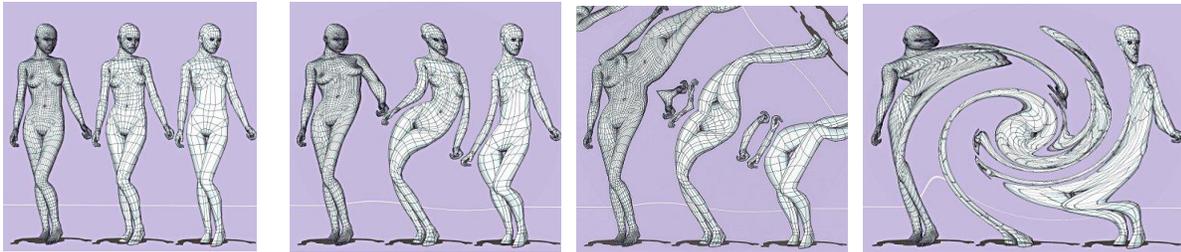
Advantages and disadvantages can be experienced in a material's behavior, strength and looks. I would furthermore argue that these underlying phenomena are because the molecular geometry of a material and not the material itself. It is therefore material that is the epiphenomenon leaving the molecular geometry as the true phenomenon to be considered!

From materials to architecture, to art and literature etc. the true phenomenon appears to be the structure, the geometry that is the true driving force. The universe and its space is occupied by all manner of material and energy vexing our understanding of it all. But the real phenomenon is, more often than not, bypassed as mere geometry.

Conversely it is often argued that the universe is governed by mathematics. Wrong! Math is always a mere approximation of what is, it governs nothing! It merely helps us approximate what's going on by allowing us to reduce our errors to acceptable amounts. Math helps us to describe things and dynamics reasonably close, close enough for statistical predictions, by no means accurate but close enough for our comfort.

So where then do we start? We need to examine geometry from a different point of view.

I recommend experimenting and prodding into the subject matter, and see what emerges:



By messing with the structures in 2D, 3D, 4D and 5D. I hereby declare the *fifth dimension* to be "perception".

Let us see what happens and draw on that.

