On the Design of Escaped Realities

January 16, 2015 By Venkatesh Rao

This entry is part 2 of 6 in the series Thinkability

Human beings have this amazing ability to retreat from reality without knowing precisely what reality is, in which direction it lies, and how to solve the converse problem of deliberately approaching it. We have gotten so good at this game of retreat that we've even managed to define an entire frontier of virtual reality to explore without quite figuring out what the non-virtual beast is. A question of particular philosophical urgency today is this: are virtual realities currently being designed in 3d game studios going to be more or less of a retreat from reality than the consensual fictions of the past, such as 2d games, novels, sporting events and religious mythologies?

I'll offer a clear candidate answer later in this post, but it seems likely that *all* fictions — and fictions may be all we have — are retreats from reality rather than approaches to it. This is very strange if you think about it. How can we be so good at retreating from something while simultaneously being really bad at approaching it? It's like we have a compass that reliably points away from reality, but is incapable of pointing towards it.

Reality — which allegedly exists, despite the lack of credible witnesses — is mysterious. I've met people claiming to have experienced it, but it turned out they were all lying (especially to themselves — people in this business of "seeking reality" often manage to project their own desire and capacity for moral certainty onto their experienced universe, but that's a polemic for another day).

The only marginally useful non-nihilistic idea about the mystery of reality that I've encountered is that it comprises three irreducibly distinct aspect mysteries: physical, mental and platonic-mathematical. Roger Penrose made up

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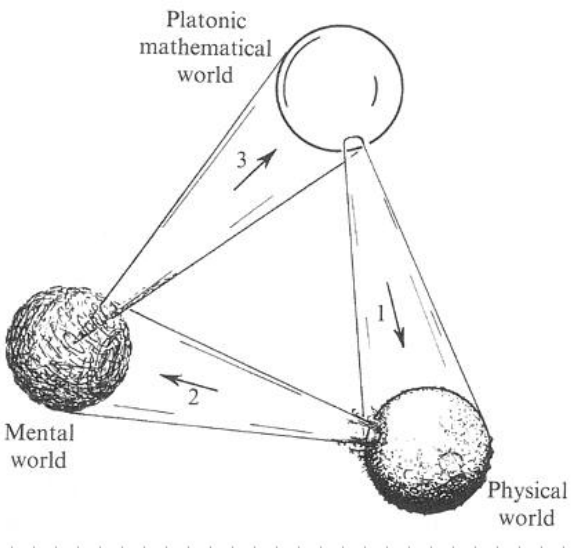
Crash Early, Crash Of

this useful (and whimsically paradoxical) visualization of the triad in *The Road to Reality*.

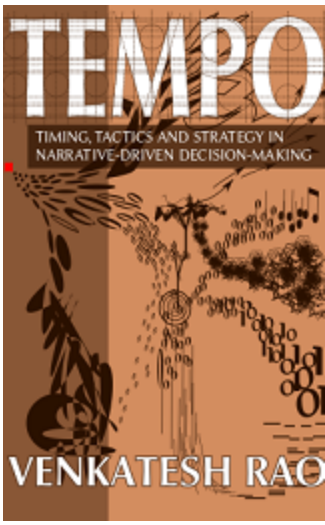


Whether or not this triadic view is metaphysically the soundest one, it is a useful starting point for studying escapism.

Escapism. That's the word we've made up to talk about the game of retreating from reality. We routinely accuse each other of indulging in it, and in polite company, avoid calling out each other's preferred escaped realities. An escape is the opposite of a crash. It is a deliberate entrance into a simpler reality, as opposed to an unplanned entrance into a messier one. An escaped reality (in the computer science sense of the world you escape *to*, not the world you escape *from*) is the opposite of a crashed reality. Virtual Reality (VR) and Augmented Reality (AR) are both varieties of technologically mediated escaped realities. So, for that matter, are gated communities, religious festivals, sporting events and other experiencable environments based on more technologically primitive mechanisms.

This deprecation of escape as a disreputable behavior is unfortunate. Not only is escapism our best proxy for studying how we engage reality (short answer: backwards, in the rear-view mirror created by our fictions), there is an argument to be made that perhaps *all* existence is escapism. That the only realities (plural) we are capable of inhabiting are escaped ones. If this strong view turns out to be true, then the only way to directly experience reality would be to die. The ultimate crash.

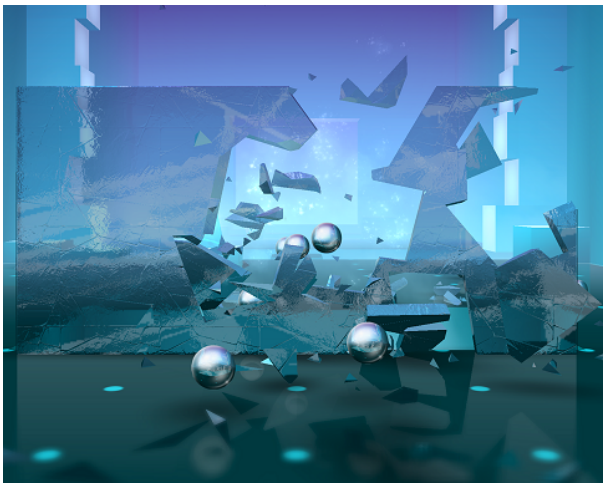
But let's start with a more familiar notion of escaped realities, of the sort associated with movies, novels, video games, religions, meditative practices and collecting stamps.



Three Archetypal Escapes

I spent a fair amount of time last year playing three games on my iPad that I think represent archetypal escaped realities, corresponding to the vertices of the Penrose reality triangle.

The first was *Smash Hit*, a game that involves throwing steel balls at glass objects. It is a beautiful game that exists in a sort of purified classical physics universe. The glass objects shatter in satisfyingly realistic ways, yet the overall *feel* of the game is completely surrealist.



You can think of this game as having descended from the simplest ball-throwing games like catch, and early video games involving classical physics, such as the pioneering 1979 classic, Asteroids. *Smash Hit* reduces the elemental play behavior of throwing balls to its absolute essence, and creates an entire universe around it. In Penrose's triangular reality scheme, *Smash Hit* represents a purified version of the physical world. The game tries to eliminate the platonic-mathematical and mental aspects of experiencing reality as much as possible. It's a game designed to reduce you to a hand-eye response loop.

The second game I played a lot was the equally popular *Bejeweled Blitz*. The game involves swapping neighboring gems on a board to create patterns that destroy them. The simplest is a line of three gems that causes all three to disappear. More complex patterns create special gems, and swapping those special gems causes more destruction.

This game is arguably descended from abstract board games like Parchisi and physical games like hopscotch. Games involving moving counters (or humans-acting-as-counters) around on a board: a universe that embodies rules drawn from the properties of numbers. It exists in as pure a form as possible in the platonic-mathematical world. Nothing in non-escaped reality literally resembles this little gem universe. The essence of *Bejeweled* reality is intuitive mathematics: discrete geometric patterns and counting behaviors that we understand how to work with without being taught. For us mortals, matching up 3 in a row is easy and creating L-shapes or lines of 5 (two ways to create special gems) is just a little harder. Presumably, a version of the game designed for number-theory prodigies would be based on more complex patterns based on prime numbers and the Fibonacci series. Maybe experts would create and detonate gems based on the Riemann hypothesis.

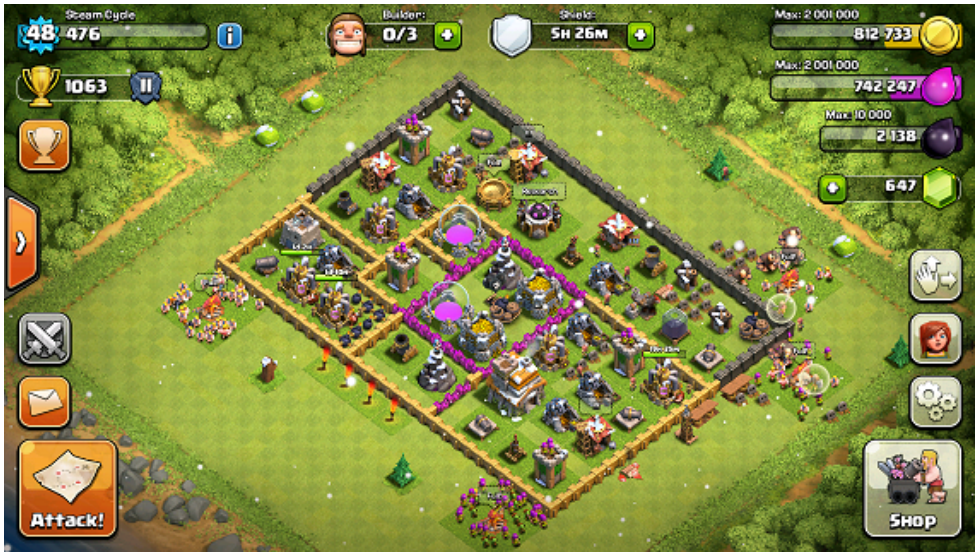
Both these games have an extraordinary ability to draw you into a zen-like trance. Both even have play modes labeled *zen*, where time and scoring pressures are removed and you can just repeat the basic behaviors. If you play either game for too long before bedtime, I guarantee you will dream about them.

In a way these games are escapes from your own mind and the pressures and worries of having an *I* operating between your ears. They eliminate your own mental world and reduce subjectivity to bouncing balls, smashing glass and exploding gems. I am not a martial artist, so I don't know what mind-like-water feels like, but thanks to these games, I do know what mind-like-smashing-glass and mind-like-exploding-gem-patterns feel like. I expect many of you do too.

These games dissolve your sense of human identity as surely as a rosary, and draw you away from ego-anchored things like relationships, narratives and meaningful emotions about human concerns. You experience visceral, pre-ego emotions instead, in relation to primal sounds, shapes and colors.

The *difference* between the two games is subtle, but unmistakeable once you notice it. *Smash Hit* hooks primal physics instincts in our muscles. *Bejeweled* hooks primal mathematical instincts in our computer-brains. Atoms versus bits if you prefer. Whether they like it or not, even those who claim to hate math and physics are mathematical-physical beings. There are quarks and prime numbers inside everybody.

The third game I played a lot was *Clash of Clans*, the much-advertised game of cartoon tribal warfare, where you build up a village with resources and warriors and go around attacking other players' villages. While there is physics and math in this universe, the focus is on characters, narrative, meaning-loaded emotions like revenge, and modeling of other humans in cartoonish ways. And yes, you can indulge your tribal instincts by forming clans (which I haven't done: the screenshot below is of my unsociable and unclannish village).



Unlike the other two games, which dissolve the ego into primordial physics and number theory respectively, *Clash of Clans* aims to amplify the ego by simplifying all the physical and mathematical aspects of reality. Physics is automated — you deploy troops in attack patterns, but their movements and weapon-wielding behaviors are controlled by the game engine after that. Mathematics is reduced to fairly trivial book-keeping uses — you greedily count your gold and elixir, and you compare your warriors in terms of offensive and defensive capabilities ("damage" points and "hit points"), but you don't do much puzzle-like mathematical thinking the way you do in *Bejeweled*. You also don't exercise your hand-eye coordination capabilities the way you do in *Smash Hit*.

I would be very surprised if it were possible to design a *zen mode* for *Clash of Clans*. It is an anti-Zen game of sorts.

Clash of Clans also drives home a point that is perhaps obvious to more sociable people than myself: Mental experience is, to a surprising extent, the *social* experience of having an *ego*. You would lose very little if you were to reductively define Penrose's third vertex of *mental experience* as *social-ego experience*. The fact that the other two games manage to induce trance-like states that feel non-normal, by suppressing social-ego aspects of mental experience, tells you how central the latter is.

The bulk of our mental experience of our socially situated egos happens in the context of relationships. It is the presence of other humans — even bot-villagers and peers in a multiplayer online game will do the trick — that creates and maintains the boundary of our ego. Without other humans and animals around us, we would not even need names. Our egos, to the extent they could exist at all in such a state, would become defined by the physical and mathematical structure of experience, dissolving entirely.

The three archetypal escaped realities apply to other media as well, such as movies.

A classic action movie is a physics-vertex movie. It is all about explosions and things smashing into each other. The *Transformers* movies took this to a so-bad-it's-good level of absurdity. *Die Hard* is also a physics-vertex movie (I've mentioned this great blog post, which explains why, several times).

A caper movie like *Ocean's Eleven* is a platonic-mathematical movie of sorts. The physics turns into a Rube Goldberg caricature. Characters and plots are again highly simplified, limiting mental experience (in the reductive social-ego sense). But the clockwork precision involved in a cinematic heist, appeals (I think) to the same instincts that make *Bejeweled* enjoyable to play. It's the pleasure of losing yourself in dynamics that would be highly improbable in the physics world, but are possible in the platonic-mathematical world. Convoluted time travel movies are also in this bucket. A movie that elevated platonic-mathematical escapism to absurdity is *Inception*.

Finally, romance and Christmas movies eliminate all physics and math in favor of pure, ego-reinforcing experience of relationships in a tribal/clan setting. Every such movie is a close cousin of a session of *Clash of Clans*.

I'll leave dance and music as homework cases for you to work out.

The Structure of Escaped Realities

It is useful to think of Penrose's three aspects of reality in terms of their building blocks rather than their overarching universal totality. In reductive terms, physical, platonic-mathematical and mental worlds are made up of atoms, bits and qualia respectively. Or A-B-Q.

An *escaped reality* is a manipulated environment that achieves a temporary non-equilibrium balance among these three aspects by partially suspending the full richness of one or more aspects. The three archetypal games we talked about, for instance, are escaped realities that exaggerate one vertex each, through simplifying suspensions of reality.

For no good reason other than that I think it is funny, we can even make up a notation scheme for escaped realities. If reality is ABQ (possibly impossible to directly experience), then the three pure archetypal escapes can be denoted \ABQ, A\BQ and AB\Q. The escaped aspect is the one whose normal, more complex behavior is suspended (as in the computing sense of escaped characters, which lose their more powerful magical features when you put a backslash before them) in favor of a simpler, and therefore less-constrained behavior.

This is an important idea that is often missed.

The *point* of *Smash Hit* is to simplify the normal physics of steel balls smashing into glass objects (which would ordinarily include such effects as being cut to bleeding shreds by flying shrapnel) in a way that allows us to safely *expand* that aspect of our experience. In *Smash Hit,* we can exercise the freedom we possess in real life, to throw things at actual glass objects, without suffering all the consequences. Instead of playing with balls and glass, we play with \balls and \glass, with some of the physics of the real world turned off.

This is why we have the paradox of escaped realities — they are simpler than the realities we escape *from,* yet they seemingly offer more freedom. The explanation is that escaped realities are play environments that make it *safer* to exercise preferred freedoms while suspending dangerous ones.

The non-focal aspects may be deliberately simplified too, but it is usually sufficient to just neglect them. The simplification of one aspect naturally focuses our

attention on that aspect, allowing the others to fade, or stabilize into a temporary degenerate state.

To summarize the structuralist model here:

- *Physical reality* is made up of atoms. Our basic experience of atoms is our experience of non-living matter: things we throw, catch, break, join and so forth. Everything that we experience with our five senses. The archetypal escaped reality here is throwing a ball at something.
- *Platonic, mathematical reality* is ultimately based on *counting*. As the mathematician Leopold Kronecker once put it, "God created the integers, all else is the work of man." Arguably, even the continuum, the mathematical object we conventionally map to physics via geometry, is a fiction. The archetypal escaped reality here is any simple mathematical puzzle.
- *Mental experience* is made up of qualia. Without getting into the philosophy of mind aspect of qualia, we can note that our everyday experience of them is *overwhelmingly* social. In other words, there is an *I* experiencing something-it-is-like-to-be-me primarily because there are other people around enforcing the boundary of that experiencing-entity through social transactions, and imposing an identity onto it. The archetypal escaped reality here is a conversation with another human being.

With these three kinds of building blocks, we can characterize the nature of an escaped reality in a fair amount of detail. Not only can we identify the aspect that is being escaped and amplified (\ABQ, A\BQ or AB\Q), we could even quantify an escaped reality based on the degree of escapism along all three.

For technological reasons, it is currently very hard to escape (in both computing and normal senses) more than one of the three aspects of reality at the same time. I've seen games that attempt to escape along two aspects or even all three (*Grand Theft Auto* is arguably an attempt at \A\B\Q), but it is hard to do well). Movies do better than video games, but they are unfortunately not interactive. It should not be surprising that attempting to simulate more of reality in non-trivial/non-degenerate ways is harder.

Just to flesh out the idea in greater generality, consider the forms of escape that we bundle under religion and spirituality. Most meditative practices are strongly \ABQ. Most refined scholastic theologies are strongly A\BQ: obsessively concerned with the esoteric significance of numbers and holy words (think

Kabbalah for instance) among other things. Most organized social religions are AB\Q, obsessively concerned with social ritual, which Sarah explored last week.

There is no *essential* difference between meditating in a cave and playing *Smash Hit*. Or between playing *Bejeweled Blitz* and arguing about whether reality is a mystic Zero or a mystic One. Or between living a life immersed in the high seriousness of devout church life and playing *Clash of Clans*.

Except perhaps for one difference. Arguably, modern video games are much less escapist than traditional religions, and VR and AR games to come will be even less escaped.

Reality Primitivism

Yes, read that again, I am arguing that video games are *less* escapist than things like religions in pre-computing cultures, which are much more strongly escaped realities.

Surprisingly many people think it's the other way around, but the degree of escapism in a constructed reality has less to do with the technological sophistication involved, and more to do with the amount of suspension of disbelief required for participation. A thousand-year old temple, built of stone in geographic reality, represents a *far* greater suspension of disbelief than a superhero avatar inhabited in a virtual game or a spaceship in a movie universe.

One piece of evidence: it is much easier to share a game cheat or spoil a movie than it is to undermine a religious belief. The consequences are also less traumatic: you might kill the fun of a game or cause a loss of interest in a movie, but you won't trigger an existential crisis.

Santa Claus is a more powerful illusion than *Star Trek*, despite being technologically more primitive in its origins, and offering lower-fidelity simulations to inhabit. You never have the hard problem of telling somebody Captain Kirk isn't real (*Galaxy Quest* exploited that premise very well).

Closer to our world, a text-based command-line fantasy game is a much more strongly escaped reality than an immersive 3d world.

More generally, greater technological sophistication makes us less escapist, not more. This is counter-intuitive to a lot of people, whom I like to call reality-

primitivists: people who believe more primitive things are somehow more real, simply by virtue of being more primitive. Reality-primitivists, for example, believe that in some ineffable sense, pen and paper are more "real" than blog software.

Reality primitivists insist on the perverse belief that understanding the world better and acting more powerfully within it somehow makes us *more* removed from it, rather than less. The opposite is somebody who believes that older cultures were fundamentally more childish; that we, not our ancestors, are the Wise Ones (obvious, once you note that we are culturally older by centuries, relative to people we typically revere). It is an attitude that I think is fundamentally correct, even though it has a nasty history of being associated with paternalistic imposition of high-modernist authority. The newer is wiser and more real than the older. Paleomania is a kind of childishness. Neomania (of the non-groupie-silliness variety) is a way to be more adult.

Consider for example, the relationship between the two worlds of *The Matrix*. When the virtual reality illusion fails and Neo crashes out, he somehow ends up in what looks like a *less* technologically advanced culture (something that looks vaguely like a Paleo-rave cult that just happens to have a few cool subterranean ships and junkyard brain-stem VR jacks, but apparently cannot manufacture clothing in colors other than fifty shades of beige).

Contrast that with the sort of illusion-puncturing crash-out experience that is *actually* likely to happen in our world: a member of an isolated primitivist culture like the Amish suddenly being dumped into a modern city. It takes some pastoral-romantic mental gymnastics to pretend that they inhabit a more-real reality than we do. The unromantic alternative explanation — which I prefer — is that they simply inhabit a more squalid and miserable reality.

An Escapist Definition of Civilization

I have a metaphor for understanding progress this way: the womb is the ultimate escaped reality, and progress is about leaving it. We *start* life in the most comprehensively isolated condition possible. A fetus in the womb is *literally* a brain in a vat. One that makes even the fanciest VR headset pale in comparison. There's a literal VR jack in there (it just attaches to your navel rather than your brain stem).

The rest of life is a very extended leaving-of-the-womb. In a primitive culture, you can't wander very far because it is unsafe to do so — you get out of the womb, and

enter a very strongly escaped reality of shamans and magic and mythology, within which you can do very few things. Hunt and dig up yams and dance around the campfire telling not-very-good ghost stories.

You remain a brain-in-a-vat, with your realities being pumped in by the village shaman telling you those stories by the campfire, instead of the umbilical cord.

By contrast, the more technology you add to the mix, the farther you can wander from the womb. Literally. You could get into a spaceship and travel off the planet, or into a submersible and travel to the ocean depths. In the process you can encounter stranger realities than have ever been imagined by even the most creative primitive mythology.

You could even *define* civilization as the process of constructing increasingly less-escaped realities under older, more-escaped realities. The cycle of progress seems to work as follows:

1. Design a strongly escaped reality that we can safely inhabit
2. Crash out of it by accident and get alarmingly closer to reality
3. Retreat hurriedly to a less escaped reality (a less womb-like one)

So through a process of collective crashes and escapes, we seem to use technology to gradually become a less escapist species. This neatly fits Philip K. Dick's definition of reality as that which does not go away when you stop believing in it. A crash is when you stop believing in a virtual reality (thanks to a broken illusion) and stare at the alarming stuff that does not go away. Then you hurriedly construct a new virtual reality to escape into. But fortunately, your mind has expanded just enough that you retreat less than you crashed. More does-not-go-away reality is now an enduring part of your beliefs.

Here's why this is a good definition. In general, the world used to be a far less hospitable place for humans, and has gotten progressively more hospitable thanks to the accumulation of managed technological realities. In a primitive culture, crashing out of the virtual reality created by (say) a womb-like paleo-tribal mythology with its priests and temples was a very dangerous event indeed. You were on your own in untamed forests, vulnerable to everything. But the more technology we injected into the environment over the centuries, the less dangerous it became to leave the consensual virtual reality of the tribe and experience less escaped realities for yourself.

This suggests something important about virtual realities of any sort. What determines the strength of an escaped reality is not the sophistication of the technology enabling it, but *the number of other people who believe absolutely in it.*

This is a *social womb* definition of virtual realities.

A paleolithic tribe of a few hundred strongly and absolutely believing in a bunch of local gods, with life organized around performing those beliefs with stone implements and spears, is a *far* more powerful virtual reality than one piped in through VR glasses and only weakly/ironically believed in by tens of thousands. Because it is a much stronger social womb.

Escaped Realities as Social Wombs

Every escaped reality is a more or less social womb. You could say that the social order of any age is a set of such social wombs. Once you accept that the strength of a virtual reality is a function of the strength of collective belief in it, rather than the amount of technology involved, you analyze it very differently.

The social womb metaphor explains the nature of the mental-experience vertex of the Penrose triangle. The reason mental experience seems to degenerate into social-ego experience is that we are always inside a social womb of some sort. The unbounded, universe-sized social ego of the child in the womb (the perfect featureless universal subject) shrinks to a size determined by the strength of the escaped reality represented by the social womb. The stronger the escaped reality, the larger the human ego can be within it. The non reality-primitivist term for this effect is *anthropocentrism.* As in Copernicus and double-helix and selfish-gene and stuff.

There is arguably a kind of asymptotic natural state a part of us yearns for: being an unnamed and featureless universal subject that defines others but is not itself defined by others. This is what we imagine pure power feels like. This is also our best guess for what being in a womb feels like (I personally don't remember what it feels like, but perhaps you do).

This explains why more primitive, insular cultures also tend to be more totalitarian, with a vastly exaggerated sense of the importance of their social realities. Within the boundaries of a social womb, the local gods are indeed very powerful. Crash out of that womb, and suddenly your social ego shrinks, and the

statures of your gods shrink as well. Among other things, the reality shock makes you far more thin-skinned and sensitive to offense. Mere cartoons can threaten your entire sense of self. Like a child being told there is no Santa Claus, you might throw a tantrum. Especially if the reality dose comes with laughter.

The womb metaphor also suggests why it is easier to retreat from reality than approach it. The direction of escape is always clear — it is the most womb-like direction. The direction of approach is a diverging set of exploration paths that wander beyond the current social womb. This should not be surprising. There is more unknown reality out there than we comprehend today, so it makes sense that the road to reality would be a set of diverging paths rather than a set of converging ones (let alone a *single* path). Penrose should have called his book *Roads to Reality*. Plural.

The social-womb quality of escaped realities is not limited to obviously primitive ones. It applies to contemporary ones as well.

Making money in the economy of things like manufacturing is \ABQ. Making money on the stock market is A\BQ. Making money in the "service" economy is AB\Q.

The auto-worker thinks "real" work looks like welding. Atoms are real, bits and social egos are for the weak. The banker thinks "real" work looks like Master-of-the-Universe creative-destruction achieved through capital movements guided by quant-trading esoterica. Bits are real, atoms and social egos are for the weak. Jeffersonian middle class romantics and faux-artisans think "real" work involves enacting relationships with other humans. Atoms and bits are for the weak.

I make the most fun of the last group because they're the softest targets, but the conceits of the other two claimants to "real" work are equally amusing. Wall Street is as much a comforting social womb as the world of Portland hipsters.

I think all such citizens of contemporary escaped realities are in for a reality shock when things like VR and AR go mainstream — they will expect to find *more* escaped realities when they put on their headsets, but will find themselves dumped into *less* escaped ones. They will imagine they are jacking *into* the Matrix, and will find that they are actually crashing *out* of it.

It happened before with online communities. Plenty of people are still in denial about the fact that that is in fact what happened — they agonize about online filter bubbles while ignoring the fact that geography is a far stronger filter bubble than the Internet. It will happen again with our newer virtual realities.

If you are planning on getting into the business of designing VR environments anytime soon, you would do well to follow a counter-intuitive design approach: think of your goal not as the task of designing an escaped reality, but a crashed one. Because when your customer puts on that headset, he is not going to escape to a simpler reality than the one he already inhabits. He's going to crash out into a messier one.

You're not in the Blue Pill business. You're in the Red Pill business.

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Thingness and Thereness >>

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Comments

Marc Hamann says

January 16, 2015 at 1:53 pm

It is interesting to consider the Internet / Social Media and MMORPGs as "crashed realities".