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ART AND NATURE-HARNESSING

BIOLOGICAL OR CULTURAL?

Is art something we do because it's biologically innate, the expression of an aesthetic sense sewn into us by natural or sexual selection?

Or, instead, might art not be something we evolved to do, but we nevertheless do because we and our vibrant cultures are superbly innovative and do *all sorts of things* we never evolved to do, like bull riding?

If art is biological, we expect strong universals.

If it's not, we expect that nearly anything goes.

This biology-versus-culture debate is a close cousin of the classic nature-versus-nurture debate, and it dominates the discussion of the origins of art and design.

My exhibit at Mona, and this essay, is about a revolutionary third option. It is called 'nature-harnessing', a theory on the origins of art that is neither biological nor cultural in the senses above.

Nature-harnessing is a framework for understanding not just the arts, but also all the stimuli humans create for the senses of humans, including visual arts, letters in writing systems, music, speech, design of everyday things, the colour patterns found in fashion, and so on.

We might call these generalised cases of art and design 'stimulus artefacts', and their origins, too, have traditionally been debated in terms of biology-versus-culture.

Nature-harnessing provides an entirely new avenue of explanation.

To begin to better appreciate what the nature-harnessing theory is and why we need it, consider the most glaring gaps in the 'cultural' framework.

THE TROUBLE WITH THE CULTURAL ACCOUNT

If we look into the stimulus artefacts humans have built for the senses of other humans, we're blown over by the sheer diversity.

Paisley and polka dot, kilts and blue jeans, pesos and playing cards, 'Zigeunerweisen' and 'Golliwog's Cakewalk', Hangul and Helvetica, pink and beige, muscle cars and colonial chairs, sickles and stars-and-stripes, SpongeBob and snuff videos, cologne and new car smell, semaphore and flag girls, hops and bubble-gum flavour, garnish and gravy, *Dogs Playing Poker* and *Evocation of a Form*, 'Salam' and 'tsk tsk', *Fargo* and *Fight Club*.

This mountainous menagerie of stimulus artefacts boggles the mind, and is a testament to the cultural view on their origins, that our minds are 'blank canvases' upon which any stimulus can be brushed.

Non-human animal brains could never accommodate such diversity. Their senses are brilliant at processing the relatively small range of stimuli occurring in their natural habitats.

We humans, on the other hand, broke away from animal instinct and could thereby become whatever and whoever we wished, and we could take to a nearly unlimited assortment of stimulus artefacts.

The hypothesised evolutionary origins and brain specialisations undergirding this break from the fate of the rest of the animal kingdom are debated, but the result was an unprecedented explosion in plasticity compared to that found among our ape cousins.

This 'blank canvas' belief is widely held among non-scientists, and still holds considerable sway in biological and neuroscientific circles.

But it is a myth, and Steven Pinker has made the most integrated and sustained case against the view in his book *The Blank Slate.*[1]

There are no brain specialisations (not areas, not circuits, not neuron types, etc.) sufficiently profound to explain an explosion in our plasticity and learning capacity. We have quantitatively bigger (i.e., more encephalised, or roughly larger brain–body ratio) and smarter brains, not qualitatively bigger and smarter brains.[2]

And there are no novel demands from our evolutionary ecology (not the savanna, not social group size, not spear throwing, not cooked food, etc.) able to explain a discontinuous leap forward in brain plasticity, one giving us universal-learning-machine powers.

In fact, we know from mathematics that there is *no such thing* as a universal learning machine. The famous philosophical riddle of induction concerns how one justifies making particular conclusions from finite amounts of data, and the dilemma is that there is no unique way to learn from data. There are instead many distinct ways to learn, depending on one's priors, or assumptions,

1 Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature*, Penguin, London, 2002.

2 Mark Changizi, 'Principles underlying mammalian neocortical scaling', *Biological Cybernetics*, vol. 84, no. 3, March 2001, pp. 207–15.

or paradigm (as in my own Paradigm Theory on the riddle of induction described in my first book, *The Brain from 25,000 Feet*).[3]

Or… instincts.

Learning requires instincts. We have instincts for learning *certain* sorts of things, and to learn those things very quickly.

We're as intelligent as we are not because we've shed our instincts and embraced an illusory super-plasticity. Rather, we're as intelligent as we are because we're in fact *steeped* with suites of instincts needed for the ancestral habitats in which we evolved.

For the 'cultural' account, then, the most troubling difficulty is that, counter to many people's intuitions that we humans are different from the rest of the primate and animal world in being superbly plastic, we are not.

Our brains are born stamped with the knowledge and mechanisms from our ancestors' struggles—stamped with instincts—and our brains simply cannot absorb any old stimuli people might throw at it.

THE EXAMPLE OF WRITING

If we're not superbly plastic absorbers of stimuli, and if we're instead confined by instinct, then how *do* we explain the ridiculous diversity of stimuli we consume with abandon?

Consider our ability to read, where there is a rich 'anything goes' assortment of straight to squiggly shapes found across the writing systems over history, and where even *within* each writing system we're able to recognise writing from hundreds of distinct fonts and from millions of different handwritten scripts.

Surprisingly, the great diversity of writing notwithstanding, reading still has all the hallmarks of instinct.

There appears to be a *grammar*—or universal pattern—underlying the manner in which strokes combine to build letters, something I found by analysing 115 writing systems over history.[4]

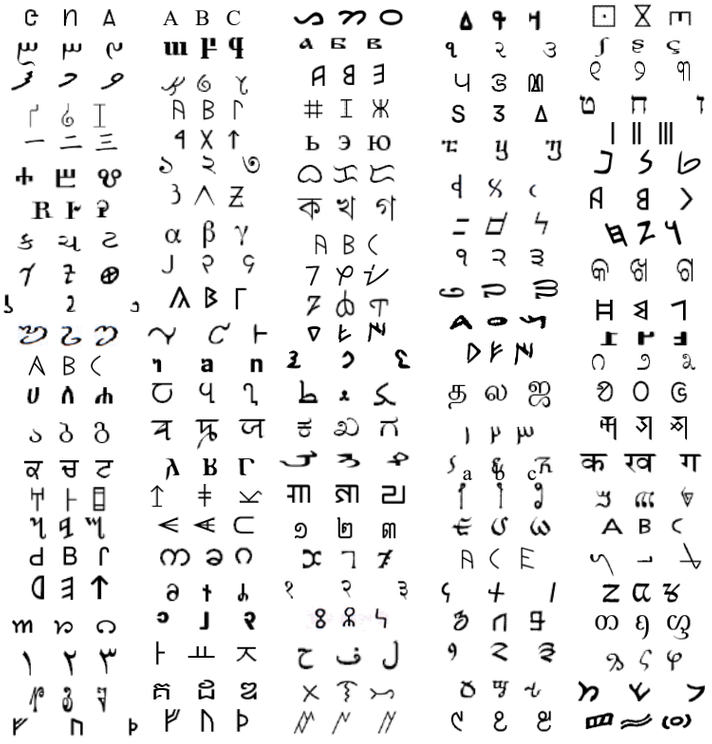
Reading is a *complex*, computationally sophisticated, task—so complex that even today our software can't read handwritten text proficiently.

Children tend to take to reading *so early and with relatively little training* (compared to the amount of speech they hear) that—to get some context—they're reading before they can competently do monkey bars or somersaults.

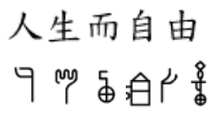
3 Mark Changizi, *The Brain from 25,000 Feet: High Level Exploration*, Kluwer Academic and Plenum Publishers, Dordrecht, 2003.

4 Mark Changizi & Shinsuke Shimojo, 'Character complexity and redundancy in writing systems over human history', *Proceedings of the Royal Society B*, vol. 272, no. 1560, 2005, pp. 267–75, DOI: 10.1098/rspb.2004.2942.

SAMPLE PHONEMIC (NON-LOGOGRAPHIC) SIGNS



SAMPLE LOGOGRAPHIC SIGNS



SAMPLE NON-LINGUISTIC SIGNS

Illustration of the variety of shapes across human visual signs. Phonemic writing (from more than one hundred writing systems), logographic signs (here from Chinese and Linear B) and non-linguistic signs (which are not part of language).

Once we learn how to read, we do so *automatically and effortlessly*. Watch a movie with subtitles and after a few minutes we don't even realise we're reading at all.

Writing is *everywhere*—there's hardly a scene in one's day where there are not written words shouting at us, and we often read more words per day than we hear.

Finally, we have *specialised areas in the brain* for reading, and neuroscientists have even gone so far as naming them 'visual word form areas'.

Despite writing's diversity, then, all these signs point to reading being an instinct.

The point of bringing up reading is this: If we can show that one of the most important and diverse classes of stimulus artefact—the one responsible for literacy—is an instinct, then it opens up the mind to believe that all the other similarly diverse stimulus artefacts might also be instincts.

Yet…

READING IS NOT AN INSTINCT—OF COURSE

Although reading's universal patterns, complexity, quick acquisition, effortlessness, pervasiveness and specialised brain mechanisms all point to it being an instinct, we of course do not possess a reading instinct!

Writing is far too recent; it was invented only several thousand years ago and was not widespread until just several generations back. Odds are good that not all your great great grandparents were literate. Natural selection has not had *nearly* enough time to build sophisticated software for reading.

So, reading can't be an instinct.

And so it has to be cultural after all.

Sigh.

The 'reading riddle' is, then, how a cultural artefact like writing—something people made and for which we have no in-born mechanisms for processing—can be accommodated by not–particularly plastic humans so exceptionally well that it would appear to alien observers that we have a reading instinct.

Stimulus artefacts more generally—art, music, spoken language and so on—suffer from the same riddle. In each case there's tremendous variety, but under the surface each shows universal patterns and each has the hallmarks of instinct.

For these other stimulus artefacts, however, it's easy to resolve the riddle. The 'out' is to simply suppose that we indeed have instincts for processing them—that over the last half million to several million years there was extended selection pressure for biological specialisations for processing art, music, language, etc. With 'instinct' as an answer, the riddle dissolves.

But for reading the easy 'instinct' answer is a non-starter. What makes reading a great case is that there's absolutely no uncertainty about whether there's a reading instinct. There's not.

That's why reading amounts to a mysterious riddle—because there's no easy 'instinct' out.

And it makes one wonder: What if the solution to the reading riddle—whatever that might be—is the solution for stimulus artefacts more generally? If we don't need instinct to accommodate our instinct-like ability to read, then perhaps we don't need instincts for art, music, speech, or the vast range of other stimulus artefacts.

What, then, *is* the solution to the reading riddle?

CULTURAL SELECTION

Above, I concluded that stimulus artefacts like writing can't simply be invented stuff paying no mind to our instincts. So reading can't simply be cultural.

But I also concluded that although reading smells like an instinct, it is certainly not. So reading can't simply be biological.

There *is* a long known type of answer to this sort of predicament: *cultural selection*.

Cultural artefacts don't merely appear. They *evolve*. They get *shaped*. They undergo *selection pressure*.

Not natural selection, but *cultural* selection.

As stimuli go in and out of the minds of individuals and groups and whole civilisations, the stimuli change. They become easier to process. They acquire structure that more and more efficiently engenders whatever they're supposed to engender in the brains of people.

Cultural selection *designs* stimuli to work better with our brains.

If writing has undergone cultural selection, then that would explain how it can have the hallmarks of instinct without actually relying on one.

And if a solution of this 'cultural selection' kind can crack the reading riddle, perhaps the same solution applies fully to all the stimulus artefacts.

Cultural selection is a type of hypothesis, but amounts to just waving one's hands in the direction of an explanation.

How do we actually *show* that writing and other stimulus artefacts are due to cultural selection?

And, more important, what does cultural evolution *do* to make these stimuli work so well on our brains? What's cultural evolution's trick?

NATURE-HARNESSING FOR READING

In the field of computer vision it has long been noticed that in natural scenes contours intersect in certain characteristic ways. Along some borders of objects there may be two contours meeting at their tips, and this is called an ‘L’ junction. When one object is partially occluded by another, there is a contour going behind a contour, making a ‘T’ junction. Many corners of objects are characterised by three contours meeting at a point, something called a ‘Y’ junction. And there are names for many of the other common junction types, such as ‘K’, ‘Ψ’, ‘F’ and ‘H’.

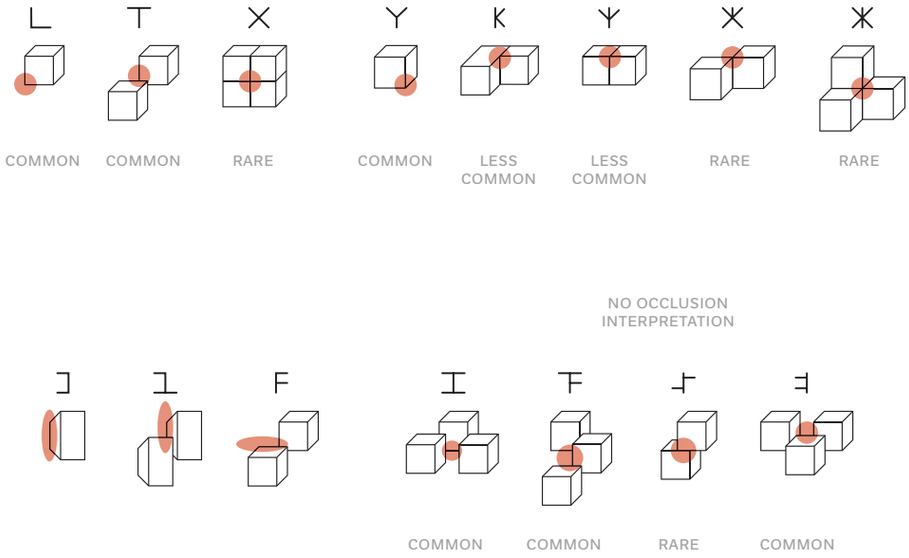


Illustration of the kinds of three-dimensional arrangements in the world required to elicit several of the topological shapes, including in some cases their relative commonness. For the four topological shapes with three segments and two Ts (i.e. the four to the right of the middle row), only three of the four can possibly be from the arrangements where both Ts are due to partial occlusion, which means the other one must be rarer (and is also rarer in visual signs). In the bottom row are example arrangements that cause the twenty-six capital Latin letters.

Although I had known this since the mid 1990s, around 2005 I was studying the grammatical regularities underlying how strokes combine into letters across writing systems (as I mentioned earlier), and as I reflected *then* upon these names for real-world junctions, it suddenly occurred to me how peculiar it was that computational vision could come up with such nice, single-letter, names for the common junctions.

That certainly need not have been the case!

So… perhaps it was not a mere accident.

Could it be, I wondered, that letters have come to be shaped like nature ‘on purpose’?

By so doing, letters would have the shapes our visual systems are *already* brilliant at processing.

If culture could make letters look like the contour-conglomerations (or junctions) occurring in the natural scenes that shaped our visual systems, then writing would harness—or *nature-harness*, as I say—our visual object and scene recognition mechanisms.

We wouldn’t *need* a reading instinct.

In a 2006 paper we provided evidence that letters and other symbols have the signature structures found in natural scenes.[5]

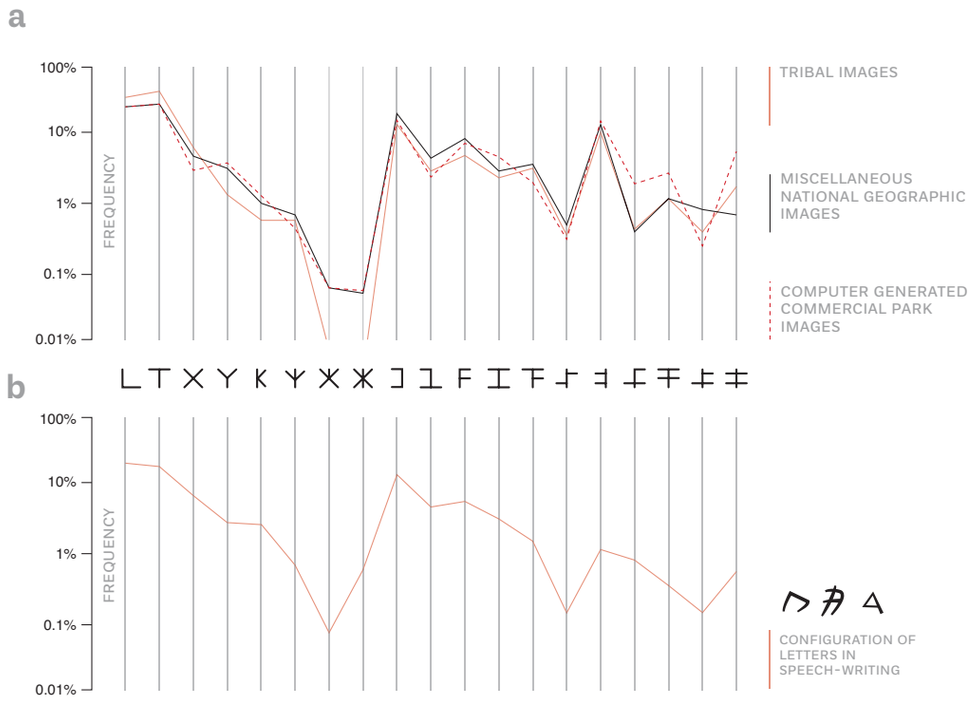
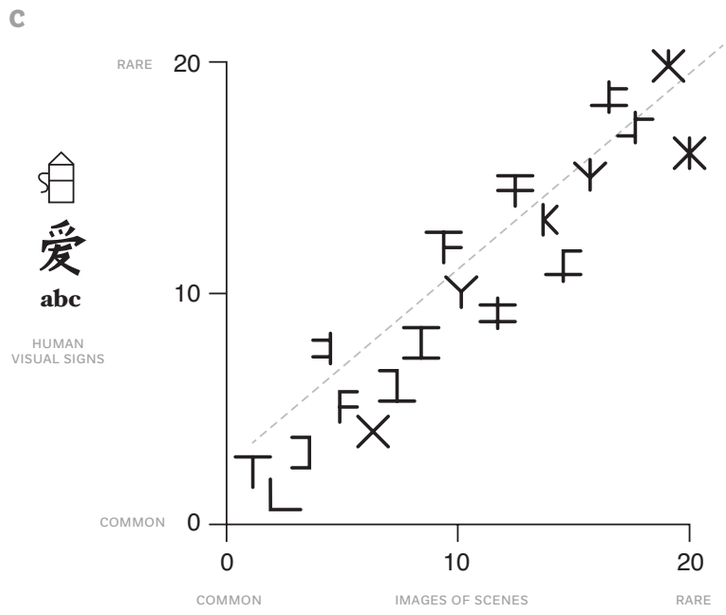


Illustration that letters have the signature of natural junctions. The frequency of each topological junction type in nature (a) and across the 115 writing systems (b).

5 Mark Changizi, Qiong Zhang, Hao Ye & Shinsuke Shimojo, ‘The structures of letters and symbols throughout human history are selected to match those found in objects in natural scenes’, *American Naturalist* , vol. 167, no. 5, May 2006, pp. E117–39; and Mark Changizi, *The Vision Revolution: How the Latest Research Overturns Everything We Thought We Knew About Human Vision*, Benbella Books, Dallas, TX, 2009.



One can see that the plots in (a) and (b) on the previous page closely match, and that their rank orderings match well in (c).

Letters do indeed look like nature.

We read as *if* we have a reading instinct not because natural selection shaped our brains for reading, but, rather, because cultural selection shaped letters to look like the stuff of nature our visual brains already have instincts for processing.

Said differently, rather than the brain knowing about letters, letters have come to know about the brain.

And, in particular, letters have come to know about the shapes—natural shapes—that the brain evolved to like.

No instinct needed.

That's the answer to the earlier reading riddle.

NATURE-HARNESSING FOR STIMULUS ARTEFACTS

If nature-harnessing can resolve the reading riddle, then perhaps it is the solution for the stimulus artefacts found in art and design more generally, even those where one might wonder whether we may possess instincts undergirding them.

If culture could shape writing to look like nature in just the several thousand years it has had, imagine—I wondered to myself back in 2009—how well culture could have shaped *speech* to sound like nature over the course of hundreds of thousands of years. But what sorts of natural sounds would speech 'want' to mimic so as to ease its way into our brains? In my earlier book, *Harnessed*, I made the case that *speech in fact has the signature sounds and patterns found among natural events*, in particular, events among solid objects (e.g., characteristic combinations of hits, slides and rings).[6] Speech works not because we have speech processing areas in the brain, but, rather, because speech shaped itself to sound like the natural events we already have brain regions for.

Whereas written and spoken words mimic the look and sound of objects in the world, it seemed to me back in 2009 or so that music would have to mimic something much less sterile, and much more evocative. The thought has been around since the Greeks that music sounds like movement, and in my book *Harnessed* I spend more than half the book working out the signature sounds made by people when we move (footstep beat and gait pattern, Doppler shifts, loudness modulations, tempo and so on), and showing that we *find the same peculiar signature human-movement patterns in music*. Music is a story of a person moving in our midst. Music affects us as it does not because we have instincts for music, but, instead, because music has culturally evolved to sound like the natural evocative human-movement sounds we already have brain regions designed to detect and recognise.

Writing and speech—literacy and language—are at the core of how we distinguish ourselves from the other apes, and there is a strong case to be made that their origins are from nature-harnessing, not from instincts.

Music is arguably the pinnacle of the arts, and it, too, appears to have its origins in nature-harnessing.

Does nature-harnessing explain the full array of stimuli we find in art and design? I think it's a good bet that it does, but I haven't studied other classes of stimulus artefacts in nearly the detail of these three cases (writing, speech and music).

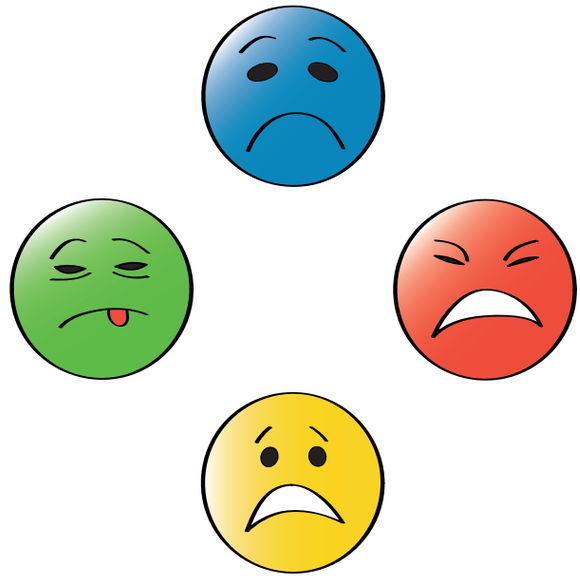
In many cases of art it's of course obvious that the stimulus mimics something we're good at recognising, because the art depicts something quite familiar, whether a human form, forest or fruit.

The powerful predictions of nature-harnessing are for stimuli that at first glance—and second, third and fourth glance—don't seem reminiscent of nature at all. That's certainly the case for writing, speech and music. Perhaps your lower brain areas 'know' they mimic nature, but they're not tellin'!

6 Mark Changizi, *Harnessed: How Language and Music Mimicked Nature and Transformed Ape into Man*, Benbella Books, Dallas, TX, 2011.

Are there other non-obvious cases of stimulus artefacts explained by nature-harnessing? Some possibilities include the following:

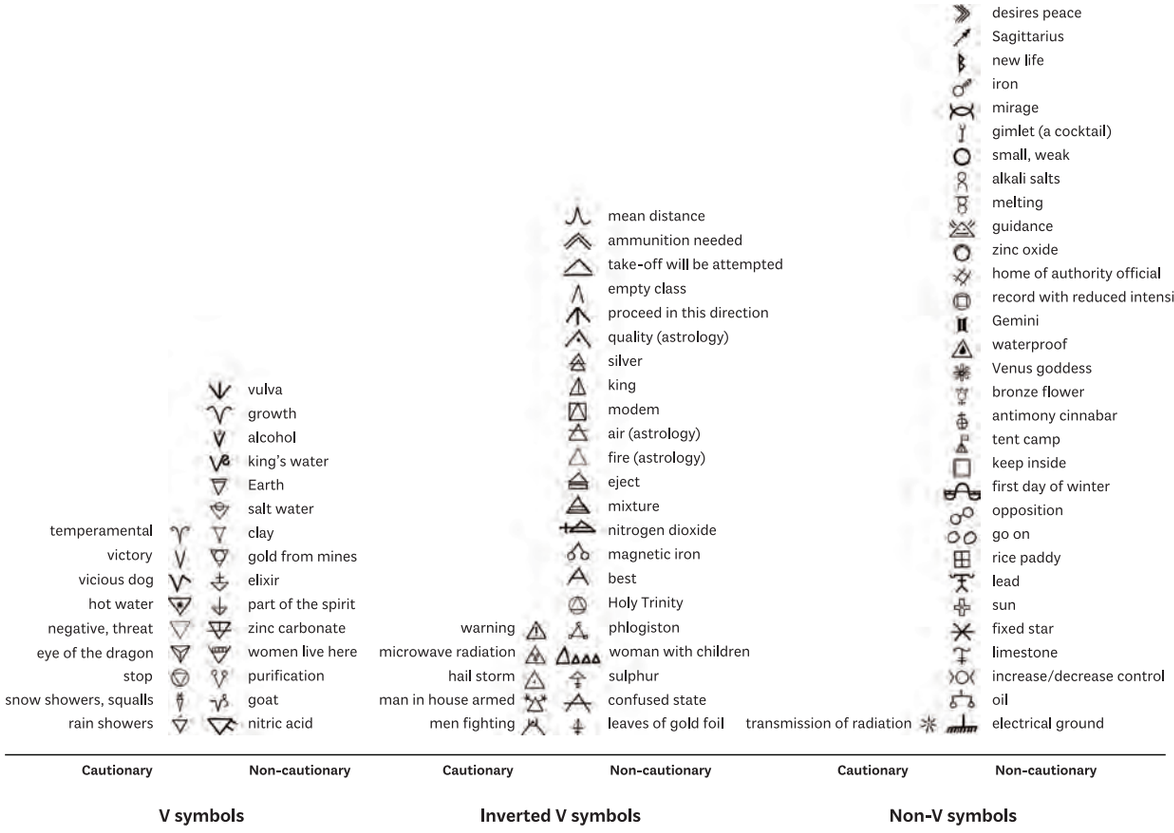
How colour is used: In 2006 I provided evidence that colour vision in primates evolved in order to detect the spectral signals on bare skin, to thereby see emotions, state and health. (For an introduction see my earlier book, *Vision Revolution*.) Red, for example, is a strong colour because it indicates oxygenation. And yellow, for example, connotes fear because the blood is pumped away from the periphery (and consequently skin is yellower) when the subject is afraid. Our use of colour in a variety of contexts, such as warning symbols, clothing and abstract visual arts may harness these emotional connections. That is, it may be that the use of colour in art and design can only be understood by grasping how the colours mimic skin spectral states.



Example of use of colour in cultural stimulus artefacts illustrating their emotional origins.

The orientation of angles: It's known that 'V' symbols are more jarring, and work better as warning symbols, than upside-down 'V' symbols. One possibility is that 'V' looks sufficiently like angry eyebrows on an expressive face, whereas the upside-down version looks like sad eyebrows. A paper I co-authored with some undergraduate students showed that 'V' is more commonly used in 'danger'-related symbols over history than upside-down 'V' shapes. That is, unbeknownst to the users of these symbols over history, culture had selected out contour combinations mimicking appropriate facial expressions appropriate for the symbol's meaning.[7] The symbols thereby nature-harness our facial-expression instincts.

7 See Mark Changizi, Matt Brucksch & Ritesh Kotecha et al., 'Ecological warnings', *Safety Science*, vol. 61, January 2014, pp. 36–42.

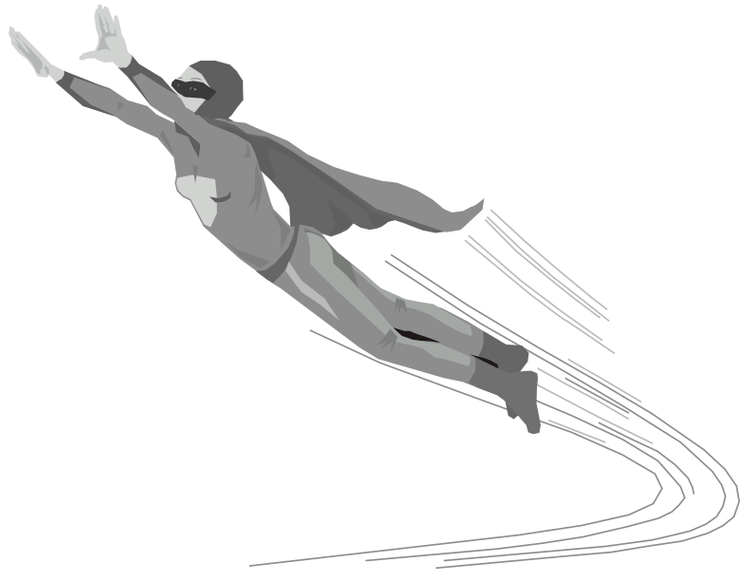


Evidence that human visual symbols with cautionary meanings may have, over history, been selected for V-like shapes. In comparison to random visual signs without a V shape (right side), visual signs with a V shape have a tendency to be cautionary in some way (left side of plot). Visual signs with an upside-down V shape are intermediate, although not significantly lower than for V shapes. The data here is acquired from Liungman, 2004,[8] and short meanings of the symbols are given (although many have multiple meanings). The V and inverted-V cases have accumulated all the symbols in that citation having these overall shapes; the non-V category utilised the 'get random symbol' feature at the book's website, www. symbols.com.

Cartoons and blur: In most cases of art and design, artists may not be aware that the stimuli they are using are harnessing us in evolutionary ways, but at least the stimuli they employ are visible to them in natural settings. There are, however, stimuli that artists have figured out how to use and harness us with, and yet the stimuli are not even perceived. These invisible harnessers are…optic blur lines. When there is movement—either by an object in your field of vision, or by your self-motion—the objects in the world leave a 'trail' of blur on your retina (the neurons at the back of your eye). Crucially, though, you don't perceive the blur. The blur is part of the stimulus on your retina, but the perception it leads to does not have the blur. Your brain uses the blur on the retina to help determine the motion, but it doesn't include the blur in your perception itself. Yet, despite not seeing blur, artists have figured out how to add it to their art and design, and thereby harness our motion processing mechanisms. (In my research I have shown that these blur lines are a key part of making sense of the classical geometrical illusions. In this light, classical geometrical illusions are cases of psychologists nature-harnessing us for oohs and ahs in the classroom.)[9]

8 Carl G. Liungman, *Symbols: Encyclopedia of Western Signs and Ideograms*, HME Publishing, London, 2004.

9 Mark Changizi, *The Vision Revolution*, pp. 134–61.



An example of blur lines in art.

Contours from bodies in everyday design: Youthful, attractive bodies have signature contour shapes and contour intersections. Artists know how to draw them, and also know how to do it with very few strokes. And they can also use distinct strokes to indicate old, or unattractive, bodies. Even animals are judged (unfairly!) on this basis: horses are gorgeous because their musculature and consequent contours more closely mimic those on youthful human bodies, but pigs aren't so lucky. Car designers, for example, often have body forms within them, essentially showing the car's youth and muscularity.

You're starting to get the idea.

Examples of how very slight contours can suggest beautiful lines on a human body.

NATURE-HARNESSING FOR STIMULUS ARTEFACTS —WHAT THEY'RE NOT

Although writing, speech and music are deeply important classes of stimuli, we have still only scratched the surface—even with the several less-worked-out examples just above—in studying the extent to which arts and design have nature-harnessing origins.

But even before one has any idea what in nature might be the source of some class of stimuli, nature-harnessing strongly predicts which sorts of stimuli cannot be the underlying source.

In particular, stimulus artefacts are not likely to have anything to do with stimuli that we never sense, or stimuli that have no ecological significance.

We never sense hearts, for example. Yet I am often told by laymen that surely music's beat comes from the beat of the human heart…the blood-pumping muscular organ in our chest…the organ we never ever ever hear (it doesn't even reach our ears)…the sound that, even were we to hear it (maybe, uh, as an unborn, listening to Mother's heartbeat), would appear to have no selective advantage. Hearts are even sometimes mentioned as the source of the Valentine symbol. Sure, we *call* it a 'heart', but we can be sure that real live bloody hearts don't motivate the evocativeness found in the visual 'Valentine heart' symbol! (For the record, I have my money on the Valentine heart symbol looking as it does because it looks like an upturned, red, female rump. Whether a rump was on the mind of the inventor, or any of the users, of the symbol is irrelevant. The question is why *this* symbol, of all the symbols for love that could have survived and spread, won over the last eight hundred years or so.)

Or consider birdsong, which some have hypothesised undergirds the origins of music. Setting aside the fact that there's very little in common between bird 'song' and human music, birdsong—although we would have heard the local birds for millions of years—had little to no ecological significance to our survival.

Another commonly proposed source for the origins of stimulus artefacts, especially including art and music, concerns certain mathematical properties of the stimuli, whether it be the Golden Ratio, simplicity, information, fractals, and so on. Even if certain mathematical properties are found to apply to classes of stimuli (and it's usually dubious at best), they can only be relevant to explaining their origins to the extent that those mathematical properties are also found in the natural stimuli that drove the brain's stimulus processing mechanisms in the first place. It's the furniture of the natural world—not the furniture of Plato's Heaven—that shaped our brain.

Nature-harnessing provides an ecologically grounded theory (i.e., tied to our instincts and the habitats in which we evolved) of the origins of art and design, but one endowing respect to the power and diversity of culture. We may not always immediately know the natural underlying source for stimulus artefacts, but we can often immediately discount whole classes of suggestions.

STIMULUS ARTEFACTS VERSUS ART

I've been careful to talk about 'stimulus artefacts' as a general notion, one that covers not just the arts, but all the stimuli we bandy about in culture.

But if nature-harnessing is a theory of stimulus artefacts, then perhaps it's not a theory of art at all.

That's partly right. What's true about it is that where I have thus far made progress I haven't really hit upon art so much as stimuli that are found in art, but also found outside of art.

For example, in my work on the nature-harnessing origins of music, I make the case that music has the structure of humans moving in our midst. But, presumably the music we like doesn't simply sound like a human mover, but a human doing something really interesting, or novel, or evocative, or… artsy!

To help clarify the point, in my book *Harnessed*, I provide a thought experiment of a four-dimensional creature handed a pile of two-dimensional human stimulus artefacts. The pile consists of photographs, money, playing cards, placemats, rugs and so on, and his task is to figure out which of these are photographs, and which are not. As it turns out, four-dimensional creatures have a really tough time imagining what a two-dimensional photograph of a three-dimensional world looks like, but after some mathematical analysis concerning vanishing points and horizons and so on this creature figures it out. Now he's able to split the pile into two: the photographs and the non-photographs.

That's basically what I'm up to in my work on music. I split sounds up into those that are of people moving, and those that are not. Music fits in the first pile.

But *where* within the first pile is music?

You see, unbeknownst to this four-dimensional creature, there are *two* kinds of photographs in his pile of photographs: art and non-art. Which ones are the cases of photographic *art*? His mathematical characterisation concerning vanishing points, horizons and so on won't help in the least!

Similarly, my pile of sound patterns that sound like human movers will havewithin it both music (the art), but also just plain old sounds of human movement that wouldn't be considered music or art. My analysis in *Harnessed*, just like the four-dimensional creature's analysis of photographs, won't help distinguish the art from the not-art. Which human movement sounds—which 'dances' of a mover in our midst—count as 'art'?

Now, that's not a problem with the nature-harnessing framework, per se. We learn *a lot* in realising that music tends to sound like humans moving about. Our current inability to say exactly *which* human movements are 'musical' or 'artistic' is due to the fact that my particular nature-harnessing work on music thus far concerns the relatively lower-level structure found in music (below the several measures scale). And I have worked on these lower-level structures—for not just music, but also for writing—because that's where I actually have a chance to make a theoretical breakthrough—because it's usually easier!

To capture which human movement 'dances' count as art will likely require a more sophisticated analysis, by a more sophisticated thinker. But even here nature-harnessing seems likely to play a central role. Whatever it is that 'art' induces in the brain, it's doing something *sophisticated* to our brains, triggering the designed mechanisms in our brains. And so the stimulus—even at the higher level—must be one sufficiently close to the natural stimuli the brain was designed for.

CONCLUSION: EVOCATIVENESS (AND ART) IS DISPROPORTIONATELY MADE FROM … PEOPLE

I mentioned above that in thinking, back in 2009 or so, about what sort of natural stimuli music might mimic, I presumed that it must be deeply evocative—just as evocative as music is.

In fact, I had back then further presumed that, to be that evocative, music must mimic something human.

No doubt there are non-human stimuli that can provoke strong emotional reactions: a growling tiger leaping toward you, a beckoning glass of cold water, a safe-looking pasture.

But the lion's share of evocative stimuli come from humans.

Which sort of natural object matters most for daily survival? What sort of thing is most likely to kill you? With what kind of natural entity can we have sex and pass on our genes?

People, people, people.

Writing is generally not particularly evocative, and that's because it looks like the structure found among three-dimensional arrangements of solid objects—that's boring. Speech too is not typically evocative because it sounds like events among solid, not necessarily human, objects—also boring. Neither writing nor speech mimics an inherently human stimulus. That's why we don't pay to see written words (for the mere *look* of it), or pay to listen to speech (for the mere *sound* of it).

Music is evocative because it's made with people.

Colours, too, are evocative, and that's because they're ultimately about skin, blood, emotions, state, health and so on—*of people*.

Not all evocative stimulus artefacts are art, but I suspect that being evocative is usually a necessary condition.

And because evocativeness tends to be built from people, I suspect that stimulus artefacts that count as 'art' are disproportionately mimicking stimuli emanating from people, even when the art is abstract and it's by no means obvious there's 'people' stimuli inside.

For art, then, 'nature-harnessing' might be better summarised as 'human stimuli–harnessing'.

You want your art to not only flow into human minds but also to cause really big waves? Then the key is to mimic the most important piece of furniture in our evolutionary habitat—people.

That puts a new narcissistic spin on art: Art is just…*ourselves*.