The Second Crystalpunk Manifesto

The Future was Our First Love [And it Will be Our Last]

Here it is explained why Crystalpunk is like a rubber ball rolling down Jacob's Ladder.

We Have Come to Give You Little Minds

Why a dissected demon looks human.

Finding Voice and Writing Gloss: The Crystalpunk Constructor

During the night we are all blind, Yet we see that we do not see.

The Crystal Whisperer

For every crystal a proper combination of words exist that will force it to dissolve.

The Language in the Corner of Your Eyes

Language is a bedtime story about fearful lands where no human being has ever been seen.

Corner Moves

Some little routines are given here to make solid what was first without shape.

The Memory People

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How the Crystalpunk made an invisible creature between what was actually stated.

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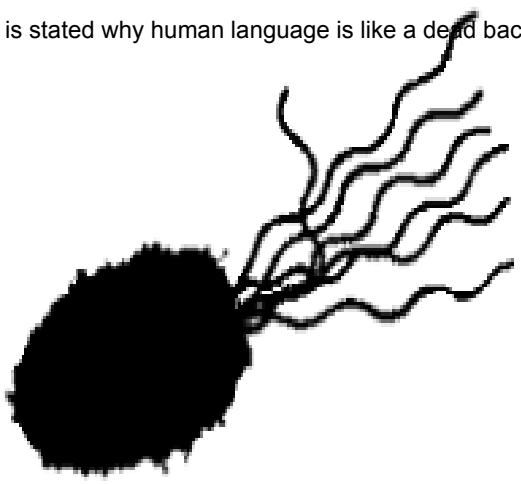
Wildtype BacterioPoetics

Here it is stated why human language is like a dead bacteria.



The Future was Our First Love [And it Will be Our Last]

In which it is explained why Crystalpunk is like a rubber ball rolling down Jacob's Ladder.

Crystalpunk is the big push of the dilettanti, a simpleton stampede, a coxcomb carnival, a platitude-peddling potlatch, a romantic cargo cult, a mountebank excursion into the VIP rooms of knowledge, a solidification of the ignoramus's tantrum, a wild farrago of those who run before they can walk to discover how non-trivial things become, an ABD of being Free from the NOW. Crystalpunk is a self-invented movement for self-education that is reaching for the high ground, from the antechambers of happy amateurism below ground, remaining completely oblivious to the middle ground. We are the jaywalkers of *terra incognita*! We are here to give a new name to the Anarcho-Homunculi Jezebels who make something out of nothing. Crystalpunk is a rallying cry for people to start making all sorts of weird things from mind and matter. Things that are slightly out of kilter. Things that need a Crystalpunk to appreciate their delights. Things that are radical but which hurt no one. Things that are big physically (even though that is often the easy way out) or things that are big mentally. Things, in any case, that are mnemogenic in one way or another. Things that slip past the filters of consciousness and stick in the memory like a boot in the mud. Things that confabulate into perfect shapes and synthesize unities from patterns previously distinct. Crystalpunk is the alter ego of a head struggling to find meaning, a meandering, discursive search into all the Gracelands of Uncertainty that are dotted across the globe, incubating a thousand questions that all demand the Great Work of Crystalpunk. With the true joy of the lunatic, giggling dangerously like the mad fucks we are, we bum rush the show of the professional, we whiten the map of knowledge with black paint. We might be crap, but at least it's a kind of crap you won't find anywhere else. Behaviour is constructed in the present to anticipate the future we have extrapolated from the patterns of the past. Recognition is to know anew. What Crystalpunk names, organizes and acts upon is the need to create a living memory to work, live and think in. To borrow from Thomas de Quincey, you can learn something new from each paragraph of a cookery book but, even though our Gold Tiger's Eye Curry is the stuff of legends, Crystalpunk is not a cabal of aspiring food writers and home cooks. Crystalpunk is not a syringe filled with recipe doggerel, but an ambience that radiates Power, that suggests ways to arrive at new things based on what you know already. Crystalpunk digs the spurs into the flanks of its hobbyhorse as if it were a thoroughbred: We are the equestrian underground of hyperbole!

This second manifesto, after the disarrayed wildfire shrieks of the first one, is our deadpan excuse for a philosophy, a vortex of things to chew on in your own time, a pile of words suggesting new links to follow up as you pursue your Crystalpunk Civilization. We are too frivolous! We are too fond of our bodies to withdraw in some penultimate rejection of matter! We identify our state of mind as gnostic, but little about us is characteristic of those who try to turn the bulk of their emotional system to stone, condemning what is left to watch the only film showing at the Mystic Cinema. Frame by frame the gnostic sees the special effects of evolution stripped from a universe slowly returning to nakedness. Moving backwards in time the organic dissolves into crystal, the crystal into undifferentiated magma, into cosmic dust unformed, and further back still. On a death mission our universe is! Back everything must go into heat and radiation and finally, at the very end, into Alpha Soma, into a psyche independent from matter. Enlightenment being the retrieval of a backup copy of a timeless consciousness hidden deep inside the artificial human consciousness that we take for granted but which is really an illusion. Perhaps matter does not exist at all, the extremist claims: it is just a mirage to be removed from our mind by introspective brain surgery. Mystics have always believed in the need for a strict diet, in the cleansing power of hunger, to undo the dictatorship of matter over mind. Crystalpunk prefers people who clean their plate. We are occult in the persistent belief that certain capabilities of mind are underrated, we are magickal in our making of a self-consistent world for us and our friends. "I was taught by dreams and fantasies / Learned from the friendly and darker phantoms", Edwin Muir wrote in his autobiography, and so are we. But that is the end of us as mystics. We are not crystal-gazers. The souls we conjure, the ghosts we seek to bust, are never outside us. The mind is made from and brought forth by matter, and this is where all explanations must finally be found. If anything we are a movement for grassroots artificial intelligence. Yet, in our making things *with* the mind and not *for* the mind, we are undeniably gnostics of a Crystalpunk kind.

The Crystalpunk Progress is not one that spirals inward into some prophesied paradisal cul-de-sac complete with all the usual stock attributes: geometric lay-out, meticulous

lawns, grazing sheep, hazy dreams, rivers of wine, bearded men, immaculate perfumes, sealed off and closed in upon itself, bestowing the hidden meaning of it all on the traveller lucky or righteous enough to successfully pass the ambushed approach roads. All that moralistic rubbish we know from the Game of the Goose and Donkey Kong. Our path is rather one that keeps spiralling outwards like life itself, starting halfway, going nowhere, concerned only with the novelty of mental states entailed by input independent of 'meaning'. Noise can 'teach' you more than music, but the subject of teachers in the Crystalpunk Yes or No remains a difficult one. As Crystalpunk grows it will irrepressibly leave behind a trajectory of thoughts and ideas entertained, a calendar of bonanzas, conferences, tournaments and workshops past and forthcoming, a string of social manifestations. These are our invitations to the Inspired Non-Crystalpunk to ramble along with us. With the ease of a bellboy sending his elevator up and down a skyscraper, you can move in any chosen direction along the curvatures of our Progress.

We Have Come to Give You Little Minds

On why a dissected demon looks human.

Whilst on honeymoon William Butler Yeats discovered the talent of his new wife Georgiana Hyde-Lees for automatic writing, and from then on they devoted one hour every day to recording the "disjointed sentences in an almost illegible script" that came to her. It was years before the Nomen Nescio Writer responsible proclaimed itself a manifold of shape-shifting entities, stating its true intentions: "We have come to give you new metaphors for poetry". Surely Georgie was just pleasing her much older famous husband with self-induced daydreaming fancies. But the fact is that the Jabberwockian constructs produced by their sessions with these little minds and the pseudo-profound nonsense they conveyed was nutritious to Yeats' mental powers, as it led him to locate new resources of expression and confidence within himself. These Unknown Instructors, as he would commemorate them in a later poem, somehow gave Yeats the strength to turn his former self into the giant upon whose shoulders he was now standing. The poetry that followed was not just a remarkable new beginning, but an inclusive revolution away from what had come before. The mythology of Yeats, his Blakean visions of those who have always been here, confusing as it may be in its enumeration, comes naturally and gracefully when experienced first hand. As a grotesque it is fascinating in its own right, designed as it after all was as an organ for poetry. In the hands of the critic this experience of witnessing the search for and within a private system of meaning, clouded by the use of 'self-evident' symbols in maddening potions of heraldry, ends as a boring exercise in double-entry bookkeeping of symbols and corresponding meaning. What makes Yeats a great writer is his failure to imagine that others might not have a clue what he is talking about, a form of self-confidence that borders on the ridiculous, but then again Yeats did much that was parsimoniously daft. It is this naivety of voice that enables Yeats to change the attitudes of those who at the mention of fairies would otherwise prefer to throw the book in the fire unread. Before they know it, they find themselves reading and rereading his tales, browsing second-hand bookshops for more. It is through example, as if he were a Dancing Wu-Li Master, that Yeats convinces his readers to value the insight that a person is not worse off talking about a waterhorse as if it was real than talking about the mishaps of a co-worker, career opportunities, or the recent demise of some despised software giant on the stock market. Yeats' refusal to reject any explanation or experience no matter how unlikely without first having scrutinized it, his choice to take stories at face value and as a part of a bigger picture, made the critics write when Yeats died at 74 that "the best was still to come". Everyone has one defining talent, it is sometimes said, one thing that defines a person and makes them truly unique. As elusive as said waterhorse, some talents, like being photogenic, are hard if not impossible to discern at face value. Before the camera existed, photogenicity would have been a pointless talent, the lack of a proper sensor must have spelled doom to millions. This is why we need to keep developing new technologies, in the broadest sense, to discover the mysteriogenic talents that remain without a detection device. Yeats' feat of unearthing his second voice from the chaotic output of the little minds is popular with Crystalpunk because it shows that mental growth is the accumulative adaptation of mental registers to novel input, that you need exposure to all sorts of input to serendipitously realize what you are capable of becoming. The answer to the question of the nature of your talent is not necessarily to be found in newness alone. Your defining gift might be to live without buildings, to dwell in caves, to make homely the neolithic tent.

This micro-manifesto of the Crystalpunk movement is not a metaphor: We Have Come to Give You Little Minds! We have come to make them and give them away for free, failures as dead-end streets marked on a map included. But we ourselves are unsure about the nature and origin of these cognitive critters to be roasted on a low fire of analysis, clueless as to their proper place within a classification of mental objects. The simile we have chosen to explain the bandstand of little minds with a perfect mixture of intuition and abracadabra comes from Giordano Bruno:

> "If one wishes to generate a thought in someone standing at a distance, one must shout so that the thought is produced in their internal sense through their hearing it. But if the person is closer, a shout is not needed, only a quieter voice. And if a person is immediately nearby, a whisper in the ear suffices. But [little minds] have no need for ears or voices or whispers because they penetrate into the internal sense directly, as we said. Thus, they send not only dreams and voices and visions to be heard and seen, but also certain thoughts which are hardly noticed by some. They communicate truths sometimes through enigmas, and sometimes through sense impressions."

The Crystalpunk memory, if it is to be complete, must contain a copy of itself and once this Mappa Mundi of the Knowledge of Crystalpunk is pinned to the wall, it becomes its own voice. What follows is an iteration of half-products, a Grand Grimoire of the illocative, a demonology of the between of things, a pruning of the bewildering network of our preliminary taxonomy of little minds. This is what is on our minds, this is what is in our memory, these are the tempers Crystalpunk is domesticating: have your memory and eat it too.

The Crystalpunk Constructor

During the night we are all blind, Yet we see that we do not see.

Underneath the floor of my house, beneath the mandala-embroidered carpet, the secret trapdoor. As if I was architect to the Invisible Khmer of Turriphilia, drugged out on a Gothic pill, the first Crystalpunk wonder of spatial imagineering was commenced with all the free-flowing logic you would expect from a tab of Masonic LSD. Four meters below ground, Das Crystalpunk: a tessellating archipelago of little cubes, all identical in size, just large enough for a small person to stand upright in, is expanding in constrained patterns according to a system that will reveal itself as construction goes on. On top of the first cube (as on the lintel of the gateway to the Land of Illusion, where the fairies talk dreams into you, as recorded by Cao Xuegin's *The Story of the Stone*) it is written: "Truth becomes Fiction when the Fiction's true. Real becomes Not-Real when the Unreal's real". With the secrecy of a dream this archipelago will continue to ventilate the soil, accumulating cubes at its borders, from underneath the houses of my neighbours into the world it will spread, in silence as the mortgage-driven would fear for diminished property value. The dig will go on, in the immortal words of Buzz Lightyear, to infinity and beyond. I will dig until I find oil or ore or until I reach the earth's magnetic core and its pull rips out the haemoglobin from my blood. When the archipelago's growth finds itself faced with obstructing fellow subterranean structures, some ziggurat of modern engineering claiming precedence, it will branch around or underneath it as the rules for cube placement dictate. Finally this Crystalpunk Tarot, the meaning of each cube depending on what comes before and after, will encounter some part of itself halfway round the globe, like two large but still separate fragments of a jigsaw puzzle suddenly shifting into one. This archipelago is the Crystalpunk Vatican, an idea as much as a place, a power in the world and in the minds of Man. A figment of folly, poetry plastered with krispy-krunchy glossolalia, gently sliding in and out of existence, falling lightly on the world before swirling up like smoke minus the soot into the skies of Earth and Imagination.

Like a frog softly killed by the slow boiling of its pond this Crystalpunk had lost his bearings on the internal compass that had never failed him before. I found that I was not so much lost, but that the Gorgon Head of the black market of the economy of the mind had looked death into me. Swept along with the wrong wave, it was I who had allowed myself to be corrupted by an MK Ultra of self-deception. No longer able to distinguish self from non-self, my natural immunity to bad dreams had gone. Perhaps you are familiar with that devilish

trick in music, one sound unexpectedly separates into two sounds each modulating onwards according to personal destiny. Afterwards the composer merges the sounds again but the listener's inner ear cannot now hear them as one like before. What needed to be restored was this innate scepticism, this gatekeeper of the sensory stronghold, the natural stubbornness to not sheepishly believe in the world as it appears to be, to be an actor and not a pawn in a headcount. In music, too, a once favoured record not played for years can be re-experienced with the passion of an older self, every line and every break unexpectedly arriving as predicted and enthusiastically received, yet despite this pleasure of re-acquaintance you never feel the need to listen to that record again for the next five years. I had lost my voice but it was not enough to recover it; it would not suffice to go back in time as far as it would take to find it in good order and continue from there. At least I knew what I was looking for, and even though I was obese with quotes from Great Writers revealing truths and voices resonating with the void, to talk in words was not now the answer. To break through the floor of my house with pickaxe and spade was. There is wisdom woven into the Gordian Knot and that is why Alexander's faith in the sword alone missed the point when severing it with the absolutism typical of the anti-gnostic. Virginia Woolf was right: "Fantasticality does a good deal better than sham psychology".

This maze that is the Crystalpunk Ragnarok is a grandiose trick of jumping ship to save face, the creation of a temporary eddy to dwell in while elsewhere the little minds are repairing us, as seen several times in the Greatest Hits of Samuel Taylor Coleridge. Halfway through the *Biografia Literaria* (truly spectacularly beautifically unreadable, the best map we have of the workings of his mind) Coleridge finds himself trapped in his own metaphysically scented swamp, and with the Kraken already nibbling away at his toes, each new argument, instead of getting him out, only succeeds in getting him sucked in deeper. Drowning is what he is about to do and his solution is what in Go is called a Tenuki. Suddenly, just in time (HA!) a lifesaver arrives in the form of a fake letter saying just what he needed to allow him to do a volte-face and move forwards again (biography tells us that Coleridge never actually read his letters). The gloss added to *The Rime of the Ancient Mariner* thirty years after its composition, the running commentary of a pseudo-gnostic sage writing about the "invisible inhabitants of this planet, neither departed souls nor angels", changed the tone and intent of what was annotated, making it the classic of Buccaneering Soul-Searching it has become. But most instructive of all are the three demons glossed into the genesis of the *Kubla Khan* dreamwork. Coleridge himself explained it as a psychological curiosity, as a fragment saved from a much larger poem that came to him in the hazy loops of trance vision or opium dream, the poem as we have it being all that was rescued after the sweet hypnonarcotic state was interrupted by that travelling demon-person from Porlock. Borges had another story, he believed Coleridge to be incubated by the spirit of the same ancient master builder who first inspired the Khan to build the pleasure dome, and when it was consumed by fire, this Aladdin whispered the same design into the mind of the dreaming Coleridge, expecting him to rebuild it transcendentally. Arthur Cooper, thirdly, believed Coleridge to be visited by Li Po because the last stanza of *Kubla Khan* perfectly worded the philosophy of life of this ancient Chinese poet. Or, to paraphrase Li Po himself, the question of where Xanadu came from becomes: did Coleridge dream he was Li Po, or did Li Po dream he was Coleridge? There is no such thing as single malt memory, and Cooper goes on to say that certain famous phrases of William Blake ("Tyger tyger, Burning bright" and "To see a world in a grain of sand") are echoes of Chinese poems written millennia earlier. Crystalpunk is an all-terrain vehicle dealing with the implications of this: road rage is our middle name and philosophy our roadkill.

The Crystal Whisperer

For every crystal, a proper combination of words exists that will force it to dissolve.

"An age-old intelligence does not go away in an era of speed" (Ezra Pound): each generation must invent its own version of the East and the Other. Crystalpunk is to the non-Crystalpunk what the Chinese were to the medieval reader of Marco Polo: a chinoiserie of which the original shunned Western touch in a politeness meant to be insulting (to attack is to be vulnerable). As it happens, Crystalpunk turns out to be a spitting image of the ancient Chinese in all their sinological splendour, as they appear to us from the incredulous stories bouncing back and forth like a game of Chinese whispers along the Silk Route, that great alchemical cauldron, that lifeline between goods and

cultures that fused the little that was known about the largely isolated districts of the world into a new Vox Humana. Like the ancient Chinese, so the Crystalpunk: We turn myth into history, not history into myth. Our system of perspective is ad-hoc and decentralized, viewpoints are mobile and controlled by the viewer instead of fixed in space by an almighty creator. Even the ancient Chinese tradition of ancestor worship is part of Crystalpunk, as long as you allow ancestry to be memetic as well as genetic. If a cellular automata, say, is granted the right to be ancestral, then we worship ours with the best and most pious of the Yellow Men of yore. We are made in China, but there are differences too: we don't do emperors, so maybe we're not really Ancient Chinese after all, but a tribe of half-acclimatized Persian bandits or Turkish smugglers, fellow-travellers hiding in the outskirts of the realm, cursing the Khan when no one is listening, secretly still believing in the Lovecraftian Old Ones our pagan gods. Getting our kicks from this distant High Culture but not our private knowledge, consuming but never truly digesting it.

If a movement for self-education needs a teacher, the 4000-year-old game of Go is the benevolent all-knowing master at whose feet we kneel. Like a joke can be serious and the high-minded have their own mechanisms for humour, you do not need to travel to smile about the follies of the universe. It is Go, that perennial wunderkammer of analogies and allegories disguised as a game, that makes us clairvoyants à la Miss Marple, reading the world through the prism of our game. All games worth their sweat have myths of origins, and the ludogenesis of Go begins with the legendary emperor Yao's need to teach his lazy, unruly son (the still-stereotypical imperial problem child indifferent to learning) a lesson about life without actual teaching. Appended myths tell of the even more legendary Yellow Emperor Huang Di who in fact invented Go as a precursor to the holodeck, subsequently transmitting the game to Yao in a dream. The shape of the board is a star map. The centre of the game is the centre of the universe, the earthbound symbolic twin of the pole star. The black and white stones taking turns represent the flow of day and night, the number of intersections equals the number of days in a year (in the Chinese lunar calendar) plus 1. This game, which is the oriental antagonist to Foucault's pendulum, bridges the gap between space and time, between mind and matter, between star knowledge and earthly ability, between the silent contemplation of the monk and the gung-ho stance of she who commands ants and armies to create things. To the sovereign, unimportant subjects do not exist; the trivial is a poor man's pursuit. Like hardcore pedestrians going for their Sunday afternoon walk rain or shine, Go players play their game as a gradual composition of patterns that feel 'right' to third-eye vision. As the windmill, unable to bend the tornado to its will, only tries to make use of the wind the best it can, good Go players only try to process the opponent force into something useful, skills willing, as meteorological conditions allow. Each game is a search for balance between cumulative growth and marginal decay: Go is a progression of structures folding and unfolding in a universe that doesn't take sides. It is also the original source for a piece of insight usually attributed to the science of complex systems: playing Go means acting in a world filled with butterfly effects gyrating from beneath your feet, the smallest local action able to cascade into global catastrophe in the long run. In Go, players can sit next to each other while their minds meet head-on, attempting to surround each other on the board. Often, while attempting to read the balance of power on the board (who is surrounding whom exactly?), the picture has the mutual exclusiveness of the gestalt drawing that shows a young lady and an old witch depending on how you look at it, but never at the same time. The Go board itself plays a visual trick on you: by being slightly asymmetrical (cramped on the horizontal lines, spacious on the diagonals) it deludes the mind's calculation of connecting lines, patterns and spaces. The pro, however, will remind you that what the stones you play should create is a strong framework of empty space: you need to learn the many meanings of silence in a lifelong initiation to noise.

Every rule-based structure can be interrogated through its interface. You play a move, push a button or present a mind with input and the structure sets to work to produce an answer. If its answers are to be interesting this structure must be complex, and because of this complexity it must end up by replying with unfathomable oracle-speak. To play a game is to respond to questions posed at each state with an answer that is also a question; another gnostic forging of continuity from the labyrinthine. Playing against a much better player a hundred times will teach you nothing. It will only reinforce a hundred times that your way of reasoning about the game, your way of reading the situation, needs not a higher ladder but a conceptual shift still beyond your powers of interrogation. A friend asked the young Wystan Auden if he had ever written poetry. He hadn't, but much later, in

recognition of the power of a good question to reveal what mirrors fail to reflect, he recalled: "I knew that very moment what I wanted to do". It is through the reaction of others, through the deceptively innocent questions of a stranger, that we are able to reinvent ourselves. Burroughs trained as an auditor with Scientology for this purpose; Crystalpunk prefers to write and answer its own questionnaires. A game is played backwards in the mind and forwards on the board. The opening theories of the art of conversation all aim to achieve a well-balanced series of unobtrusive yet stimulating questions most likely to create worthwhile dialogs. Some people can talk to anyone, and they are the angels Swedenborg spoke with.

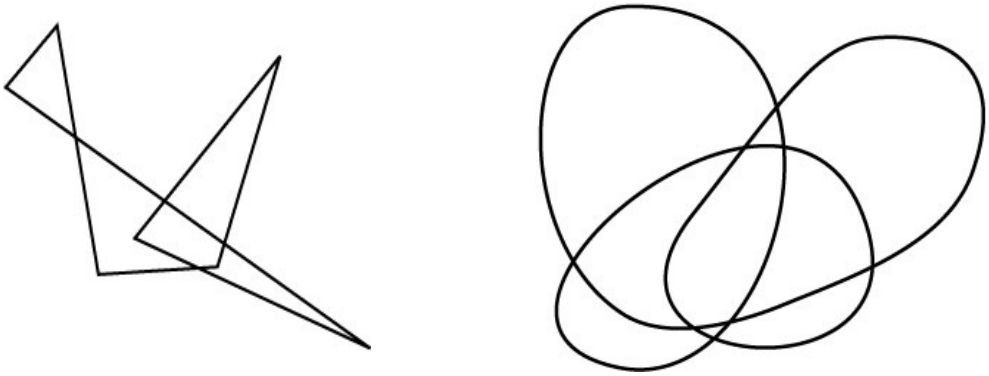
The ludogenesis of Go is all about reinforcing the idea that its abstractions are a faithful and adequate model of the world, and it takes a poet to see that this turns the game into a virtual reality and the player into a ludomancer. The model can be made to run faster than the world it models, or as Edward Fredkin wrote in defence of his digital physics: the universe is a computer that calculates the future. The fortune-teller is a practical joker, a proponent of practical science fiction at its worst, but in the end the theoretical possibility of computing the future, the demon of Laplace, is the logical outcome of scientific rationality. There is every reason to assume that abstract board games, the first consciously rule-driven processes of symbol manipulation, paved the way for the subsequent (derivative) invention of the computer. To play is to program, to program is to make things, and these things include the future. The computer itself is a chinoiserie; the fact that Leibnitz took binary code from the I Ching substantiates this.

Of all the symbolic languages, Go not only has the richest history, it has also found the most optimal trade-off between simplicity of rules and complexity of behaviour, and for this reason it is the Motor of the Crystalpunk Curriculum.

The Language in the Corner of Your Eyes

Language is a bedtime story about fearful lands where no human being has ever been seen.

After smoking paint scraped from the walls of Lascaux, some Crystalpunks decided to re-enact a gestalt experiment first undertaken by Wolfgang Köhler. Participants are presented with two pictures of meaningless lines (one lusciously curved, the other straight and sharp-edged) and asked to name one picture "Maluma" and the other "Takete" as they consider



fit. Our test confirmed the outcome of all previous tests, adamantly showing that there exists a mentalistic industry operating independent of free will, below the radar of conscious control. Thousands of neurons are working in continuous shifts to mechanically render sensory data meaningful. Raw signals come in and are fabricated into a small number of inescapable constants, atoms of meaning, quarks of language, that come out at the end in much the same way as tins of tomato sauce fall off a conveyor belt. Maluma is round and Takete is sharp and this is the way it has always been, for us, for infants and for non-Westerners alike. It is our suspicion that the anarcholinguist minority reversing the natural order of mental sympathies in this test were deliberately falsifying the results to create a smokescreen in front of the most likely interpretation of the outcome: that the mind is segmented, that each segment can be treated like a predictable laboratory reagent, that each segment corresponds to certain 'observables' or categories in the world. By implication it follows that the mind is programmable, to be manipulated by objects that trigger in us a flash of recognition, that invade us with language and stir ancient voices to

whisper instincts into the inner ear of our limbic system. To be aware is to have one's tin cans opened and closed by the sous-chefs of consciousness. If thought is a soup, our language is a fork to eat it with.

The history of the little minds as it comes down to us shows the gradual transition of their supposed location from the outside to the inside. It has always been the poets who explored ways to communicate about distinct levels of reality and awareness, who sought out and translated into ordinary human language the uncanny sensation of being spied on by unknown agents of intelligence, who made the supernatural natural. Our definition of poetry is old-fashioned: while prose speaks of events from outside, poetry tries to recreate the direct experience of an event in the mind of the reader. Once again Samuel Taylor Coleridge, the Godfather of the Crystalpunk spirit, the Philby of the Crystalpunk Soviet, not feeling the need to include external intelligence, brought back from the wonderland that is those bits of ourselves that elude us, the notion that when you keep your eyes closed and leave the mind free to wander in search of its own source, you will find where language originates:

> "In looking at Objects of Nature while I am thinking, as at yonder moon, dim-glimmering thro' the dewy window-pane, I seem rather to be seeking, as it were asking, a symbolical language for something within me that already and forever exists, than observing anything new. Even when the latter is the case, yet still I have always an Obscure feeling, as if that phenomenon were the dim Awakening of a forgotten or hidden Truth of my inner Nature."

A Celtic story warns its readers against accepting the challenge to a game of chess by demons and banshees. This they will only do, in a crooked sense of fairness, to steal from you what you don't want to give them (mostly your daughter, pretty and innocent, as Hollywood still prescribes). In the light of the demon's extra-human intelligence you cannot ever hope to win and the match is a decoy, only meant to confront the human with his futile vanity. The Highlands being the MIT of their day, only the Scottish Lairds, Walter Scott tells us, managed to get the better end of the deal, turning the Irish banshees into butlers on commission, tending to the spiritual needs of the master of the house, fortune-telling included:

> "Several families of the Highlands of Scotland anciently laid claim to the distinction of an attendant spirit who performed the office of the Irish banshie. Amongst them, however, the functions of this attendant genius, whose form and appearance differed in different cases, were not limited to announcing the dissolution of those whose days were numbered. The Highlanders contrived to exact from them other points of service, sometimes as warding off dangers of battle; at others, as guarding and protecting the infant heir through the dangers of childhood; and sometimes as condescending to interfere even in the sports of the chieftain, and point out the fittest move to be made at chess, or the best card to be played at any other game."

In fact, the use of chess is an anachronistic translation since the game intended was probably Gwyddbwyll (in Wales) or Fidchell (in Ireland), both translating to Wooden Wisdom, once again confirming that knowledge flows from some games like water from a well.

Corner Moves

In which some little routines are given to make solid what was without shape.

Unlike chess where strategical strength is in the centre of the board, the right way to position stones in the first stages of Go remains a mystery immune to reasoning. Captures apart, stones in Go once played will remain where they are for the entire game: the beginning is already part of the middle and endgame. In a surrounding game the final aim is control over the outer line and especially the extremities thereof, but stones are nowhere more vulnerable than when too near the edge, where the border changes the ordinary ratio of stones-capturing to stones-captured in favour of the attacker moving edgewards. It takes four stones to capture one, six stones to capture two, seven stones to capture three, Go is a lesson in resource management, the corner its pitfall. What textbooks have to offer instead are josekis, stable corner patterns half-formed and temporarily at a draw, fatally

important as anchors in the hatching of the surrounding net afterwards, but inconclusive in themselves. Josekis don't have names, they are classified by the distance between the first stone played and the nearest corner. The educational philosophy embodied in Go comes out in the famous joseki proverb that is also a diatribe against mere book knowledge: 'Learning joseki means losing two stones strength, studying joseki earns you four stones strength'.

Ever since Pasteur we have taken for granted the theory of biogenesis, that life can only come from life, and we except the theory of evolution, that life can bring forth slightly more complicated life, as the explanation for the diversity of life. Yet somewhere at the bottom of this vast needlework of being, somewhere deeply subterranean (both in practice and in the dark fears traditionally provoked by bio-crystalline thinking), resides the continuous process of abiogenesis. A continuum where life and non-life must in places overlap: Is a self-reproducing crystal alive? Is a virus alive or is it just a very large crystal? To what extent is the behaviour of bacteria determined by external physical forces rather than biological disposition? Is life suspended in anabiosis (like seeds and spores) alive? Can life evolve back into non-life to defeat death as a result of natural selection?

Where does Crystalpunk really come from? The question of first beginnings: the origin of life, the origin of species, the origin of mind, the origin of love, the origin of art, the origin of the Chinese, the origin of Go, the origin of language; the origin of the non-trivial is a surface to which neither glue nor Velcro will stick. An adjacent issue with regard to abiogenesis is the non-existence of a Life Quotient, a biomarker measuring whether a form of organization is 'alive'. Rene Dubos, to whom we owe the 'think globally, act locally' credo, generalized life as organization superseding matter: "If the first truly living form had not been endowed with potentialities transcending replication and growth, it would simply have grown larger and larger, becoming a giant undifferentiated mass". There exist plenty of platitudes disguised as profundities in scientific literature, like J. B. S. Haldane's "The link between living and dead matter is somewhere between a cell and an atom". Or what to think about Herbert Spencer who apparently believed the sea to be alive: "A living thing is distinguished from a dead thing by the multiplicity of the changes at any moment taking place in it". Using Occam's razor this formula was replaced by Von Neumann's "Life is a process". The big bang is a process, too, but apart from the mystics no one believes in a priori psyche. In its effort to define life without loopholes, science has never surpassed the formula first proposed by, again, Samuel Taylor Coleridge, a formula adopted by prominent figureheads of evolution theory like Richard Dawkins and legendary pioneers of the biochemical revolution like Joseph Needham: life is "a whole presupposed by its parts". Drawing a line between life and non-life is a purely tacit decision, solely in the eye of the beholder, an act of inspired pattern recognition spangled with Crystalpunk Pixie-dust. Ever since the seminal experiments by Miller-Urey, science has followed alchemical fiction, with flask-contained thunderbolts as the scientific abiogenesist's fount of wonder: life was to be forced onto a few well-chosen compounds with the same steadfast brutality applied when dynamiting into oblivion obstacles obstructing the construction of a new road through the rocky lands.

Life and death as concepts, as a classification of states, are malfunctioning windows never quite able to fully divide the two spaces they are supposed to separate: our point of entry into the arrogant kingdom of the living and our departure therefrom are unsure moments about which it is impossible to say whether they constitute a process or an event, a form of culminating growth or an emergence into full form. Parts of us have been born 10,000 times before, but Mitochondrial Eve's alcoholism will not excuse you in a court of law. Our personality, our free will, is a slice of culture sandwiched between instincts and behavioural patterns as ancient as the nervous system (for instance: birds scratch their heads in the same way as nearly all mammals and reptiles, as if they had four legs). We can only perceive what the senses can perceive, we can only learn what our learning structure is predisposed to learn, we can only construct memories in the way the stuff of memory can be made to stick together. But who are 'we' anyway? Bacteriologists counting the number of organisms in the tubing upstream of your arsehole have long known that 'I' is really a 'we': we have two mothers and one of them is not a person but an ecosystem, a zoo of beasties, 10 percent of your dry bodyweight inhabiting your gut, digesting your food, eating your dirt and adding their own excrement to yours. We keep the germs alive and the germs keep us alive, convention has it, but look a bit further and you find that "bacteria are us", as Lynn Margulis puts it. Bacteria are the josekis of life and much of what is 'us' is

uncannily shaped like the 'others': mitochondria, sperm cells, nasal cells.... This, too, is our memory.

The Memory People

In which it is explained that nothing is ever forgotten and everything is already known.

Most people 'solve' Noughts and Crosses during childhood, after which there is no excitement in playing it because you remember how to never lose. When I ask you: "what is two plus two?" will you calculate it, or retrieve the answer from memory? If it is possible at all to tell what is going on, can you control it at will and tell which of the two is quickest? Perhaps the brain scanner can tell or measure it by the voxel.

Our memories live on after we die. I do not mean that we continue to exist as a memory in the memories of the people we knew, I mean our memories themselves. As most of them did not originate with us in the first place, this is just as well. Not all of our memories survive, and not everyone's in the same measure. Memory, like a Go tournament, is not a democracy.

More than twenty years ago, as a child, I did an experiment in memory that was to last for life: a trivial event, ordinarily forgotten as soon as the moment had passed, was to be remembered forever. From the day after this decision was taken, all but the fact and intent of the experiment was lost. Even though I have never talked about this experiment before, someday, somewhere, someone, something, must remember what I have forgotten.

"Those Whispers just as you have fallen or falling asleep – what are they and whence?" - Samuel Taylor Coleridge

A Great Writer does not need the cancerous memory of expert clarification: the writing itself provides the best 'preface to the common reader', 'general introduction', 'critical reading', 'grammatology', 'deconstruction' and 'textual exegesis'. The oeuvre of a GW, who is by definition a movement of her own, is a random access memory; from every possible point of entry you are always close to some marvel of a paragraph overflowing your buffer, forcing you to reread it and put down the book to digest it. Greatness is measured by the average distance from point-of-entry to nearest mind-invading gem.

The knick-knackery on my mantelpiece, a little dirty because of the mud and moist clay carried along after digging in shoes and clothes: a Wei Qi token found at an archaeological dig in what was believed to be the tomb of the Yellow Emperor; a first sketch of *Light and Colour (Goethe's Theory) — The Morning after the Deluge — Moses writing the Book of Genesis* by Turner himself; an all-access pass to Area 51; the owner's certificate to an Orkney Island. My great-great-grandfather used laudanum with Samuel Taylor Coleridge and Thomas de Quincey, his mother was an astronaut and his grandmother a moonlighter. This is how I came to own the moonstone all my visitors like to touch (nothing special ever happens). From my mother's side we are half Manchu and half bacteria; gunpowder, chess and yoghurt were invented by us; a niece of mine just refuted quantum mechanics by accident while translating William Burroughs into ancient Egyptian. One lineage of the family, apart from the second brother who was a blind snake-charmer, died out when, after migrating to the Punjab, they became sacred but doomed gymnosophists and crystal-eaters. I have in my possession a 600-year-old iron needle these illustrious ancestors used to sit on.

> "Looked at again and again half consciously by a mind thinking of something else, any object mixes itself so profoundly with the stuff of thought that it loses its actual form and recomposes itself a little differently in an ideal shape which haunts the brain when we least expect it".

Like all dynamic systems, Virginia Woolf tells us here, memorabilia comes in four categories: 1) Those that stir nothing in the mind of the perceiver, 2) those stirring one-dimensional images that soon become boring, 3) those that generate unbearable meaningless noise and make the receiving mind unstable, 4) those, severely limited in number, that bring forth a chain reaction of fruitful thoughts that stream into the depths of memory until, if ever, its powers have dissipated by becoming an inalienable part of you.

Like a cow has stomachs, the mind has memory. All part of the same system, the question of priority is a misleading one where memories are concerned: some lay upon the mind like a boulder in suspension halfway down a mountain ridge ready to demolish the village in the valley if the forces of nature demand it; some are stored away in a room which is thenceforth avoided, but which is fitted with many doors all opening onto other more commonly used rooms. This room is shouting, whispering, begging, seducing you to come in. It is the place where feelings of acute shame, guilt and embarrassment, those emotions truly pathetic when spoken or written down, are put away until the house ghost chooses his moment to make their cantankerous presence final. These memories can and should be refused entry to the party of thinking: you can be the bouncer at the door, as it is better to take the risk of being wrong and unkind, than to be left with the inevitable mess that follows from weakness. The brain is a device that records change; a memory deliberately not recalled will slowly vanish from view and its impact will deteriorate like the explosive charge of an old bomb. Sleep and procrastination are the interior designers most trusted to redo the rooms where lingering depressions live.

Without thinking much of it, you read a few lines hastily dumped onto paper: a quick association, a thought, an idea, a revelation or a vision (from the Coleridge notebooks perhaps), and then the content, if not the very existence, of this fragment disappears from the table of the recallable. Years later this fragment suddenly appears fully intact from the depths of memory, where it managed to survive Coelacanth-style. In retrospect it turns out that this fragment, having rooted itself in your mind, went on to create its own relevance from the material at hand, growing into a hub of connections without losing its integrity: a habit of thinking, an invisible tic. Such hidden mental objects are not of interest for the thoughts they produce, but for the processes of thinking they create. The little mind is the function, but it is the unintentional intelligence of such objects that passes them the arguments they operate on. William Hazlitt defined the ocular spectra haunting the poet as "the natural impression of any object or event, by its vividness exciting involuntary movement of imagination and passion". We borrow this as a working definition of the unintentional intelligence (perhaps even social intelligence) of non-life.

Memories resemble their owners like dogs do; if I ever own a dog I will name it Google. Past mental states are not stored verbatim, but their 'feel' can by approximation be recreated from memories that can only contain, at best, what was acknowledged at that time. Autobiographies come in all shapes, but Siegfried Sassoon's *Memoirs of a Fox Hunting Man* is the only one I know that dares to explain his unworried unquestioning childhood as monadic, as a mind closed off from the world, revisited by a later development of itself. While little Siegfried was absorbing *Horse and Hound*, idly killing time between the next hunt or cricket match, dark clouds were gathering, the Big Berthas were slowly making their way to the front, history cocked up and the politicians, hurrahed by the public, snatched him away from his slacker existence into the idiocy of trench warfare. Sluggishly loitering about in a past that only his recollections can keep alive, the conclusion suggested is that we are all sealed off from the currents of the world as they happen in real time and the only thing we can do is to reinsert them afterwards as we actively remember our histories. It takes a GW to acknowledge it.

J. W. Dunne's *An Experiment with Time* is an eccentricity, but one beautifully written by an Etonian snob-cum-aviation engineer lost in the labyrinths of causality. Drawing on personal experience, and finding support in recent relativity theory (beware of the crank marshalling recent science in his arguments), Dunne argues for the possibility that the dream is made of memories both from the past and from the future. Moreover, this faculty for precognition is evenly distributed throughout the population; the only special talent Dunne prides himself on is his knack for recognizing the correlation between events in his dreams and actual events happening afterwards. After a survey of definitions and a splendidly modern portrayal of memory as a network with general images as knots and specific images as the gossamer threads connecting them, he moves on into the deeper waters of his experiment, documented from the inside out. He builds up his argument from his own dreams and their short-term memory sources, and from those of his acquaintances, all of whom remain long oblivious to the presence of the future in their dreams. Until, finally, not a second too late, the trick of making sense of yesterday's dreams in the light of today's newspaper is revealed. All the usual mistakes found in dream interpretations are mercilessly repeated in the Sunday-afternoon naivety of it all. Skimmed over is the fact

that in these matters you will always find what you are looking for: the dream, no matter how soon after waking it is written down, is not the same as our memory of it. In one anecdote Dunne describes how a childhood dream turned out to contain fragments of a future twenty years hence. In his early teens he read *Clipper of the Clouds* by Jules Verne that contains an illustration of a flying machine and, lo and behold!, in a time when planes did not yet exist, that night he dreamt of flying. The plane in his dream was, however, not a metal hull with a propeller as in Verne but a "tiny open boat constructed of some whitish material on a wooden framework". Only after designing a new plane of his own in which the pilot was strapped into just such a contraption, a wooden framework stretched with white canvas, did he remember his childhood dream, making the connection: the dream of his boyhood was a forward shadow of his future achievements. The Crystalpunk has a different way of making sense of this event: the mind comes pre-equipped with shapes and forms, peculiar to the structure of its nervous system, that make themselves real by forcing you to live up to them. Yeats would have explained Dunne's anecdote with his theory of humans existing within two distinct spheres of memory, one belonging to the individual and the other to the collective (itself an acid never long contained by its vessel). Yeats' Magic consists of learning to manipulate this embedded memory like a programmer's API:

> "1. That the borders of our mind are ever shifting, and that many minds can flow into one another, as it were, and create or reveal a single energy.
> 2. That the borders of our memories are as shifting, and that our memories are a part of one great memory, the memory of Nature herself.
> 3. That this great mind and great memory can be evoked by symbols."

This collective memory is to be understood not as a collection of memories but as a black box of latent innate responses and archetypal emotions presented to individual accumulative memory only after they have manifested themselves. Virginia Woolf, unaware of sex or sex drive, recognized this memory in the instinctual shame of incest when her cousin took his attentions too far. "It proves that Virginia Woolf was not born on the 25th January 1882, but was born many thousands of years ago; and had from the very first to encounter instincts already acquired by thousands of ancestresses in the past", she wrote. W. H. Auden, in a fine Crystalpunkian passage, puts it like this:

"In poetry as in life, to lead one's own life means to relive the lives of one's parents and, through them, of all ones ancestors; the duty of the present is neither to copy nor to deny the past but to resurrect it".

The experience of dying belongs to this memory as well. Assuming a near-death experience to be identical to a real death experience, dying must be one of the most uniform experiences one ever goes through in life. The literature shows it as a consistent progression of states: the light at the end of the tunnel, a sense of overwhelming love and peace, your past life flashing before you like a comic strip and all that. The death experience is a function with a predictable outcome buried in the architecture of the brain, callable through chemical excitation by drugs like ketamine, its ensuing sensation of seeing generated within the optical apparatus itself, from the eyeball to the cortex and the nerves in-between. Here archaeological research and psychedelic gusto meet halfway. On the one hand, we have J. D. Lewis-Williams who compared and divided into six types form constants found in rock art sites across the world:

1) Grids, lattices, expanding hexagonal patterns.
2) Sets of parallel lines.
3) Dots and short flecks.
4) Zigzag lines crossing the field of vision.
5) Nested catenary curves.
6) Filigrees or thin meandering lines.

He adds seven tricks of arrangement to widen the rock artist repertoire:

1) Replication.
2) Fragmentation.
3) Integration.
4) Superpositioning.

5) Juxtapositioning.
6) Reduplication.
7) Rotation.

All geometric patterns he found could be constructed by mixing these forms and rules of placement. He than went on to link them to altered states of consciousness, either naturally conceived during dreams, fits of migraine and epileptic attacks, or created artificially by psychoactive drugs during shamanistic rituals or sleep deprivation. Our ancestors, he concludes, created the first art out of a need to make external the chimera generated within their nervous systems experienced as seeing: rock art as the mental maps of the altered states of palaeolithic hippies. On the other hand, we have the Dream Machine (not to be confused with a type of digital alarm clock erroneously so named) that was developed by Brion Gysin in collaboration with Ian Sommerville and William Burroughs. This contraption was invented after the experience of a trance-like state induced by stroboscopic effects caused by tree branches repetitively shutting out the bright sun while driving through the south of France in a bus. The Dream Machine was a flicker device mounted on a turntable which they tried to mass market as 'TV from within', a drug-free hallucinogen. Classifications of forms witnessed during experiments with similar stroboscopic devices in academic settings came up with the same archaic forms found in rock art by Lewis-Williams. Reading backwards, the entoptic perspective solves the where-what-why of mystic visions as documented by Emanuel Swedenborg, Hildegard von Bingen, William Blake and the Desert Fathers, amongst others.

William Seward Burroughs, GW and murderer, never actually wrote a book in the traditional sense of the word. His biographers write about his word-heap, a pile of rat-eaten manuscripts carried along and accumulated in the long succession of rooms, houses and hotels on three different continents. From these sketches his friends and editors would select a new volume when a willing publisher could be found. All his early books are thin slices of the ham of possibility, frozen in time and print, their final organization into solid form directed by the taste and vision of the editor in charge, often gambling on luck in throwing together fragments to negotiate tight deadlines. Just as the professional gambler believes he knows how to throw the dice such that the outcome is not dependent on chance, Burroughs was always keen to mention that the cut-up was not a random process. In flurries of editing, energy flowed through the word-heap from oven to sink; in this gruesome cement mixer of permutations, chapters built up from sentences and paragraphs are hopeful mugwumps, most of them unstable. But some fragments bond into sustainable structures, and once they exist nothing can stop them from growing. The Greatest Crystalpunk Technology is the hot bath! It is there that the new is incubated at the cost of diminished effectiveness of short-term memory. With the plasticity of the mind more flexible and mindstuff wandering about like happy dogs running after every stick, thinking is geared in a different pitch and from who knows where it finds the weirdest things.

Endolinguistics

In which it is revealed why the writing is on the wall.

Language instruction is an agony to all parties involved: to the millions of teachers attempting in vain to explain the fine art of grammar and the proper ways of civilized language to unwilling crowds; to the billions of pupils struggling with the arcana of arbitrary rules that are supposed to represent language but which are so far removed from the language inside their heads. Language education is rote learning of nonsense rules, inability to master them coming at the risk of socio-economic exclusion. We are conditioned into a 'native language', a 'mother tongue', and each time a child sees her window of opportunity of language acquisition close, something dies inside her and is lost forever. We do not need a science of language: what we need is an eschatology of language. Barraged by this chaos, I cannot but conclude that what we call language does not exist, or rather, that official languages are only local traditions of approximating the observable exterior of a body of meaning that surrounds us. The linguist and the writer are like that Venetian monk pruning the vastness of rumoured marsupial form, drawing a kangaroo based on the recollections of a sailor's memory rotted by vitamin deficiency and claret abuse. What we call language is the crocodile tears of something else, it is a lichen on the rock of the great language we are missing while it looks us in the eyes and pounds

our eardrums. Language flows naturally from the inside to the outside, but society forces the flow of this current to move upward in the reverse direction of nature. Burroughs was right when he recognized that we are all abducted: "Language is a virus from outer space". The outside is colonizing the inside, language is our Diaspora and silence our Zion.

In this light, darts must be the most guerrilla-linguistic of all sports. The criteria for a perfect game is known: the Nine-Dart Finish. To be in the upper echelons of the game's hierarchy means being more reliable than others in your ability to produce series of throws nearer to the Pythagorean ideal of 9, which is not a prime, but still numerologically significant. In trivial matches and training, cooled with Guinness in your pub-cum-living room, hitting the treble 20s and double 18s just right, a perfect leg is relatively common. The art of darts consists in reproducing it when the stakes are high, resurrecting it amidst the inferno of the high-profile tournament: the Nine-Dart Finish must be televised. Suddenly darts stops being a game of hand-eye coordination mastery and becomes a Buddha game, a battle over who has the peace of mind to throw like it's only a pub game with the next round of drinks at stake. We are by nature prone to take risks when we are losing. The thing to do is never to wind yourself up but to unwind yourself to a pace where thought and worries disappear in a gnostic emptiness: the worst thing you can do, I heard Bobby George say on TV, is to try too hard. Despite their misconceived reputation as being greedy, fat and sweaty, the Masters of Darts are searching for the motor-muscular superiority over the Yantra of the board that will redeem us all. Raymond van Barneveld, the Dutch equivalent to William Butler Yeats, continues to explore Eastern traditions like acupuncture and yoga to progressively improve his skill in silencing his inner voices. Already a multiple world champion, he keeps getting better all the time and the best of his matches are artworks of inner silence, beer belly Zen mediations of the highest order. You need to have a truly excellent mind to learn to be deaf to the sirens of failure and shipwreck that emanate from the glaring red hole of the bull's-eye (or the Wanker's Fifty, as Original Sin is known in darts terminology). The perfect finish is a little mind, a demon that whispers defeat and must be exorcized by ignoring it.

For a while I worked at a distribution centre for bulk mail. From trolleys, we, the usual slackers dreaming of a career in music or acting, about to become famous but not quite there yet, had to sort the strip-tied bundles of mail onto one of twelve new trolleys as postal code dictated. The rules for stacking were clear, four bundles made up one layer, each new layer offset from the last to enhance stability. When there was a lot of uniformly shaped mail there was no problem, as the tessellation of bundles on the trolley was impossible to distort other than by deliberate malignant stacking. In case of non-uniform bundles, the creation of this collaborative bulkmail crystal became a different game altogether. From the way you undertake to answer the problems asked by Go, the master can read your personality like an open book. In like manner I saw the capabilities and bizarreries in the working of the minds of my co-workers unfold on a dozen trolleys. Sometimes I was ready to kill some dimwit with the personality of a spoiled dog unable to stack and sort like a Crystalpunk. Sometimes, while warehouse acoustics inhibited much talking, to work was to communicate in group-mind harmonics.

The invention of games of mental skill and symbolic processing indicated that the human condition had reached a new evolutionary threshold. Abstract games can be played from memory alone, but the invention of a physical memory to take away the burden of memorization made it considerably easier to focus on the future consequences of your next move: games are artificial landscapes of mind and matter, systems of abstractions that can refer to anything. This new tool, this Mental Lego, made possible the formation of mental states that were truly unreachable before. Each game is a symbolic language, playing is writing is thinking is feeling in its vernacular. Herman Hesse envisaged his glass bead game as a writing machine of a universal language that would leave nothing unsaid. The anti-Babylonian miracle of the Pentecost could be brought about if writers would stop writing and focus their talent on designing board games instead.

Languages are organisms, they are born and they die, they breed and they prosper, they attack and they are attacked, they rule the world and perish by it. They are like bacteria, they are like empires. They are like Thomas de Quincey, they are like Adolf Hitler. George Steiner, from whom I borrow the idea of language-as-biological-entity, wrote that the main function of language, its key evolutionary benefit, is to deceive, to mislead others as well as yourself. "It is only a flesh wound!" the Black Knight shouts with his leg cut off and blood

squirting wildly from it. This implies that the origin of language and the origin of love are the same history, and of course we already know this. It is in fact a cliché, a road to hell paved with dead poets: the inability of language as it exists to sufficiently communicate your love, to turn this love into an object that is equal if not superior to what it describes. Every time you fall in love it is in a different manner, each time it both kills and fertilizes another part of you, releasing some unprovoked combination of facets from your personality. Falling in love is the source for the symbolic watershed of the Deluge or the collapse of the Tower of Babel, that mythopoetic event from which all confusion originates. With Yeats we must believe in language as a Noah's Ark for the perpetual survival of forms as the world goes from destruction to destruction between small intervals of being in love. One time you fall in love with a llama, later with a centipede or a snake or a particularly strong strain of rabies, but always the conversation between you and the object of your love is based on nothing but a supposed content, of perfection and qualities imaginary. This is why 'marriage' is the greatest work of art made by all, except the resolutely single.

Psycholudology

On why a good game is more real than what is really real.

Chess and Go are legal drugs, cerebral poisons that offer a utopic world-of-squares as a psychic defence against the terrors of a larger and troubling world. The professional player is then able to live with the phlegmatic superiority of the addict who knows his supply will last forever. But it is a safety with a twist: your sanity in the world of your choosing is traded against the stigma of madness if not clinical insanity in the world you leave behind. Wilhelm Steinitz, the inventor of modern chess, ended in a psychiatric ward after he lost his world title, claiming he could summon God to play, giving Him a pawn advantage. But it is only fair to say that the looniest of chess players remains a picture of mental health compared with the barking mad interpretations of chess put forth by psychoanalysis: chess as a channelling of unconscious 'anal-sadistic' desires; the king as impotent dictator, sterilized into immobility; the queen as the dominating femme fatale straight from Sacher-Masoch; checkmating as sublimated murder of the father and the patriarch; all pieces a sexual perversion in disguise.

In the book of the enumerating classes, chess and Go are not games but mathematical problems. With the rules known and all relevant information available, each possible game can be generated in vitro and represented by a tree. Once this game tree is exhaustively populated, the player, ceasing to be a player and becoming a boardological blackguard, can find her way in the astronomical branching depths of this Yggdrasil to tabulate the best possible next move. The maddening "abysmal depths" of chess diagnosed by Vladimir Nabokov, who demonstratively published his chess problems alongside his poetry, is the vertigo caused by this permutational tree. The name of his protagonist rhymes with 'illusion' and 'losing':

> "Luzhin, preparing an attack for which it was first necessary to explore a maze of variations, where his every step aroused a perilous echo, began a long meditation: he needed, it seemed, to make one last prodigious effort and he would find the secret move leading to victory. Suddenly, something occurred outside his being, a scorching pain - and he let out a loud cry, shaking his hand stung by the flame of a match, which he had lit and forgotten to apply to his cigarette. The pain immediately passed, but in the fiery gap he had seen something unbearably awesome, the full horror of the abysmal depths of chess. He glanced at the chessboard and his brain wilted from hitherto unprecedented weariness. But the chessmen were pitiless, they held and absorbed him. There was horror in this, but in this also was the sole harmony, for what else exists in the world besides chess?"

The rule of thumb is that a brain can never be big enough to understand itself. And while the world may be less complex than a game of Go, the brain will need a game of altogether immenser proportions to do it justice. Neural net implementations, electric circuitry simulating in logic the chemical processes going on in the grey room, are only shallow cabbalistic carbon copies of the real deal and may very well be thought of as eccentric game boards. The winning player is the one who first enchants the connections in her network such that it flawlessly learns to distinguish between different inputs in the smallest number of trial-runs. In this game, to quote Marvin Minsky, the board would

rebuild itself towards higher overall logic from local guesses amidst the initial turbulence of random imperfection: "I don't think we ever debugged our machine completely, but that didn't matter. By having this crazy random design it was almost sure to work no matter how you built it."

The mind reduced to a game possesses the same unintentional intelligence that unleashes insanity in the chess player. It is no coincidence, then, that Walter Pitts, co-inventor with Warren McCulloch of the neural net, was the first modern victim of the abysmal depths of the brain. No longer willing to cope with the illogical nature of human interaction or even with the intricacies of real neurons, Pitts withdrew into hermetic seclusion, continuing his studies of ideal neurons when he was not experimenting with homemade drugs, before finally committing suicide. In the absence of reliable biographical information, it is impossible to discredit the likelihood that to Pitts there existed nothing in the world but neural nets. In the light of millennia of speculation by the philosophies and the Upanishads alike about what makes the thinker think, he might even be right.

The final one-bit flag deciding who has won or lost a game should never be allowed to be an end in itself, it is only a dubious measure of the creativity displayed. Language has no winners. It is in this sense that a competition is only a superficial shell to facilitate cooperation with an edge. In pursuit of mind-blowing patterns Marcel Duchamp resigned from fine art to become a full-time chess player, always taking risks in order to play a beautiful game. The joy of this non-retinal art, as he called it, is its sustainability: the same few limited base materials that can last a lifetime while the number of things that can be made with them are practically unlimited. You do need an equal player to get the best out of you, and the most obvious opponent of equal strength would be yourself. No one wants to lose, not even, maybe especially not, to anyone like yourself, but you have to lose in order to win, a paradoxical distribution of defeat and victory with the proportions of a universal dovetailer. I suppose that to certain players of wicked disposition, unable to stand losing, this schizophrenic way out of the deadlock must appeal. However, both Asian and Celtic folklore insist that this apparent win-win situation comes at great peril. What myths warn against is that attempting to play on the side of nature will inevitably disturb the natural order: human overview is of limited use in repairing the 'mistakes' in evolution; the cost of attempting regardless, is, once more, madness. The medieval Welsh story *The Magic Gaming Board* reasons along similar lines to Muslim theologians prohibiting chess because the lack of chance means that you arrogantly think you can outsmart fate:

> "Peredur came to the castle, and the castle gate was open. And when he reached the hall the door was open, and when he went inside he saw a gaming board in the hall, and either of the two sets of pieces was playing against the other, and the one to which he gave his help began to lose the game."

Like a joker luckily picked from a deck of cards, the beauty of a certain position in Go can suddenly captivate and overwhelm you. The patterns of a game get their meaning in the same way that music or drugs, or any other medium able to carnally invade the mind, manages to salvage significance: by muddling with the chemical soup of the brain, the mental states of the system it falls on are reconfigured. In a pataphysical future, a possible Crystalpunk project would be to write Go software that changes its style when you expose it to music, responding in particular ways to different genres: dubstep makes it play with the reticent evasiveness of the stoner, grime would result in a vicious confrontational style not seen since Maldoror. Meaning is in the 'mood': music creates moods by bewitching the neural chain reaction with a hormonal voodoo dance that helps determine what is now welcome but would otherwise be rejected or vice versa. But all music becomes boring when heard too often, it makes us hungry and what we are left with is the unfulfilled drive for novelty that motivates us to go somewhere new: adventure is metabolic.

Do we play the game or does the game play us? The occupation theme of Go is not limited to the occupation of space alone; the mind, too, is controlled and forced into certain shapes. The long history of games being forbidden or encouraged for educational, political, moral or religious reasons, or the Chinese Rip van Winkle myth of a Go player looking up from the game only to notice a hundred years had passed, are examples corroborating our informed guess that the idea of mind control originated with the invention of abstract games. To cheat is therefore a form of civil disobedience. Llasa-based Crystalpunk and professional Go player Tel Han (no one will want to play with him no

more) quips that:

> "I like to cheat so much. Not for the sake of winning though. I do it most of the time to alienate people from the game. They get so immersed in winning that you cheat and spoil but they never notice until you push it to the extreme."

The cheating move, in mature play, is rendered invisible by the same pattern-repairing mechanism that makes us read over typos. Each game, each conversation, is always a guessing game. The possibility of anticipation shapes the current position, repetition can be deceptively suggested to lull the opponent into a false sense of security. Lee Changho of Korea, one of the best Go players in the world, earned his nickname 'The Stone Buddha' by virtue of his superb powers of mental calculation. He cannot tie his own shoelaces, but out there in the stratosphere of boardological architecture he has the freedom to allow others to attack him and do whatever they feel they have to do. In the end, like all details of the world already contained in the meta-models of the mathematician, he has seen through you and your little schemes before you yourself did: in his own truly unspectacular way he had the upper hand all along. Only when you play against him do you know how strong he really is, one defeated opponent commented. But Rui Naiwei of China, famous for her furious style, brought Changho to his knees with hallmarked brazen unpredictability. By showing how Changho could be whitewashed, the entire card house of his style imploded, as if the geese found a way to get the upper hand against the fox and the entire ecological balance shifted in the process.

A twelve-year-old nephew of mine, a vivid player of all sorts of board games, while appreciating the complexity of Go, could only comment upon it after the first encounter as a 'strange game'. Which is to say that he lacked the concepts to relate it to something he knew. The simplicity of ancient games like Go or Mancala, which perhaps is even more Spartan, is the void abhorred by an over-designed world. While Go, as austere as the plethora of dimensions in non-Euclidean mathematics, has remained estranged from the world of appearances, its offshoots, as mapped by the comparative boardological tree of games, the evolution of its ludemes, have been watered down into the perverted metaphors of which chess is one of the oldest.

Just as medieval mapmakers assumed Jerusalem to be the navel of the world for reasons of faith alone, the minutiae of the shapes, rules and objectives of games reflect the beliefs of their makers. Games are mash-up cartographies of real and unreal worlds, the big kahuna of the wilful suspension of disbelief (Coleridge) that gives the gamer the status of Demiurge within allegory. A prime example of gamespace serving as an astral travel kit is Alea Evangelii (the Gospel Game), the rules of which were revealed to an unnamed Orkney Mystic by an angel. By imagination alone, the game became an interactive celestial omniverse, a studio that allowed you, the Christian Dubmeister, to remix the cosmological harmonies from inside out, while the different objectives of the two players in this game, hunting and escaping, reminded the human that the divine plays a different game from us.

If we are to trust Emanuel Swedenborg's firsthand account of their linguistic abilities, angels have always been the great crofters of language: "There is a single language for everyone in all of heaven. They all understand each other, no matter what community they come from, near or far. The language is not learned there - it is native to everyone. It actually flows from their affections and thoughts"; "There is a kind of harmony in angelic speech that defies description. The source of this harmony is this: the affections and thoughts that give rise to speech pour out and spread in accord with heaven's form"; "The wiser angels can tell from a single sentence what the dominant affection is like ... [they] know from conversation the whole state of another person". Angels can do what the most hardcore of CYCic knowledge management projects and advanced emotive text parsers fail to do: to tell the mood and mind of a person from a fragment of his speech. Given the right technology, which is surely in the hands of the divine, this angelic knowledge could be used to crystallize the writer from the writing. From his notebooks we could recreate Coleridge. By tweaking the settings (a little more bass, a little less treble) this celestial writing machine could produce a handful of different Coleridges. The version best living up to our expectations could be used to create new avant-Coleridges, and so forth. This approach would have the edge over cloning from DNA because it copies personhood directly as it happened to emerge in response to the circumstances of a life lived, albeit

without the memory, instead of growing it again from its amino-acidic recipe that can never result in the same person.

Games are a medium for the creation of novel situations, but when the old rules wear thin and all new constellations are a bore, the zodiac needs to be enriched with a few new wandering stars. Or maybe the game loses its appeal because those dullards that always manage to spoil every party with their presence have invested too much time in studying it, turning it into a sport, endorsing some games with sociological value and status, like chess, and rejecting others as childish, like draughts. With every new rule added or removed from a well-known traditional game we may have created an environment that is a hostile, alienating and random world to all players. "A new world is only a new mind" (William Carlos Williams); if we allow ourselves the time to become acquainted with this feral mind, little like us or large like the Americas, tiny habits will create contours for our eyes to focus on. Slowly we begin to see; what we see needs to be named; the mists can be turned into things, chunks can be separated from the pink noise that surrounds them. Language is the intelligence of the past and the harbinger of the complexities of the future. This game libre places us into the Adamite condition. Now that we have named and identified the first fragmentary patterns we can really start to think about this world: now we can ask it questions, now we can classify, now we can postulate. As they say in Go: if it has a name know it. Science begins, Coleridge wrote, with the child comparing shells and pebbles on the beach. Studying his self-playing Game of Life, John Conway found small enduring mobile patterns he decided to call Gliders. With this in hand he could ask himself if there could exist patterns that would periodically create Gliders. There is no way of telling whether such an object is or is not possible in theory, but he could give this hypothesized behaviour a name: the Glidergun. The only thing to do now was to go out and find one, and soon he would recognize a pattern that matched his concept. With the first facets of the behaviour of this mind named, great strides in detecting and classifying phenomena close to the surface were soon made, but as time passed the period between discoveries increased, colonizers had to choose either to continue their work in more solemn earnest or to give up. Automated searching of the world for well-defined behaviour provided some solace at first, but this, too, proved to have its practical limits; the detection of interesting novelty is not unambiguously explained to the automator in clear how-to lists. At this stage, dictionaries are compiled, flags are planted and memory loss starts to occur. This outline is only a template for a recurring phenomena we have encountered before in this Crystalpunk Ordinance Survey. New minds are opening up all the time, promising warm bubble baths of novelty that create in the adventurers exploring them the need for new language: these minds are poetic, the language created is the poetry. But this experience does not need to be processed in what is commonly understood as language: evolution is the poetic, the tree of life its poem; the newly founded metropolis is poetic, the psychogeographical drift its poem; Go is poetic, a game of Go a poem inside its bosom; the brain is poetic, the neural net its poem. The growth of a mind, a biography, can be poetic, the collected works of the poet, drafts and letters included, its poetry. It is Shelley, who believed the poet to be the unacknowledged legislator of the world, whom the Crystalpunk can now safely quote:

> "In the infancy of society every author is necessarily a poet, because language itself is poetry... Every language near to its source is itself the chaos of a cyclic poem: the copiousness of lexicography and the distinctions of grammar are the works of a later age, and are merely the catalogue and the form of creations of poetry."

It is only now that we can declare Crystalpunk, that we thought of as a movement for making things, as a poetic movement. The ingredients of the Crystalpunk game are becoming known with the viscosity of tar: the ability of the game to approximate past states, the power of the game to remember and to learn, its structure complex enough to be occasionally misled by its own nerves. Most games have memory governed into them by the rules instructing the players to limit the number of identical moves. The Ko-rule in Go prevents the same position from occurring on the board twice. In the Crystalpunk Game of the future, the past is not remembered directly, but can be reproduced from the positions of tokens on the board.

The Writing Machine

On how the Crystalpunk made an invisible creature between what was actually stated.

The ancients invented each animal in their mythical bestiaries in correspondence to the character of places that scared them, and the Muse is a beast that humanizes those one-track states of mind you can only get out of by patiently following their lead, like the needle on its way to the run-out groove. This speaking in tongues, this being bamboozled by an apparition of temporary inspired madness, is, as the cliché goes, the only thing the artist can hope for in reaching beyond the mediocre: the Muse is an angel when she is present and a demon when he stays away. In Robert Graves' historical grammar of poetic myth the muse is the White Goddess, the Mother of All Living whose embrace is death, the Dame Ocupacyon whom all true poets are always addressing "with single-minded devotion". Other true poets, Graves tells us, recognize her presence in a poem by a sudden bristling of hair and a leaping of the heart. Under the spell of the Muse the poet is charmed into frantic genius that is as close to timeless truths as one can ever hope to get. The Go Shiki, the oldest Japanese book on Go, documents a sighting of her by the monk Tichibana Kanren, the pattern of the event is by now becoming predictable: "[Kanren] once had the unforgettable experience of being asked to play by an attractive female ghost. What frightened him was not that she was a ghost but that her strength proved to be so formidable that she captured every one of his stones". Italo Calvino, after reading up on cybernetics, was the first to see that this madness cloaked in the divinity of the Muse is a mind-made machine, not a heaven-made Goddess. Coleridge is the iconic example of someone who was intoxicated by the Halcyon of the Muse Machine constantly enough to be able to afford the luxury of sharing its produce for free. In fact, he was overwhelmed by its exaltation to such an extent that he saw no option but to revert to plagiarizing the Germans for pages on end as the only way to complete his book. The Discursive Coleridge, in permanent oscillation between all possible ways things could be, never managed to find a balance that would order his literary output into digests that were both true and comprehensible. The two are mutually exclusive and the incomplete titbit, the misleading fragment, is what most writers settle for. It is Coleridge who not so much discovered the impossibility of complete writing, but showed it by being incomprehensibly wide-ranging; the vagaries of modern French philosophy are mere footnotes by comparison.

Kathleen Coburn, a cheerful canoeing outdoor Ontarionette who, by her accidental gift of being a 'colonial' and therefore outside English class prejudice, was the first to be allowed total access to the Coleridge Notebooks hidden from the world in an Ottery bookcase. She then ruined her eyes in a lifelong spell of deciphering and annotating sloppy handwriting to finally give the world the Crystalpunk Tractates: the first fully published edition of the notebooks that record with painful intimacy the emotional and intellectual life of Samuel Taylor Coleridge. About the physical appearance of the notebooks as they have survived she wrote:

> "They have been used from front to back and back to front, sometimes over many years - as much as twenty-three years between two entries on one page; some pages were written over twice, for two different purposes, ink written over pencil; pages were left blank or accidentally missed and later returned to; extraneous leaves were inserted within notebooks, in one case notebooks within a notebook; writing was done in every conceivable situation - desk, stage-coach, crouching for shelter from the rain under a mountain rock, on horseback, on shipboard, in bed. It was often difficult to tell where one entry ended and another began. Especially if they remained constant for a few pages, whether it was pen, pencil, crayon, or red-gout-medicine."

A convergent observation by Hakim Bey happened to enter Crystalpunk working memory around the same time:

> "A palimpsest is a manuscript that has been re-used by writing over the original writing, often at right angles to it, and sometimes more than once. Frequently it's impossible to say which layer was first inscribed; and in any case any 'development' (except in orthography) from layer to layer would be sheer accident. The connections between layers are not sequential in time but juxtapositional in space. Letters of layer B might blot out letters in layer A, or vice versa, or might leave blank areas with no markings at all, but one cannot say that layer A 'developed' into layer B (we're not even sure which came first).

> And yet the juxtapositions may not be purely 'random' or 'meaningless'. One possible connection might lie in the realm of surrealist bibliomancy, or 'synchronicities' (and as the oldtime Cabalists said, the blank spaces between letters may 'mean' more than the letters themselves). Even 'development' can provide a possible model for reading -- diachronicities can be hypothesized, a 'history' can be composed for the manuscript, layers can be dated as in archaeological digs."

Thomas De Quincey, thirdly, in a piece of prose worth quoting anyway (when the context is Crystalpunk, this quote fits) has also written about the palimpsest, pushing the concept towards brainiacal spheres:

> "What else than a natural and mighty palimpsest is the human brain? Such a palimpsest is my brain; such a palimpsest, oh reader! is yours. Everlasting layers of ideas, images, feelings, have fallen upon your brain softly as light. Each succession has seemed to bury all that went before. And yet, in reality, not one has been extinguished. And if, in the vellum palimpsest, lying amongst the other *diplomata* of human archives or libraries, there is any thing fantastic or which moves to laughter, as oftentimes there is in the grotesque collisions of those successive themes, having no natural connection, which by pure accident have consecutively occupied the roll, yet, in our own heaven-created palimpsest, the deep memorial palimpsest of the brain, there are not and cannot be such incoherencies."

The only problem one might have with a linear unfolding of palimpsestic texts like the Coleridge notebooks is that the organizational filter applied to unzip them turns the city of possible interpretations into a slum. A single right word was enough to make Coleridge burst into an irrepressible frenzied monologue; like a centrifuge of insights that never ran dry, his mind would spin metaphysical correlations and associations from the ordinary stuff of perception. As Hazlitt tells us, he even walked like he talked: Coleridge was so easily distracted that he could not walk in a straight line. But what miles of splendid excess did he tread! John Livingstone Lowes, author of the seminal Coleridgian anthem *The Road to Xanadu* (from which Coburn got her interest in the notebooks), devoured a library's worth of books Coleridge read or might have read, to piece together an account of the imaginative faculty at work in his subject. With old-fashioned meticulousness, so far removed from the Crystalpunk, Lowes quilted together his story that he claimed had found him like *Kubla Khan* had found Coleridge. Attempting to describe the trajectory from first idea to final otherworldliness, as others would describe the trajectory of marbles running down a quincunx board, he drew the lines between the words, passages and subjects in books, and their corresponding shadows in *The Ancient Mariner*. Step by step, from first conception to notebook entry to bad poetry to good poetry. But unlike the other steps, this final leap he could not account for, here the Muse Machine had untraceably stepped in to elevate to manna the drab of the average.

Our mind is a zipper perpetually joining the inside and outside world into one consistent strand. Through wear and tear the zipper will eventually fail, rendering the entire garment it formerly made functional useless in the process. And even when new, the slider can stick: the rows of teeth prevented from zipping properly by some intruder, a misalignment of the edges disrupting the flow, or a temporary incompatibility between the teeth caused by a production fault. But the opposite is also possible: some parts of the outside world resonate with the world inside you with such spontaneity that to zip them is like stroking velvet. Thing have fittings and some things happen to fit perfectly, as if they were designed for you especially. This is not some random fluke or accidental coincidence, but an act of the unintentional intelligence that explains why the above observations could become part of the stuff already in the Crystalpunk mind, leaving us with no other option than to build a system to memorize our writing with a built-in Muse Machine: a blog/blogject, a Content Management System with a Janus head. On the one hand it stores blog posts (with the crudest un-dotcom kind of functionality) but at the same time, when scarce finite memory is exhausted the blog becomes a blogject; instead of merely managing content, it frees space via a dreamatic process based on what supposedly happens during sleep. The brain employs an army of night-time memory cleaners that go out with their detergents and mops to interleave the threads of memory more efficiently, perhaps in the process recovering memories long isolated and unreachable from the neural silk route, half-formed

memories suddenly recalled and juxtaposed at random, experienced by us as dreams. As the folding of a magic carpet gives birth to a sun each time corners touch, this proactive self-organizing palimpsestic Muse Machine publishes its itinerary composed from the stuff it restructures. The system only deletes information stored at least twice, but in doing this, it unlearns the exact paths for the retrieval of older memories and this becomes more true as memories age. As a result of it trying to decrease the excess copies of remembered particles in its memories, memories that contain a lot of novelty can be interleaved less easily with others, and are therefore preserved better. Such was our first proposal for a writing machine, in the sense of writing as reading from a mind, in a way that is rule-driven and dependant on both internal state and external circumstance. It was not a novel project, nor done very well, or indeed very useful in the end. But in such strides does Crystalpunk move on to its middle game.

The Crystal Automaton

Where mythology is turned into a machine.

A good game is a teacher-in-residence. To play is to learn, but it doesn't feel that way, as kittens attacking a rolled-up sock will readily confirm. To play is to acquire a body of implicit knowledge; only when you find yourself using it do you realize the things memory has in store for you. If the game is good, school is never out. Memory, like madness, is always bigger than you think. To master a game is to know where you stand as a person in the bigger scheme of life. It is ironic, in an inevitable kind of way, that a movement for self-education must end up relating all of its creations to the world of games; after all, the Latin word for game, *ludus*, also denoted the institution we are trying to forsake: school.

The game of Reversi, like its clones Othello and Roll-it, is a copy war. With each move a new piece of information is added to the board in such a way that, as specified by the rules of alignment, it rewrites as much as possible of the existing mass of information (represented by coloured counters) into your colour. The player with the most counters wins. Crystalpunk Reversi would be played with a huge number of players at the start, most of them wiped from the board after a few rounds while the spatial patterns created by each type of token at each interval on the board encoded an idea or thought. Reversi happens to be a Mickey Mouse simplification of thought formation as it appears to us in self-observation. William James and Francis Galton asked their brains a simple question: Why do we never have the same thought twice? Galton's self-conducted experiments attempted to free his mind from direct or focused attempts of thinking; walking along Pall Mall he let his mind ponder for a while on objects encountered, 'feeling' how a permutational explosion of thoughts, sensations and associations petered out into diminishing numbers in the auditioning rooms of awareness. Consciousness, they concluded, must be a gushing of constantly replenished mindstuff, an Epicurean stream and not a direct mapping between key and value. More recently, Neural Darwinists like Gerard Edelman and William H. Calvin, enthusiastically read at the Crystalpunk Academy, understand the same process as the survival of the fittest thought. Consciousness as a copy war fought out among a Foreign Legion of possible thoughts half-formed, each hoping to claim the most of a limited space, fighting for death or glory, an army of Rambos struggling to be actively thought by the benevolent thinker in that moment.

Crystalpunk was in need of its own Drosophila, a simple but flexible and indestructible in-silico world to see what we can really do and what our thinking is really capable of. With the curtain closed and the light dimmed we spent a summer claustrocoding a chain reaction automaton that was to be our experimental jet-set and we its glitterati. Programming is just another form of writing, it "destroys an infinite number of fine possibilities, but at the same time it suggests a multitude of distant and totally unexpected thoughts" (Paul Valéry). Thoughts are formed in the mouth (and instead of specifying the inner workings of mind, we want to grow little mouths?) and while writing this automaton, the world it created ran away with its Crystalpunk makers, challenging the limits of our knowledge by firing a thousand unforeseen next possible steps. Patient observation of the characteristics of this world provoked endless rewrites to extend functionality, to see what would happen, but it soon appeared that software, like poetry, to quote Valéry again, "is never finished, only abandoned". The unwitting ability of this automaton to keep stimulating the fancy of the Crystalpunk is what has so far prevented us from abandoning it, as happened to so many other scripts before: the panda bear approach to survival.

Explanation of the automaton in detail is futile and boring, you will skip it, but an impressionistic account is possible: Imagine a rectangular grid on the screen. The Crystalpunk clicks on an empty cell and a red cube, a quarter the size of the cell that contains it, appears in the top-left corner. A right-click changes the function (and the colour) of the cube, a left-click changes the position of the cube one step further clockwise inside the cell. A cloud of cubes in direct vicinity are the first meta-structure arising in this automaton, they are named 'gargoyles'. This world has several functionally different kinds of cubes. There are the pacing cubes (green) that are activated first, moving one step forward, sharing the information about this movement with the nearby cubes they can find according to the gargantuan rules of interaction. The cubes thus activated go on doing the same thing, creating a chain reaction. Some cubes are output cubes, these are monitored for their position/state resulting in a sequence of states that can be translated by some arbitrary translation table (for instance into alphabetic characters) or processed elsewhere. In this way a gargoyle is a programmable host for chain reactions, a closed sphere, an input/output unit, the joseki of a little mind.

What about chain reaction formation as a game? Who can create the longest chain reaction from the same gargoyle? Who will open a community website for players to boast and compete? Initially this world was meant to answer one question: does there exist in this automaton a pattern in which a chain-reaction becomes infinite. Given the asymmetrical rules for recursive activation, this question is far from trivial and the Crystalpunk nursing this unresolved matter is advised to reserve a special corner for never-ending gargoyles in her CMS. To Quote Stephen J. Gould: "Once you build a complex machine, it can perform so many unanticipated tasks", and it was these unexpected capability bonuses that became the sequence of Klondikes that sustained the frontier mentality that has driven gargoyle development to its current vista.

A chain-reaction running with plenty of output settings in default translation mode is good at finding things. Finding is easy, searching is hard: in principle it should be possible to create a gargoyle that puts the string 'gargoyle' on the output-stack, in practice it is tremendously tedious to actually successfully search for such a configuration, even when the search is done by the automaton itself. This calls for a new appreciation of the serendipity of found objects: running into a pattern outputting "ffif5t" is not likely to be of direct consequence, but you have found it, and if it looks promising you can archive it in The Babylonian Library of Gargoyles or BLG. Given enough eyeballs all features are shallow, to paraphrase the hacker-credo, and ultimately all words in all known human language might have a gargoyle to produce them. Anyone care to do a website for people to send them in?

The relation between an input and an output under identical conditions is always reproducible, and each unique chain reaction (and the number of possible chain reactions made by one gargoyle can be big) can encode a unique string: organization determines memory capacity to a certain extent, independent of the size of the gargoyle. But what makes this chain reaction automaton the Ulysses of cognitive gaming is that thinking, and indeed life itself, is a chain reaction. Metabolic systems and neural nets are vast interconnected chains of (chemical) transformations all critically dependent on the event that comes before. But instead of hand-crafting patterns to make it do certain things, a gargoyle can be effectively evolved towards increasingly longer chain reactions using simple hill-climbing genetic algorithms straight from Wikipedia. Slowly a random gargoyle will be reshaped into a pattern that allows a longer chain reaction; in the process the pathways of the chain become richer as cubes are used more frequently in one reaction. A genetic algorithm that applies random drift of dislocation enlarges the scope of what the automaton can find during a simple run. But just as you need a lot of luck to find the highest mountain in the Alps if your sole instruction is GO UP, a hill-climber is powerful but by no means able to push the system to its maximum potential. This is best shown by watching separate but identical gargoyles evolve: a clear similarity in their development is hard to overlook, and this becomes increasingly obvious when the gargoyle becomes smaller and the variance between the patterns evolved decreases. Each gargoyle has an innate first chain; the larger this chain, the harder it becomes for the process to undo it in favour of better ones, and sometimes the solution is obviously a dead end. In spite of this, as a typical example of Valentino Braitenberg's downhill invention/uphill analysis, an evolved pattern can display such hard-to-grasp behaviour that its maker would be

regarded intelligent if organic. However, strange oversights usually betray the fact that aimless design through random drift was at work. Here is a thought evoked by watching the automaton evolve: evolution tends to be efficient overall, but messy in the corners. The Gargoyle automaton provides gargoylization not optimization: a chain reaction developing redundancy becomes unstoppable.

On a busy Saturday afternoon you try to hurry and by accident you push someone aside without even noticing. What this 'means' depends on the one being pushed: The Hulk thinks it's an act of violence, the granny forgives you, the bully knows it's an accident but smacks you in the face anyway, the pacifist thinks you an aggressor but remains meek. The actual response has nothing to do with you and depends entirely on the state of the other. It will only become your concern again when the other somehow makes it such.

Several gargoyles can independently evolve in parallel on the same field. But they can also be hooked up to allow the activation in one gargoyle to make a quantum leap to another. Marvels of endolinguistics can now blossom right there on your computer screen. The gargoyle on the giving end of this partnership never notices the sideways branching of its reaction, the receiving gargoyle is where the miracles are bound to happen. A gargoyle, we assume, will always try to make its chain reaction as long as possible, and this unexpected input (seen from inside the gargoyle it is a demon of the Bruno kind) begets meaning in accordance with the current state. If it enlarges the chain reaction, and the signal persists, the gargoyle will try to build on it; if it makes the chain reaction smaller it will try to block it out.

This Gargoyle Telegraph is reciprocated and gargoyles can now signal each other. Suppose that the signal coming from Gargoyle A creates a larger reaction in Gargoyle B that triggers the line back from B to A. Now the gargoyles have invented communication. Together they can now learn to make each other bigger. In mutual harmony they can create novel input for each other, to find out what both are capable of growing into: from this observed fact of our little world, the need for collaboration and parties in a bigger world is made a Crystalific fact.

But the Gargoyle World does not end here. Cubes can have other functions: they can make full cells empty and empty cells full; they can change the function of another cube and thus rewrite the nature of the chain reaction. These capabilities allow the gargoyle to evolve not only towards greater structural complexity, but also towards a greater functional spectrum. It can learn how to fabricate other gargoyles, including a gargoyle that is a copy of itself (a GargoyleGun). Or it can learn to manipulate other gargoyles for its own benefit, progressively becoming a vanilla conquistador of the gridworld it inhabits. The Crystalpunk Mantra, the Om of our Manifesto, is an urge to progressively make our world a bit larger, a bit more gargoyle, a bit more like nature herself. What this automaton has created is a little theatre, a Crystalpunk peepshow, where we see that although what is coiled and palimpsestic might seem wimpish and futile next to the unambiguous thrust of a virile protuberance, by accumulatively enhancing the self-referential nature of its organization, it can build up so much more strength, value and meaning.

Wildtype BacterioPoetics

In which it is stated why human language is like a dead bacteria.

Bacteria are to Crystalpunk what Jesus Christ is to Christmas. Bacteria are the language of life, the bacterial zoo a spectrum analysis of what life can achieve. The bacterial kingdom is the bacteriotron through which the accumulated Brownian Intelligence of evolution develops new registers. No bacteria is an island: they live in multi-species phalanxes, immersed in self-brewed XTC that is their habitat and their language. The bacterial colony or the biofilm, the yellow stuff on your dental work, is the Crystalpunk Da Vinci Code. The collective programs the bodies and behaviours of its individuals, rewrites their souls and codebases. By direct excitation bacteria are rebuilt, rules temporarily added or removed, to withstand any antibiotic attempt at bactericide. The number of individual *E. coli* contained in the faeces of one human in one day averages between 100 billion and 10 trillion; it is the Crystalpunk conviction that each of these bacteria is a piece of art more beautiful than the *Victory of Samothrace*, that your turds hosts more art than the collections of all the world's museums put together. These microbial Orlandos might be

artworks of evolution but they themselves are artists and inventors made from the finest gold threads of the life force. Great art is eternal, it is the colloquial wisdom upon which museums are founded, but a new bacteria is always a new beginning on ancient principles. Like Chinese is its own classic language, bacteria are their own ur-species, and therein lies their Crystalpunkian attraction: like nothing else the bacteria symbolizes the most heroic aspect of punk, self-education without self-knowledge. Like Kafka's Hunger Artist, the art of the bacteria is one of endurance at the borders of existence. Like K. each bacteria is an individual and an eternal ideogram, a "vivid shorthand picture of the operations of nature", to quote from Ernest Fenollosa's misguided essay on the Chinese written character that so spectacularly failed to grasp Chinese as it is, giving us the outlines of a Chinese as it could be and should be. In Chinese, the argument runs, unlike our own algebraic writing, the ideogram suggests meaning without making distinctions between thing and sign or word and action; language is alive, blossoming like a snow crystal between the words, speaking directly to the mind. In the west, still according to Fenollosa, words are pawns on the logician's checkerboard; only Chinese does justice to the fact that "thought deals with no bloodless concepts, but watches things move under its microscope". In the west we explain things by a sequential move away into abstraction, the Chinese explain things in accordance with what is known and similar by association, each new word an aggregate of what is already in everyone's mind. By remaining close to its source, Chinese has been able to remain poetic, and Pound, believing it a kind of biology, accordingly begins his *ABC of Reading* with Fenollosa's method. Multi-cellular life-forms are conservative unto their deepest roots exactly because of their size and complexity: the smallest environmental change can erase a highly developed species in the span of a generation. Nuclear war might reset evolution, but life itself would continue in the form of those entities at the bottom of the charts drawn up by man. What bacteria do best is to come up with novel (and often bewildering) solutions to the problems threatening their continued existence; they make the best of the worst situations, are driven to blend in with whatever nature has to offer, with an efficiency bordering on the lawlessness characteristic of special ops or the saturnalia of the black arts. With unsurpassed burn rate, bacteria realize the Paskian dream, developing entire new sensors to operate on cues from newly opened-up observable domains of the outside world; those that baffle us the most include remarkable creative extravaganzas such as awareness to electric and magnetic fields. Recognition can be an art, a thing belonging to the set of things Crystalpunk is here to make real.

Once you accept that meaning can be in the process and not in the result, many things fall into place. Once you agree with us that the defining quality of the little mind is its talent to find novel forms of itself, you might grasp that the little is a transient condition in relation to something bigger. Bacteriologists are wont to tell of many near-epic examples of the capability of bacteria to prosper in laboratory conditions designed to kill them; they can live from what the wind brings along. Bacteria are nothing on their own and science has managed to culture only a small percentage of all known species as identified by their DNA. Here is the poetic justice: the suspected programmability of the isolated bacteria, easily taught how to execute tasks in captivity, as if they were Malumas and Taketes on a game board, will lose this function when the Petri dish prison breaks. In the bacterial domain, agar is a bribe, contamination a feature not a bug. Coleridge, recognizing a miracle when he saw one, once looked down a microscope and saw the complete catalogue of (human) experience revealed in a single light, and with his words that bring this manifesto to a close, the Crystalpunk Synthesis is not fully sealed, our memory not exhaustively made public, the opening phase still not entirely over, but we have at least made some things and quantified what we can make in the near future. This Manifesto is us.

> "What a swarm of Thought & Feelings, endlessly minute fragments & as it were representations of all preceding & embryos of all future Thought lie compact in any one moment – So in a single drop of water the microscope discovers, what motions, what tumult, what wars, what pursuits, what stratagems, what a circle-dance of Death & Life, Death hunting Life & Life renewed and invigorated by Death – the whole seems here, in a many meaning cypher – What if our existence was but that moment!"

Credits:

A lot of things had to pass before this Second Crystalpunk Manifesto could supersede the first. Many people, many books, many events, many moods have added scraps to the heap of thoughts that this manifesto is attempting to sort into concise shareable packages. We have been in this universe longer than you can imagine, and the fact that the name we allow you to know us by is silly does not prevent it from being useful. If you knew where to look and had shared time and space with us, you would be able to pinpoint exactly the persons and places from which specific fragments originate, origins which now are hidden from view. This manifesto is a gloss, but it does not mention its sources, and it has attempted to draw past times into a never-ending present, personal experience into a state of the collective. This Crystalpunk Manifesto is a Commonplace pamphlet, homemade memory-wine fermented out of a stream of consciousness. Hopefully the alcohol percentage is of the right non-brain-killing kind. We would like to thank Nick Grindell for turning this manifesto into a kind of English that resembles human-readable Exo-English a lot more than it would have done without him. We thank Impakt (http://www.impakt.nl) for their support of Crystalpunk, enabling us to make our events, workshops and bonanzas bigger than we otherwise could have.

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