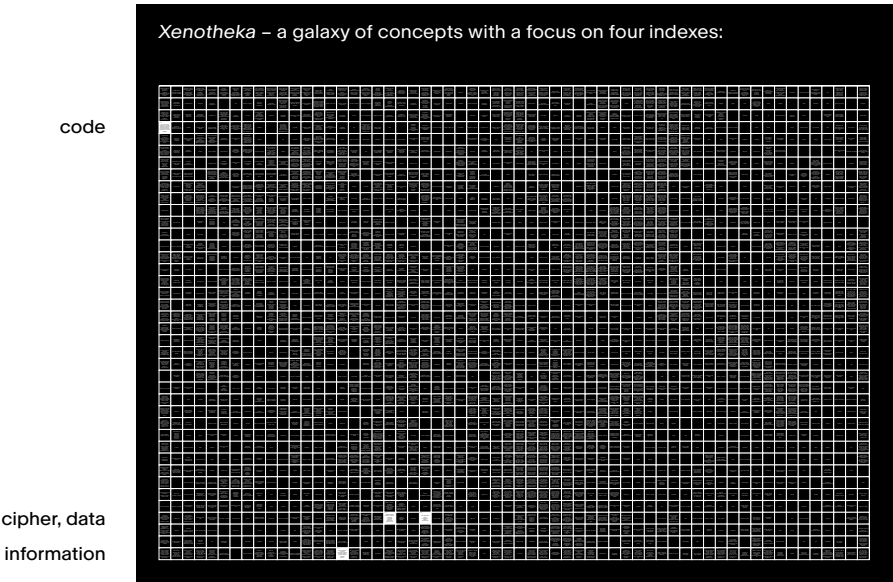


[illegible][illegible]

A GALAXY OF A PERSONAL MEMORY
WHICH WE NEVER HAD

The galaxy is looking at us; it reacts to our movements. *Atom-letters* are forming; concepts are in motion. The library is alive. We call this galaxy *Xenotheka*. What you can see here—but only when invited—is a galaxy of concepts of our personal and intimate library.¹○2.1 Of course, it is not a single library. We have many of them. *Xenotheka* helps us profile our different interests and moods. It is constantly growing and shrinking, transforming, and splitting. It moves together with our thinking. *Xenotheka* is our personal memory, which we never had. It is an intimate playground, where we play through and talk to concepts and learn with books. It is an unusual and challenging atmosphere. Here is one face of our *Xenotheka*.○4.8 ○2.1 At the beginning of this play, it contains 229 books articulated in 2,400 *atom-letters*.²

Books start to talk. What is the library telling us? What are we asking? Starting from a distance, we pose a question, sending an index of interests: *information*.



○2.1
Rendering_03_RW_4060_r_50it21d.

1 The galaxy: https://alice-ch3n81.net/files/data/xenotheka/_galaxy.pdf. The full list of concepts and indexes: https://alice-ch3n81.net/files/data/xenotheka/_Xenotheka_list_of_concepts.txt

2 The list of 229 books from *Xenotheka* is in the *Index of Xenotheka*, 378.

INFORMATION

Before the library reacts, in order to learn about the transformations of common notions of *information*, let us take a look at its etymological spectrum. Seen from the outside, objectively, etymology can be thought of as a history of a word, a time-travelling cultural condensation expressed in revolutions around a concept; a study of an ever-changing common sense; a memory of a word. In other words, an archaeology of a concept:

information (n.)

late 14c., *informacion*, “act of informing, communication of news,” from Old French *informacion*, *enformacion* “advice, instruction,” from Latin *informationem* (nominative *informatio*) “outline, concept, idea,” noun of action from past participle stem of *informare* “to train, instruct, educate; shape, give form to” (see *inform*). The restored Latin spelling is from 16c.

Meaning “knowledge communicated concerning a particular topic” is from mid-15c. The word was used in reference to television broadcast signals from 1937; to punch-card operating systems from 1944; to DNA from 1953. Information theory is from 1950; information technology is from 1958 (coined in “Harvard Business Review”); information revolution, to be brought about by advances in computing, is from 1966. Information overload is by 1967.³

Now, let us look at a different archaeology and different sediments: an intimate exploration of many commons or, to put it in different terms, a pre-specific unfolding of a concept,⁴ an adventure into a space between concepts, a space of a possible idea. This space cannot be explicated, but it can be approached, as one approaches a cloud, by bringing its indexes, concepts, and their different notions into relation with each other. It is an ongoing process. This is a new setting and an atmosphere for an old conversation on *information*.

As the library reacts, the galaxy emerges, concepts start to talk. *Xenotheka* is a collection and a persona, and so are its characters. We can communicate with *Xenotheka* on many levels in parallel; with the library, books, concepts, and indexes. They are subjects and objects. Depending on how we look at and encode the galaxy, it will shine in a different way. Its elements are related: a library with a book, and a book with an index, and an index with a library. They all respond, each in its own way, while referring to the other. Now they are reacting to my question. The library is sending a text back with information containing an indexical cloud and a numerical vector of a concept that contains the index in question: *information*. ○2.2 ■2.1

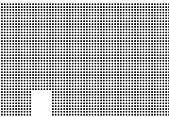
3 “Information | Origin and Meaning of Information by Online Etymology Dictionary,” accessed August 19, 2018, <https://www.etymonline.com/word/information>.

4 For more on pre-specific, see Bühlmann and Wiedmer, *Pre-Specifics*.

n1872629 nihilism, schematize, schizophrenia, nietzschean, masochistic sartrre, contraption, contractual, mai, metasta...	n187362 bergson, occlude	n187461 indetermination	n187564 hijack, deleuze, actualize, immanence	n187664 possibility, factual, speculation, maker, invert, exotic, eternally, exchange, sparse, inversion, option, sidestep, redundant, actual...	n1877622 unfold, maturity, materialize, dynamic, underlie, frivolity, implementation, passivity, cohesion, redistribute, differenti...	n1878626 literally, unpredictable, definitely, surface, tour, materiality, partition, jump, facet, inexorably, mesh, advent...
n193261 familial	n193362 duration, causa		n193962 misinterpretation, reactivate	n193961 transmitter	n193766 thread, hedge, algorithm, looseness, differentially, silo	n193969 crash, switch, unsettle, mathematically, does, skew, shutt, negotiable, palimpsest
n199261 subjugate	n199363 legislate, fissure, detective	n199462 erratic, dramatize	n199562 infinitesimal, saturation	n199666 immerse, imprint, stitch, reawaken, prism, interstice	n199761 endpoint	n199862 improbable, passerby
n205261 intensity	n205363 serial, finality, drift	n205461 disequilibrium	n205561 saturate	n205667 equilibrium, box, knot, fluctuate, dive, passageway, makeup	n205762 summation, euclidian	
n211261 extract	n211362 recreate, instantaneous	n211469 conversely, fusion, poorly, underneath, erase, archaic, expel, ceaselessly, schemas	n2115614 unstable, chaotic, fragile, resistant, turbulent, vibrate, hesitant, apex, voluminous, dismember, commemor...	n2116663 mixture, hardness, skin, softness, circumstantial, shimmer, whirlpool, addict, heady, narcotic, country...	n211766 confluence, virginal, monotheism, harlequin	n211862 scenography, bifurcate
n217263 constitute, relation, distribute	n217365 double, infinitely, indefinite, homogeneous, intersect	n217462 invent, dense	n2175611 expanse, recount, inaugural, nullify, inert, ravage, hazy, torpor, reborn, tribunal, turbulence	n217664 ariadne, zeus, inextinguishable, downstream	n2177617 millennia, alloy, socrates, surveyor, crescent, agora, redress, pythagorean, nille, archaism, geometer, unpredicta...	n2178619 pyramid, algorithmic, formidably, herodotus, concordance, indeterminism, federate, percolate, polytheism, ion...
n223261 pole	n2233617 direction, retain, line, converge, correspond, rotation, parallel, circular, geometrical, spiral, successively, respectiv...	n223467 triple, observation, curve, multiplication, solar, vibration, deflect	n223561 tissue	n223662 astronomy, prosthesis	n223766 geometry, diagonal, euclid, hilbert	
n229261 relative	n229369 extraction, couplings, neutrino, detector, photon, electrodynamics, muon, stopwatch, photomultiplier	n229465 experiment, equation, atom, experimentally, electron	n229568 transmit, mechanic, discrete, channel, approximate, linear, transmission, tube	n229665 filter, message, valve, tidal, hormone		n229861 invariant
n235264 mechanism, organism, mutation, propagation	n2353667 capacity, chemistry, collide, behavior, chemical, net, interact, interaction, genetic, agent, evolutionary, cheat, recurr...	n2354613 collision, rigidly, dissipate, optimal, sensory, optimum, parameter, input, fingerprint, ion, clockwork, overshoot, proton	n2355623 circuit, random, experimental, approximation, maximum, integral, energy, signal, efficiency, gas, tape, opera...	n2356631 obtain, negligible, accuracy, information, sample, compute, demon, receiver, radiation, reversible, irreversible...	n2357649 spectrum, maxwell, fluctuation, thermodynamics, wiener, coefficient, conduction, cos, cybernetics, reliability, volt...	n235863 meteorologist, ontogenetic, meteorology



○2.2
Xenotheka – galaxy zoom to the cloud of the indexes surrounding the index of *information*, rendering_03_RW_4060_r_50it21d.



Atom-letter n2356 e31 and its indexes:

n2356 e31 {obtain, negligible, accuracy, **information**, sample, compute, demon, receiver, radiation, reversible, irreversible, harmonic, rectify, complexion, filament, viscous, sci, physiologist, asymptotic, piston, fig, decimal, parity, neumann, codings, mag, homeostasis, simpson, connector, cathode, hillel}

While observing the galaxy and specific *atom-letters*, emphasis will be placed on the indexical parts of the letter, but let us bear in mind that the numerical part is always present and operational:

0.0, 7.706139246E-4, 2.568714955E-4, 0.00480554420246, 5.137426194991E-4, 0.00256304905, 0.0, 0.0066784348831, 0.0048055024146... (one dimension for each book)

To grasp the atmosphere of what this concept might be about, we have to observe the cloud around it and slowly feel the ambience. 0.2 Here is a stroll through the cloud:⁵

n2357 e49 {**spectrum**, **maxwell**, **fluctuation**, thermodynamics, **wiener**, coefficient, conduction, cos, cybernetics, reliability, **voltage**, **amplifier**, incoming, kelvin, **logarithm**, kinetic, digit, pulse, receptor, planck, rudder, carnot, thermostat, condenser, **entropy**, photoelectric, synapse, thermal, fourier, **wavelength**, oscillator, ref, instituto, **boltzmann**, gibbs, quantized, shannon, **transducer**, rectifier, gabor, effector, autocorrelation, **negentropy**, phys, emf, **resonator**, ergodic, eqs, rosenblueth}
n2296 e5 {**filter**, **message**, valve, tidal, hormone}
n2355 e21 {**circuit**, random, experimental, approximation, maximum, integral, **energy**, **signal**, efficiency, gas, tape, operator, electrical, absorption, microscope, output, reflex, lattice, **computation**, molecule, **amplitude**}
n2295 e8 {transmit, mechanic, discrete, **channel**, approximate, linear, transmission, tube}
n2294 e5 {experiment, **equation**, **atom**, experimentally, **electron**}
n2354 e13 {collision, rigidly, dissipate, optimal, sensory, optimum, **parameter**, input, fingerprint, ion, clockwork, overshoot, proton}
n2358 e3 {meteorologist, ontogenetic, **meteorology**}

■ 2.1

Cloud of indexes around *information*.

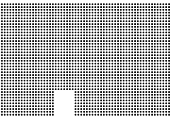
5 0.2.2 and ■ 2.1 present the same notion of a concept. It is a cloud of indexes around a concept. These are just two different renderings. The list is a full explication of indexes in 0.2.2. List of concepts and indexes: https://alice-ch3n81.net/files/data/xenotheka/_Xenotheka_list_of_concepts.txt.

r188a3	r188a2	r188a2	r188a3a	r188a18	r188a1	r188a25
invisibly, reorient, lifespan	philosophy, epistemology	socratics, agnosticism	bundle, inanimate, caricature, rift, pejorative, socratic, hammer, gabriel, underate, anthropocentric, scientism, artw...	orient, apple, unclear, james, allure, caveat, fatness, obsolescence, unconvincing, unstated	etymologically	treatise, illiterate, keystone, authorization, ptolemy, readership, confusingly, watermark, geneva, iconoclas...
r194a8	r194a4	r194a18	r194a27	r194a1	r194a1	r194a6
temporality, symmetrically, anthropology, monism, boyle, shapin, postmoderns, premoderns	disagreement, disagree, chemist, indices	entity, causal, ontology, essentialism, billiard, clarke, realist, debut, reductionism, zebra, eidos, attract...	realism, continental, relational, cryptic, latour, intentionality, whitehead, interchangeably, unortho...	poignantly	humanistic	manual, detriment, standardize, standardization, synopsis, pietro
r208a4		r208a4		r208a3	r208a21	r208a1
actively, stake, immaterial, quasi		euler, rightness, uranium, invariants		retrieve, quirk, retrieval	famously, pristine, notation, identically, trademark, authorship, postindustrial, cola, absentia, C...	geometrically
r208a9	r208a7		r208a3	r208a38	r208a9	
eradicate, formality, substantiate, modelled, gratuitous, disturbingly	purport, mentality, stasis, commensurate, exhaustively, transcription, realising		additive, alphabetical, numeric	laboriously, font, printer, digital, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, ...	emulate, software, snapshot, unwieldy, dentist, interactivity	
r212a19	r212a13	r212a1	r212a1	r212a7	r212a4	r212a1
michel, priceless, panoramic, eradication, occident, conciliate, archetypical, architectonic, uncounta...	iteration, sophistication, neutrality, categorically, erwin, arguably, secretive, eiffel, disrespect...	crucially	portend	laser, prioritize, proprietary, chris, byte, optimization, xerox	scan, keyboard, processor, desktop	beta
r218a34	r218a3	r218a1	r218a8	r218a2	r218a23	r218a2
finesse, anarchic, solstice, invariance, massively, generalise, vicarious, generational, ptolemaic, min...	inverse, quantifiable, galactic	darwinian	data regardless, cellular, inspirational, galileo, coincidentally	laptop, analog	computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, ...	pariance, calculator
r224a1	r224a3	r224a1	r224a3a	r224a1	r224a3	r224a8
biochemistry	physic, measurable, biosphere	pulsate	size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, gro...	ceos	messy, randomly, incremental	detection, lethal, prologue, eponymous, inordinate, charlatan, greco, lingua
r238a1	r238a3	r238a8	r238a15	r238a4	r238a22	r238a2
sapiens	quantify, physicist, commonality	pitfall, conceivably, amusingly, viscosity, rainfall, interrelationship	huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, eleph...	sophisticate, dot, gauge, burner	predict, underestimate, arrogance, winner, practitioner, deviation, uncertainty, tunnel, ingrain, outland...	discoverer, subgroup
r238a9	r238a1	r238a93	r238a3	r238a47	r238a43	r238a13
biology, span, quantitative, naively, mechanistic, approximately, whale, mortality, metabolism, genome, kilometer, ecosystems...	biologist, idealize, straightforwardly, trillion, physicality, reset, predictably, fission, bacterium, mammoth, faucet, cal...	cell, reminiscent, marvelous, prelude, trig, symbol, activate, oversimplification, cube, composer, logician, C...	myriad, provocative, prime, reliably, swirl, pinpoint, murky, brain, elusive, microscopic, amazingly, untold, analogue, ch...	concoct, effortlessly, nutshell, flip, russell, hopefully, berry, can, redness, quibble, microphone, setup, C...	patently, skeptical, skepticism, sensational, demoralize, massage, fallacy, diatribe, overestimate, explains...	cancer, odds, gamble, roulette, gauss, galilei, disc, relativity, embankment, gravitational, lorentz, ...



02.3

Xenotheka – galaxy zoom to the cloud of indexes surrounding the index of *data*, rendering_03_RW_4060_r_50it21d.



Unlike the etymological spectral meaning of *information*, which expresses an explicit and established articulation of common grounds, here is a spectrum specific to this library and its books. It is more of a particular notion of information than its precise meaning or etymology. Or better still, it is one of the characters of *information*, one of its moods specific to this context. It is a highly technical and quite abstract notion of information. It is *information* in the age of *electricity*, *thermodynamics*, *cybernetics*, and *entropy* surrounded by *Maxwell*, *Boltzmann*, *Planck*, *Shannon*, *Fourier*, *Carnot*, *Wiener*, *Neumann*, with flavours of *meteorology*, *communication*, and *atomism*.^{○2.2 ■2.1} This is just one face of *information* that this library can offer. It is just the start. To open up this concept further, to give it more faces and nuances, we are asking a new question: Is there a similar concept to *information*, but in a different context, surrounded by another cloud? This question creates a symmetry for expanding the discussion: a double articulation.⁶ By changing the axis of symmetry, we find ourselves in a different atmosphere surrounded by other concepts telling a different story, while at the same time preserving an invariance among the different expressions of the library. Both are of interest—variance and invariance. One way to set up this relation is by searching for synonyms:

```
{information, Noun, InformationMeasure} → {entropy,
selective information},
{information, Noun, Knowledge} → {},
{information, Noun, Content} → {info},
{information, Noun, Accusation} → {},
{information, Noun, Assemblage} → {data}}7
```

DATA

The search continues. In our setting (*information*), *entropy* and *data* may be treated as synonyms of *information*. Since *entropy* is already contained in the *Concept n2357*, in the same context as *information*, it doesn't open any new ways for interpretation.^{○2.2 ■2.1} The discussion is directed towards the other synonym. The index of *data* is not in the same cloud, but it is not too far away either.^{○2.1} *Data* opens up another atmosphere and brings new indexes.^{○2.3} Clouds start to mix. A double articulation of a famous couple: *information* and *data*. How does *data* differ from *information* and what is invariant to both? To open this relation, our focus turns to the index of *data* and its surrounding cloud:

⁶ Symmetry refers here to an agreement in dimensions, to a relation of parts and proportions that remain unchanged under transformations: symmetry as invariance rather than only a notion of a mirror image. See, "Symmetry| Origin and Meaning of Symmetry by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/symmetry>, and "Symmetry (Physics)," *Wikipedia*, July 29, 2018, [https://en.wikipedia.org/wiki/Symmetry_\(physics\)](https://en.wikipedia.org/wiki/Symmetry_(physics)).

⁷ Synonyms provided by Wolfram Mathematica.

Atom-letter n2183 encapsulating the index of data:

n2183 e6 {data, regardless, cellular, inspirational, galileo, coincidentally}

With its neighbouring concepts and their indexes:

n2243 e30 {size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, growth, typically, patent, minimize, terminal, mouse, encapsulate, dinosaur, prestigious, graphically, brian, sequentially, unabated, attractiveness, pornography, kyoto, richter, steamship, predictive}

n2184 e2 {laptop, analog}

n2244 e1 {ceos}

n2123 e1 {portend}

n2242 e1 {pulsate}

n2124 e7 {laser, prioritize, proprietary, chris, byte, optimization, xerox}

n2303 e15 {huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, elephant, quintessentially, elixir, infinitesimally, helium}

n2185 e23 {computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, moo, conversational, ibm, audio, graphical, pixel, fax, bandwidth, hdtv, bps}

n2064 n38 {laboriously, font, printer, digital, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, cam, cad, planar, che, digitally, plotter, disclaimer, participatory, benedetto, robotic, wikipedia, perspectival, cache, camillo, bartlett, pictura, bim, wolfram, customization, notate, carpo, spline, gmail, casteljau}

n2125 e4 {scan, keyboard, processor, desktop}

n2063 e3 {additive, alphabetical, numeric}

n2362 e93 {cell, reminiscent, marvelous, prelude, trig, symbol, activate, oversimplification, cube, composer, logician, crux, encode, virus, genetics, sentient, multidimensional, hardware, tangle, morgan, program, hypothesize, tantalize, helix, pathway, football, ism, droll, replay, acid, procedural, tightness, groove, arithmetical, slot, retina, tricky, hike, canon, numeral, chess, string, ornate, shunt, boggle, trio, checkmate, inviolate, checker, computable, hoe, acronym, dualistic, propositional, parse, strand, cortex, dostoevsky, backfire, theorem, activation, declarative, parry, recursively, quantifier, sonata, triplet, turing, tonic, hiccup, chunk, neutron, carroll, subjunctive, neuron, lisp, goldberg, phonograph, holism, recursion, announcer, backtrack, isomorphism, recursive, buddha, genotype, typographical, nucleotide, magritte, rna, bach, fugue, escher}

■ 2.2

Cloud of indexes around data.

There are subtle and refined differences between *data* and *information*. *Data* brings expected indexes in unexpected constellations: ■ 2.2 systematically, brilliantly, graphically, sequentially; morse, rhino, Google, cam, cad; IBM, audio, graphical, pixel, fax, bandwidth, HDTV, encode, symbol... —There are a lot of indexes referring to applications, infrastructure, and interfaces. Here is a

speculation: the character of *information* is more entropic, while *data* is more generic. *Information* is more abstract and fluctuating, *data* more grounded and encapsulating. *Information* emphasises thinking around itself, while *data* emphasises applications. Let us keep in mind that this is an interpretation of the response of a specific library encoded in a particular way. *Xenotheka* is my character. Another library would provide a different relationship between *information* and *data* and could be dramatised in another way. If we look at the etymology again, this time it complements the indexical story. *Data*⁸ is plural for Latin 'datum' which means 'thing given', but it also refers to a point in time: *datum* as a date. *Data* thus gets a time and space stamp:

*The Roman convention of closing every article of correspondence by writing "given" and the day and month—meaning perhaps "given to messenger"—led to data becoming a term for "the time (and place) stated." (A Roman letter would include something along the lines of datum Romae pridie Kalendas Maias—"given at Rome on the last day of April.")*⁹

CODE

Information and *data* together articulate a mixture, a compelling symmetry, but this is not enough. We would like to have yet another unfolding and more faces to *information*. In the two clouds around *information* and *data*, there was one index which we find particularly interesting. It is an index in *Concept n2362*,^{2.2} the verb *to encode*. If the prefix *en-* is removed, what we are left with is *code*, which, as a verb, is an activity that can activate our two indexes, two objects, two nouns: *information* and *data*. They can be coded in many ways. Let us see where this vector will take the conversation. It might open another interesting genealogy. *Code* is in a different cloud. In this library, it finds itself quite distant from both *information* and *data*, in another part of the galaxy.^{0.2.1} It should therefore add a new atmosphere to the story. Here is the concept indexed by *code* and its context.^{0.2.4}^{2.3}

```
n181 e24 {neo, continuously, exploration, novelty,
attendant, prevalent, designer, aesthetic, code,
preconception, openness, retrospect, protagonist, vagueness,
unquestioned, client, crystallization, evaluation, orthogonal,
bernini, mutate, manmade, magnum, budgetary}
n182 e5 {classicism, modernist, rococo, perrault,
typological}
n121 e28 {discipline, style, manifesto, trope,
unresolved, manoeuvre, exemplar, stylistic, cohere,
creatively, fruitfulness, browse, codification, dissemination,
referential, exclusivity, specious, reconnect,
[...]
```

⁸ "Data|Origin and Meaning of Data by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/data>.

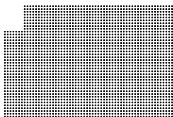
⁹ "Date|Origin and Meaning of Date by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/date>.



n1a103	n2a6	n3a9	n4a12	n5a7	n6a8	n7a100
design, theoretical, orientation, elaboration, complexity, comprehensive, align, architectural, funcio...	update, overall, innovative, typology, systemic, versatility	elaborate, research, enhance, consultant, innovate, interpenetration, institutionalize, comprehensiveness, recombine	paradigm, multi, pervasive, selective, strategically, availability, innovation, interconnection, centrality, so...	micro, reintegrate, developmental, uncontested, organizational, exploratory, retool	innovator, interdependent, fertilization, pervasiveness, outsource, supplier, profitability, synergy	economy, firm, corporation, globally, technological network, skilled, japanese, backbone, linkage, teamw...
n81a24	n82a3	n83a1	n84a1	n85a2		n87a1
elemental, raison, incommensurable, irritation, seminal, unprincipled, embeddedness, concretize, stillb...	architecture, programmatic, compositional	postmodernism	ascription	autonomy, reintegration		dell
n121a28	n122a5	n123a3	n124a4	n125a2	n126a24	n127a2
discipline, style, manifesto, trope, unresolved manoeuvre, exemplar, stylistic, cohere, creatively, fruitfulness, bro...	functionalism, curated, villette, formalists, axonometric	functionalist, disciplinary, eclecticism	modernism, expansiveness, architettura, soane	corbusier, vers	historicism, weld, riba, palladian, castigate, leitmottif, burckhardt, archigram, corbusian, mannerism, disenchantm...	reviewer, neoclassical
n181a24	n182a5	n183a1	n184a3	n185a4	n186a9	n187a9
neo, continuously, exploration, novelty, attendant, prevalent, designer, aesthetic, code, preconception, openness, retrospect, protagon...	classicism, modernist, rococo, perrault, typological	formalist	collage, hannes, dessau	sigfried, berlage, architektur, bauen	collin, reynier, gardes, manfredo, emil, rowe, mannerist, vidler, tafuri	autre, arcadia, townscape, smithsons, elia, stirring, ronchamp, nikolaus, pevsner
n241a55	n242a3	n243a4	n244a25	n245a41	n246a3	n247a4
contemporary, distinction, function, decision, ambition, formal, initially, unify, environment, latent, insiste...	formalism, renaissance, configure	exhibition, moderne, inconspicuous, fuelled	constructivist, transparency, prehistory, mondrian, welmar, expressionism, geodesic, bauhaus, neue, constructiv...	mies, picasso, adolf, savoye, painterly, expressionist, gropius, freestanding, apollinaire, konrad, fernand, al...	disenchant, greenberg, rieg	wren, aia, evelyn, cedric
n381a35	n382a3	n383a2	n384a1	n385a2	n386a1	n387a5
task, operate, imply, solution, mature, articulate, theoretically, arena, polemic, connotation, sketch, sensitivity, tighten, haphaz...	construction, achievement, consonance	engineer, appreciation	skeletal	garnier, dadaist	postmodernists	historian, michelangelo, eclectic, surfeit, reassess
n381a51	n382a5	n383a4		n385a2	n386a3	n387a3
potential, system, type, primary, explicit, motivate, frame, solve, constraint, explicitly, integrate, pres...	contribution, select, loosely, theory, stringent	structural, reference, appropriately, hoc		monograph, italia	anthology, interdisciplinary, panofsky	academic, paolo, klein
n421a11	n422a5	n423a6		n425a13	n426a26	n427a7
project, reconstruct, composition, depict, conceptually, envision, densely, reformulate, topography, aggregat...	feasible, relevant, placement, perceptual, dover	embed, generalize, label, stimulation, applicability, wiley		thesis, indentation, abbreviation, noam, typewrite, advisor, croce, bibliography, subsection, vallet, tesau, bibliographi...	student, documentation, underline, topic, index, parenthesis, card, citation, pseudonym, graduat...	title, author, scholarly, quote, ideally, file, subdivision
n481a15	n482a1	n483a12	n484a28			n487a4
reconstruction, reinvent, monumental, anonymity, vastness, punctuate, depiction, cornell, gridded, reinvention, volumetric, tab...	idiosyncratic	component, feature, tentatively, terminological, illustrative, principled, feasibility, reorder, syntax, eras...	specify, entry, tentatively, inadequacy, john, restrictive, dummy, abbreviate, bracket, deviant, detectable, inapplic...			revise, insert, cite, unpublished

02.4

Xenotheka – galaxy zoom to the cloud of indexes surrounding the index of code, rendering_03_RW_4060_f_50it21d.



```
[...]
comprehensibility, brainstorm, corb, irreversibly,
assertiveness, jeff, irreversibility, tschumi, semper,
brett}
n241 e55 {contemporary, distinction, function, decision,
ambition, formal, initially, unify, environment, latent,
insistence, authoritative, domain, evolve, collaborate,
prominence, relevance, gear, premise, cope, facilitate,
inception, assessment, steer, christopher, condense,
adaptation, coordination, culmination, preconceive,
specialize, retrospectively, oeuvre, variegate, conceptual,
geometric, noteworthy, foundational, rationalize, momentous,
inherently, reinterpretation, curriculum, departmental,
medium, nexus, diagram, hallmark, rationalization, faceted,
guideline, adrian, gestation, robustness, masterplan}
n242 e3 {formalism, renaissance, configure}
n122 e5 {functionalism, curated, villette, formalists,
axonomic}
n61 e24 {elemental, raison, incommensurable, irritation,
seminal, unprincipled, embeddedness, concretize, stillborn,
fruitfully, responsiveness, avant, asymmetric, attractor,
kipnis, incommensurability, kuhn, autonomization,
dysfunctional, wigley, evaluative, goffman, refoundation,
lakatos}
n62 e3 {architecture, programmatic, compositional}
n63 e1 {postmodernism}
n302 e3 {construction, achievement, consonance}
n2 e6 {update, overall, innovative, typology, systemic,
versatility}
n301 e35 {task, operate, imply, solution, mature,
articulate, theoretically, arena, polemic, connotation,
sketch, sensitivity, tighten, haphazard, touchstone,
prospective, adherence, avoidance, rehearse, modulation,
transformative, unfailing, cater, ensemble, virtuoso,
derogatory, disorient, unadorned, inauguration, epilogue,
climatic, furnishings, veracity, leon, traction}
n123 e3 {functionalist, disciplinary, eclecticism}
n183 e1 {formalist}
n303 e2 {engineer, appreciation}
```

■ 2.3 Indexes around code.

With its distance to information and data, code offers a completely different context. What first stands out when we look at the cloud around code are the stylistic periods, though here it would be more interesting to call them different architectural codings: *classicism*, *modernist*, *rococo*, *formalism*, *Renaissance*, *functionalism*, *postmodernism*, *eclecticism*. Furthermore, they are surrounded by other architecture related indexes: *designer*, *aesthetic*, *typological*, *stylistic*, *masterplan*, *engineer*. This shows a beautiful and interesting connection between information and architecture through coding. In this context, architectural encodings do not have fixed forms; they can become code dependent.

Coding in *Xenotheka* becomes part of an architectural articulation, embedded into styles, epochs, houses, cities, books. In the play of synonyms, *information* and *data* acquire an unexpected atmosphere in their cloud. The concept is unfolding. *Xenotheka* is showing its character. For now, there are three concepts trying to articulate the same idea, which is not explicitly present. These are *information*, *data*, and *code*. In order to have two double

articulations—a symmetry of two nouns and two verbs—one more index is needed, preferably a verb. Again, the same technique is employed: a search for synonyms. This time synonyms of *code*:

```
{code, Noun, CodingSystem} → {}
{code, Noun, ComputerCode} → {computer code}
{code, Noun, WrittenLanguage} → {codification}
{code, Verb, Encode} → {cipher, cypher, encipher,
encrypt, inscribe, write in code}
{code, Verb, Tag} → {}10
```

CIPHER

A cipher, to cipher, to encode, to encrypt. Another space is opening up. *Information* and *data* on one side, *to code* and *to cipher* on the other. Although a cipher makes a beautiful conceptual symmetry, in terms of its context it doesn't bring much to the table since it inhabits a space close to and in-between the concepts of *data* and *information*.¹¹ It is a part of the same cloud where *information* and *data* are situated (*Concept n2180*), unlike *code*, which leads to another cloud and opens up a different conceptual space for articulating the same idea. This unsettled space now lies in-between *information*, *data*, *code*, and *cipher*. In this regard, a *cipher* will be treated differently than *data* and *code*. We will come back to this shortly. On the other hand, what both *code* and *cipher* bring to the discussion are interesting etymological readings:

code (n.)

c. 1300, "systematic compilation of laws," from Old French *code* "system of laws, law-book" (13c.), from Latin *codex* "systematic classification of statutory law," earlier *caudex* "book," literally "tree trunk," hence, book made up of wooden tablets covered with wax for writing. De Vaan traces this through Proto-Italic **kaud-ek-* to PIE **kehu-d-* "cleaved, separate," which he also sees as the root of *cauda* "tail" (see *coda*).¹¹

cipher (n.)

late 14c., "arithmetical symbol for zero," from Old French *cifre* "nought, zero," Medieval Latin *cifra*, which, with Spanish and Italian *cifra*, ultimately is from Arabic *sifr* "zero," literally "empty, nothing," from *safara* "to be empty"; a loan-translation of Sanskrit *sunya-s* "empty." Klein says Modern French *chiffre* is from Italian *cifra*.¹²

Code, etymologically seen as a compilation of laws, emphasises a cultural and contractual notion for communication, a codex of

¹⁰ Synonyms provided by Wolfram Mathematica.

¹¹ "Code|Origin and Meaning of Code by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/code>.

¹² "Cipher|Origin and Meaning of Cipher by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/cipher>.

behaviour. On the other hand, the etymological notion of *cipher* opens up a space for procedures which operate on empty symbols, symbols that could mean anything. Together, both of their etymological wisdoms could constitute a codex for operating on empty symbols. By itself, this is an interesting way to think of coding and articulating information. This is how we will treat *cipher*. It will be a joker.

The atmosphere is getting dense. Concepts are interweaving and blending; notions of *entropy*, *data*, *time*, *information* are mixed with *architecture* and added to *code*, *codex*, *law*, *cipher*, *zero*, and *nothingness*; an excited cloud is getting denser: rain. This fusing, weaving, and playing is happening in-between concepts, between specific and generic, with symbols that could mean anything. It doesn't start or end; we can just stop participating in the play whenever we've had enough. But let us continue the play and reverse the direction, and get back from the notion of *code* to *information*, just by moving between synonyms:

```
code → inscribe → scratch → disturbance → noise →  
randomness → entropy → information13
```

This journey somehow incorporates all the notions that appeared thus far. The axis of symmetry is in *noise*. To get from *code* to *information*, we go from *inscribing* and *scratching* to *randomness* and *entropy*, from cultural aspects to technical ones. There is a wisdom of language,¹⁴ of its etymology, its synonyms and other forms, which takes us on an unexpected excursion. With the use of synonyms, *code* transforms into *information* only by passing through *noise*. It is a beautiful word game. The spectrum is becoming richer and richer. The space between concepts is expanding. What is important to point out is that these four distinct notions of the idea that we are navigating around, without it being explicitly there, are articulated by moods of concepts where *information*, *data*, *code*, and *cipher* mix in a delicate way. The beauty of this synthetic process is that just by playing an *Informational Instrument*—without assuming any grammars, structures, or hierarchies—indexes gather and form subtle conceptions of *information*, *data*, and *code*.

CHARACTERS SPELT IN CHARACTERS

The focus is shifting from indexes and concepts to actors. Another question for the library: If books were asked to distinguish themselves from other books and show their curiosity, which books would choose *information*, *data*, *code*, *cipher*, and accompanying indexical clouds as important aspects of their character?











¹³ This is a result of an algorithm which can find paths between words based on synonyms.

¹⁴ See Michel Serres and Bruno Latour, *Conversations on Science, Culture, and Time: Michel Serres with Bruno Latour*, trans. Roxanne Lapidus (Ann Arbor, MI: University of Michigan Press, 1995).



Xenotheka reacts. Specific actors are showing up. They are characterised by the probability of their interest in the indexes in question. They form four spectra. Ten most prominent actors for each concept. 02.5













Information

	Brillouin_Science and Information Theory, 0.107053		Kittler_The Truth of the Technological World, 0.0240655
	Wiener_Cybernetics, 0.09397		Delanda_Philosophy and Simulation, 0.0223285
	Hofstadter_Gödel Escher Bach, 0.0304965		Serres_The Five Senses, 0.0216538
	Serres_Geometry, 0.0256132		Popper_The Logic of Scientific Discovery, 0.0213573
	West_Scale The Universal Laws of Growth, 0.0251933		Wiener_The Human Use of Human Beings, 0.0212663











Data

	West_Scale The Universal Laws of Growth, 0.0803778		Hofstadter_Gödel Escher Bach, 0.025065
	Carpo_The Second Digital Turn, 0.0598106		Taleb_The Black Swan, 0.0207986
	Negroponte_Being Digital, 0.0431234		Carpo_The Alphabet and the Algorithm, 0.0184645
	Hofstadter_I Am a Strange Loop, 0.0340924		Castells_The Rise of the Network Society, 0.0162312
	Buehlmann_Mathematics and Information Serres, 0.0258946		Schumacher_The Autopoiesis of Architecture Vol 2, 0.0157109

Code

	Schumacher_The Autopoiesis of Architecture Vol 1, 0.100993		Mertins_Modernity Unbound, 0.0197971
	Schumacher_The Autopoiesis of Architecture Vol 2, 0.0898639		Krier_The Architecture of Community, 0.017436
	Vidler_Histories of the Immediate Present, 0.0267836		Cook_Drawing, 0.0173613
	Sykes Hays_Architectural Theory 1993 2009, 0.0248419		Banham_A Critic Writes, 0.0169401
	Spuybroek_The Sympathy of Things, 0.0199887		Sorkin_All Over the Map, 0.0153834

Cipher

	Buehlmann_Mathematics and Information Serres, 0.165439		Serres_The Five Senses, 0.02025
	Serres_Geometry, 0.0598197		Deleuze Guattari_ A Thousand Plateaus, 0.0182323
	West_Scale The Universal Laws of Growth, 0.0364558		Latour_Facing Gaia, 0.0164009
	Serres Latour_Conversations on Science, Culture, and Time, 0.0220311		Wiener_Cybernetics, 0.0156097
	West_Scale The Universal Laws of Growth, 0.0251933		Serres_Rome, 0.0152694

○2.5

Concepts and their protagonists, rendering_03_RW_4060_r_50it21d.

There is consistency in the spectrum: similar concepts attract each other, similar actors group together. The first actor in the column always has the most affinity towards a specific *atom-letter*, while the last one has the least affinity. Since the concepts are closely related, some of the actors are immersed in more than one discussion:

```
West_Scale The Universal Laws of Growth → 3,
Hofstadter_Gödel Escher Bach → 3,
Schumacher_The Autopoiesis of Architecture Vol 2 → 2,
Serres_The Five Senses → 2,
Buehlmann_Mathematics and Information Serres → 2,
Serres_Geometry → 2,
Wiener_Cybernetics → 2,15
```

Xenotheka is always in motion; books are never alone. By posing a question, or sending an index to the library, a conversation is initiated. Four different notions or atmospheres around *information* have unfolded by 'texting' ('exchanging messages') with the library—three of them close to one another, and one quite far away—*information*, *data*, *cipher*, and *code*. ○2.1 Each concept has its own protagonists. Books start to talk and play with different faces of a concept. Now the actors—books—will take over. They are preparing for the stage. A short script of the play is on the table.

Four concepts, four acts, four actors for each act. The First Act starts with a focus on *information*. It is complemented by the Second Act with a focus on *data*, and the Third Act, focused on *coding*. Each act should have four main protagonists who will present themselves in the most suitable way according to their mood and the situation on stage. There are four actors on stage

¹⁵ Number of appearances of an actor in a conceptual spectrum.

in order to get two double articulations or a fourfold notion of the idea in question. It will be different with *cipher*. Since *cipher* is in the same context as *data* and *information*,¹⁶ it could evoke very similar discussions by already familiar actors. To avoid such a scenario, we will invite books foreign to the library to join *Xenotheka* and thus bring a new tone to the conversation on *cipher*.¹⁶

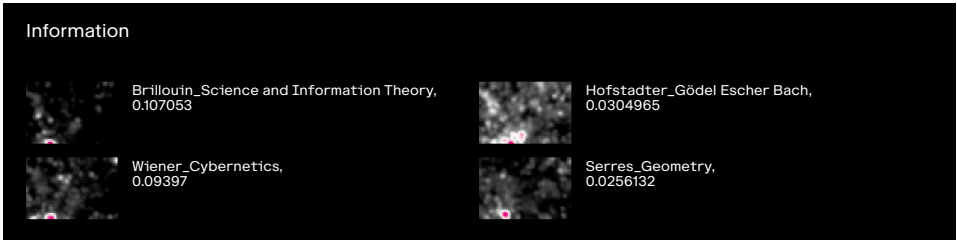
At this moment, the stage is being set so as to unfold the concept of *information* by showing how its four faces inhabit *Xenotheka*. Let us proceed to the actors and evoke their thoughts.

¹⁶ The choice of invited guests is at the will of the performer at that moment.

[illegible][illegible]

DRAMATIS PERSONAE

All our attention is on the concept of *information* and its four main protagonists. Four actors, four faces of a concept. Here they are, ready and waiting for the play to begin... ○2.6



○2.6
Four books, four actors, four faces of a concept: *information*, rendering_03_RW_4060_r_50it21d.

These images are snapshots of actors' faces in a moment of an intense discussion. Each actor has a profile that distinguishes him from the other three. Every face is articulated in a different manner. When we look at the actors and snapshots of their informational faces, ○2.6 and the way they emit light on the galaxy of concepts, ○2.1 we can see that their main highlights—magenta and white colour—are at similar positions. If we were to overlap these four images, the magenta and white highlights would partially coincide. Still, each actor lights up the galaxy in his own way. On the other hand, what distinguishes these four books from other books in the library and also brings them together is their focus on the group of concepts around the index of *information* and, furthermore, of *electricity*, *thermodynamics*, *cybernetics*, *entropy*, and so on. ○2.2 ■2.1 The library almost intuitively shows them as two pairs: *Brillouin_Science and Information Theory*¹⁷ and *Wiener_Cybernetics* as one pair,¹⁸ and *Hofstadter_Gödel Escher Bach*¹⁹ and

17 Leon Brillouin, *Science and Information Theory*.
18 Norbert Wiener, *Cybernetics: Second Edition: Or the Control and Communication in the Animal and the Machine* (Eastford, CT: Martino Fine Books, [1948] 2013).
19 Douglas R. Hofstadter, *Gödel, Escher, Bach: An Eternal Golden Braid*, 20th Anniversary Edition (New York, NY: Basic Books, 1999).

*Serres_Geometry*²⁰ as the other pair. ○2.6 In their encoding, the first couple shows a high probability of interest towards a concept indexed by information—0.1 and 0.09—which is almost three times higher than the second couple with 0.0304965 and 0.0256132 respectively. This demonstrates another symmetry of couples intrinsic to the concept of *information* in this version of *Xenotheka*.

What are the sophisticated formulations, the subtle invariants, and delicate distinctions among the four actors? Are they contradicting each other, or just telling different stories? What kind of spectra can they form while referring to *information*?

This conversation is about opening up the notion of *information*. In the process of going from a very specific index towards different articulations of a concept, we are trying to formulate a spectrum of notions around it, by forming, sculpting, and indexing other concepts. Through being in the same context, they enrich each other with both complementary and contrasting flavours. This is a process of thinking with books and talking among books, while trying to articulate a concept which is always escaping its definition by becoming more and more plentiful. As we change resolutions, definitions also change, concepts acquire many faces, and books start to tell different stories. Here are the actors, four of them, in a couple of pairs, grouped under the themes they will address:

Part one: Quantum and Nonhuman Morals

- *Brillouin_Science and Information Theory*
as *Brillouin_SIT*
- *Wiener_Cybernetics* as *Wiener_C*

Part two: Algorithms, Pyramids, and Self-Reference

- *Hofstadter_Gödel Escher Bach* as *Hofstadter_GEB*
- *Serres_Geometry* as *Serres_G*²¹

²⁰ Michel Serres, *Geometry: The Third Book of Foundations*, trans. Randolph Burks (London, New York: Bloomsbury Academic, 2017).

²¹ From this point onward, we will refer to the above-mentioned actors in the abbreviated forms as indicated.

PROLOGUE

The conversation starts. The couple in the front—the first two actors most similar in their approach to *information*—are on the stage: *Brillouin_SIT* and *Wiener_C*. They are being announced. It is an opening glance in an analytical manner. Books are seen and presented as independent objects, without belonging to any library. An introduction is done by the stage in an objective way: a simple description and statistics, book titles and word frequencies.



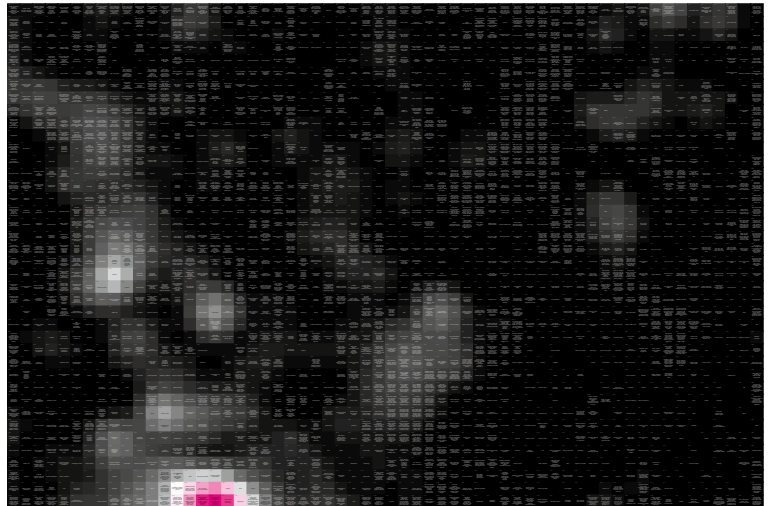
Just by looking at the titles of these books and their most used terms, we can see that both books are concerned with highly technical and formal notions of *information* and *communication*. The first articulation emphasises *energy* and *entropy* expressed as *theory*, while the second is more concerned with *time*, *systems*, and *machines* depicted as applied *control* and *communication*. Word frequency clouds suggest that *Brillouin_SIT* uses *symbols* and *coding* to deal with and articulate problems, while *Wiener_C* prefers *statistics* and *feedback* loops to form apparatus.

...

SCENE I: ON INFORMATION

The book titles, together with the word frequencies, already express powerful and individual but isolated tones. Yet we believe that a book is never alone. In fact, on this stage, there are 227 more books implicitly present. When invited to a context, a library, a *Xenotheka*, and surrounded by other books, our actors—*Brillouin_SIT* and *Wiener_C*—start to behave in a more sophisticated and delicate manner. Books begin to talk and react to each other's views and moves. A book is never only an isolated object. Books are always part of many different and even contradicting libraries, conversations, and traditions: they show their faces in the library. This is such an occasion. By playing an *Informational Instrument*, we will stage and host an artificial play that animates books and instigates their dialogues by asking them questions. *Brillouin_SIT* enters the stage first, and right behind him *Wiener_C* moves into the spotlight.

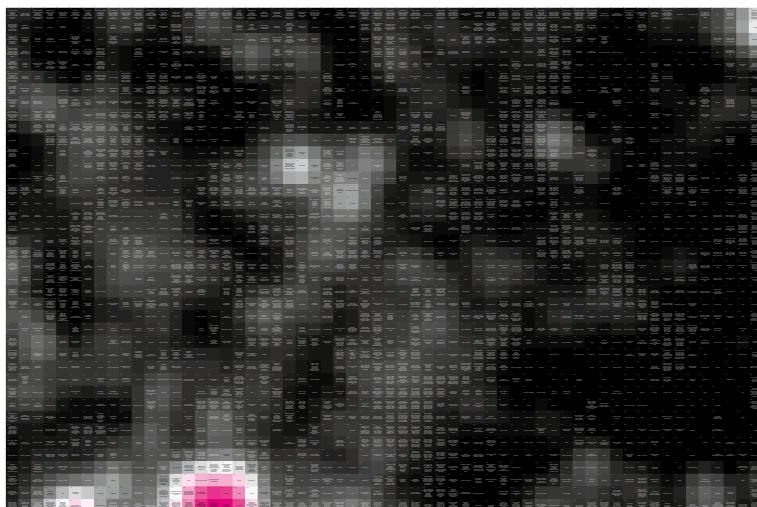
The galaxy we saw without light and fluctuation, which was showing static constellations of concepts and clouds of indexes, $\circ 2.1$ now acquires a personal mood for each book. It comes to life. Concepts become colourful, and the colour shows their intensity. Each actor lights up the galaxy in a characteristic way, $\circ 2.7 \circ 2.8$ by revealing his personality and mood, that is, his face. As we play the *Informational Instrument*, the galaxy changes, the concepts shift, our actors modify their temper, their mood. Setting up the context, exposing the actors to different galaxies, and dramatising their moves is what constitutes our play. While travelling together through multiple galaxies and environments, we become friends: one learns how the other behaves. It is staged and artificial, but at the same time intimate and beautiful.



02.7

Face of *Brillouin_SIT*, rendering_03_RW_4060_r_50it21d.

0 1



○2.8

Face of Wiener_C, rendering_03_RW_4060_r_50it21d.

0  1

What makes our two protagonists look at the galaxy in a similar way, and be friendly to each other, is their interest in the abstract negentropic notion of *information*. ○2.1 ■2.1 ○2.8 This is the articulation of their common interest, one which corresponds to the big magenta-white highlight. The other, smaller highlights are the differences in their specific articulations of the main themes. Let us listen to what both books have to say, first about *information* and then about how they position themselves towards each other. In the beginning, the extracted quotes might look somewhat random, without a clear narrative, but the premise is that by letting them talk, by building up the story and playing the *Informational Instrument*, we will form a new and, we would hope, unexpected consistency of the notion of *information*.

Brillouin_SIT opens up the scene with his story on the origins of information theory.

Brillouin_SIT:

*The theory of information originated in telecommunications and most of its present applications are still in this field. We have tried to prove that the theory can also be very useful in pure science and especially in physics. The similarity between information and entropy was stressed by Shannon, and, as a matter of fact, it goes back to an old paper by Szilard, who did the pioneering work at a time when the practical value of the theory was not yet recognised.*²²

Brillouin_SIT points to the connection between *information* and the thermodynamic notion of entropy. It is a story about how communication and information became strongly related to

²² Leon Brillouin, *Science and Information Theory*, ebook, loc 513.9/638.

physics. Communication is always physical, but to relate it to physics would mean giving it metrics and bringing an old humanist concept into a science laboratory. This changes everything. How can one measure a language with which one is measuring? How can one measure communication? This sounds challenging and intriguing even today. He dates it to a paper from 1929,²³ and continues in an even more provocative way.

Brillouin_SIT:

*Information and physical entropy are of the same nature. Entropy is a measure of the lack of detailed information about a physical system. The greater is the information, the smaller will be the entropy. Information represents a negative term in the entropy of a system, and we have stated a negentropy principle of information.*²⁴

Physics and information start to talk among themselves. This becomes one of the central notions for *Brillouin_SIT*. By exploring this relationship, he opens up a vast space where he can play with *information* in a formal and symbolic way. This is what computers do and this is one of the notions that will be explored in this *Play Among Books*. Information and physical entropy are of the same nature, states *Brillouin_SIT*. They become more entangled as we moves toward their quantum mechanical articulations. *Brillouin_SIT* continues to articulate his physical theory of information in a similar manner. *Information* becomes the accompanying concept and a twin friend to negative entropy. ○2.2 ■2.1

Brillouin_SIT:

*Whenever we make an observation on a physical system, we must have all sorts of sources of negentropy. We use this negentropy, and we increase the total entropy of the laboratory containing the system under observation and the measuring instruments. As a result, we obtain a certain amount of information about the system. The increase in entropy is, however, always larger than the information gained. This result represents an extension of Carnot's principle, and we have tested its validity on a great variety of examples. We thus proved that the theory of information cannot be built as a separate entity. The connection with thermodynamics is so close that consistency requires a physical theory of information. This proof is the aim of the present book.*²⁵

With *Brillouin_SIT*, physics and communication become part of the same milieu. The implications are far-reaching. A physical theory of information implies an abstract and formal notion

23 Leo Szilard, "On the Decrease of Entropy in a Thermodynamic System by the Intervention of Intelligent Beings," *Behavioral Science* 9, no. 4 ([1929]1964): 301–10.

24 Brillouin, *Science and Information Theory*, ebook, loc 513.9/638.

25 Brillouin, *Science and Information Theory*, ebook, loc 513.9/638.

of communication that can be formalised and operationalised, and, in the process, it provides a new ground where objects start to potentially communicate in yet unknown ways. The observer becomes the observed, the subject and the object start to articulate each other. Self-reference becomes a part of the artificial. The *Xenotheka* comes alive. It is expressing a similar story in a similar way. An object is not just an object any longer. The library is talking, and it refers to what *Brillouin_SIT* is talking about in his own words. If we go back for a moment and look at the indexes of *entropy*, *negentropy*, and *information*, they inhabit the same part of the galaxy. The positive, the negative, and the synonym are situated in *atom-letters n2357* and *n2356*. ○2.2 ■2.1 They are so close to each other because our actors like talking about them, because this is the atmosphere of the library. As we stated before, similar indexes attract each other, they come together. In this library, their similarity is emphasised by the two actors on stage. The instrument seems to be well tempered.²⁶

A moment of silence.

...

Wiener_C takes the stage. He continues in a similar tone as *Brillouin_SIT*; he does not contradict, rather he lends a twist to his story. His opening statement is about *information*, and he starts with three intriguing formulations.

Wiener_C:

*Information is information, not matter or energy.*²⁷

*The information must be carried by some physical process, say some form of radiation.*²⁸

*One of the lessons of the present book is that any organism is held together in this action by the possession of means for the acquisition, use, retention, and transmission of information.*²⁹

Together these statements form a provocative ground. Information is not energy or matter, but it must be carried by a form of radiation. Information radiates; it moves by means of electromagnetic waves or subatomic particles, depending on how we look at it, but it is none of those exclusively; still it can be carried by both. It moves in many directions; there are as many receivers as there are transmitters in the digital space. So *Wiener_C*, similar to *Brillouin_SIT*, is trying to see communication as a form of radiation, rather than as a single linear progression that carries information.

²⁶ For a detailed description see *Informational Instrument*, 289.

²⁷ Wiener, *Cybernetics*, ebook, loc 312.5/483.

²⁸ Wiener, *Cybernetics*, ebook, loc 171.7/483.

²⁹ Wiener, *Cybernetics*, ebook, loc 362.0/483.

Wiener_C:

To cover this aspect of communication engineering, we had to develop a statistical theory of the amount of information, in which the unit amount of information was that transmitted as a single decision between equally probable alternatives. This idea occurred at about the same time to several writers, among them the statistician R.A. Fisher, Dr. Shannon of the Bell Telephone Laboratories, and the author. Fisher's motive in studying this subject is to be found in classical statistical theory; that of Shannon in the problem of coding information; and that of the author in the problem of noise and message in electrical filters. Let it be remarked parenthetically that some of my speculations in this direction attach themselves to the earlier work of Kolmogoroff in Russia, although a considerable part of my work was done before my attention was called to the work of the Russian school.³⁰

Wiener_C understands communication as an engineering problem and shows a spectrum of different ways of approaching it: via statistics, coding, and noise—all familiar indexes. But the problem for him is still the same: how to encode information on top of radiation? What is common to both *Wiener_C* and *Brillouin_SIT* is their reference to entropy and negentropy while addressing this encoding problem.

Wiener_C:

The notion of the amount of information attaches itself very naturally to a classical notion in statistical mechanics: that of entropy. Just as the amount of information in a system is a measure of its degree of organization, so the entropy of a system is a measure of its degree of disorganization; and the one is simply the negative of the other. This point of view leads us to a number of considerations concerning the second law of thermodynamics, and to a study of the possibility of the so-called Maxwell demons. Such questions arise independently in the study of enzymes and other catalysts, and their study is essential for the proper understanding of such fundamental phenomena of living matter as metabolism and reproduction. The third fundamental phenomenon of life, that of irritability, belongs to the domain of communication theory and falls under the group of ideas we have just been discussing.³¹

While *Brillouin_SIT* placed emphasis on the *physical theory of information*, *Wiener_C* formulates it as a problem of communication engineering. For one, it is thermodynamics, for the other, statistical mechanics. Both relate *information* to physics and entropy. For now, they appear to share the same interest and their differences seem almost a matter of specific formulations

³⁰ Wiener, *Cybernetics*, ebook, loc 59.0/483.

³¹ Wiener, *Cybernetics*, ebook, loc 59.0/483.



n1826e11	n1827e11 precisely, background, totally, neutral, coincidence, marcel, enlightenment, kernel, permutation, elitist, avowedly	n1828e2 consistent, elementary	n1829e4 universal, implicitly, unambiguous, formulation	n1830e3 formulate, acceptance, incompatibility	n1831e1 rationally	n1832e2 pseudo, ethic
n1886e13	n1887e6 precise, non, paradoxical, insight, inherent, concise	n1888e1 meaningless	n1889e7 basic, assert, finite, formula, zero, unambiguously, meaninglessness	n1890e9 interpret, arbitrarily, formally, intuitive, uniqueness, explicable, calculable, extrapolat...	n1891e9 contradict, entail, predecessor, independence, unacceptable, unaffected, untenable, paragraph, definable	n1892e1 justify
n1146e10	n1147e3 undermine, nonsensical, unknowable		n1149e2 indeterminacy, tautology	n1150e19 sequence, confirmation, intuitively, methodological, statistical, calculus, undefined, deduct...	n1151e25 hypothesis, occurrence, test, simplicity, precision, singular, observable, section, postulate, refute, conjecture, den...	n1152e8 applicable, derivation, satisfactory, unsatisfactory, hypothetical, falsity
n1206e12	n1207e4 overlap, epistemological, mutandis, mutatis	n1208e1 unwarranted	n1209e3 relativize, determinist, factually	n1210e74 logically, conditional, measurement, existential, slit, attainable, wittgenstein, refutat...	n1211e4 logical, unobserved, admissible, ellipse	n1212e3 deduce, conjunction, inference
n1266e6	n1267e2 instantiations, obscurantism		n1269e1 quantum		n1271e2 subjectively, inadmissible	n1272e3 empirically, dogmatically, contradistinction
n1326e6	n1327e3 impossibility, argumentation, solipsism	n1328e2 limitation, spurious		n1330e1 assertion	n1331e1 unconditionally	n1332e5 deduction, empirical, speculative, footnote, conditionally
n1386e13	n1387e4 kant, mediation, oneness, existentialist	n1388e1 subjective	n1389e3 illusory, phenomenal, contingently	n1390e4 determinate, teleological, unavoidably, worthlessness	n1391e8 predicate, causality, inhere, nonentity, transcendental, nihl, antinomy, noumenon	n1392e8 receptivity, regress, divisibility, completeness, judgement, syllogism, priori, disjunctive, intuition, conception, manif...
n1446e3	n1447e3 immanent, presupposition, solipsistic		n1449e1 dialectician		n1451e1 groundless	n1452e2 synthesis, coexistent
n1506e5	n1507e2 subtract, cogito	n1508e1 resuscitate	n1509e2 dialectic, transcendent	n1510e2 existent, sophist	n1511e2 presuppose, categorical	n1512e2 determination, divisible

02.9 0 1
Face of Brillouin_SIT - zoom to the cloud of indexes surrounding the index of quantum, rendering_03_RW_4060_r_50it21d.



and subtleties. In their discussions, *communication* obtains a physical dimension, an abstract channel, and form that radiates. A physical experiment becomes performative and dependent on the *community* in which it is performed: *coding, noise, message, entropy, statistics*. The laboratory and the experiment become inseparable from each other. The old promise of an independent observer is broken. Information and physical entropy are of the same nature. This is the new challenge.

Wiener_C:

*Thus, as far back as four years ago, the group of scientists about Dr. Rosenblueth and myself had already become aware of the essential unity of the set of problems centering about communication, control, and statistical mechanics, whether in the machine or in living tissue.*³²

While *Brillouin_SIT* stays abstract in his articulations, *Wiener_C* starts applying his arguments by making direct analogies between *machines* and *living tissues* through the notions of *control* and *statistical mechanics*. Approaches start to differ; the atmosphere is getting more charged.

...

End of the First Scene

SCENE II: QUANTUM

The actors start to talk about their particular interests and unusual formulations. Subtle differences between them begin to emerge. *Theory of communication* is one articulation of information, *control and communication* is the other. Vectors of their approach are seemingly of a similar magnitude, but have quite different angles. What distinguishes *Brillouin_SIT* from *Wiener_C* in this library is the former's pronounced interest in the notion of 'quantum'.^{32.9} *Brillouin_SIT* continues the conversation by introducing the concept of *information* into the quantum environment. In order to talk and show some of the phenomena he is interested in, *Brillouin_SIT* brings four conceptions to the scene: *the observer, the infinite accuracy, the amplifier, and the error*. He starts playing with them: a play within a play. Let us enjoy the spectacle.

OBSERVER

Brillouin_SIT picks up where he left off in the first scene, with the *observer*. He now observes the observer from three perspectives, and each time the observer behaves differently: seen from the point of view of classical physics, the observer is independent of the experiment. From the perspective of thermodynamics, observation always increases entropy—directly or indirectly—and

³² Wiener, *Cybernetics*, ebook, loc 60.5/483.

from the quantum physics point of view, measurement—at least partially—determines the future behaviour of the system. Different notions of physics talk about the world and the observer in different ways.

Brillouin_SIT:

*How can we define classical physics? Elsasser characterizes this stage by the possibility of nonperturbing experiments, in which a clear distinction can be drawn between the observer and the system under observation.*³³

*They still believe in a real physical world following its own unperturbed evolution, whether we observe it or not. In order to reconcile this view with recent physical discoveries, they have to invent the existence of a number of “hidden variables” that we are unable to observe at present.*³⁴

*An observation is essentially an irreversible process. From a purely thermodynamical point of view, we have proved that no observation can be made without an accompanying increase of entropy in the physical system itself or in the equipment used for the experiment, and coupled with the system during the observation.*³⁵

*Similar remarks have previously been made by many authors, and especially by J. von Neumann, in the discussion of some paradoxical problems of quantum mechanics. One should never speak of a system being in a certain state unless he makes a measurement of some quantity involved. This process of measurement is irreversible, and determines, at least partially, the future behavior of the system.*³⁶

MATHEMATICIAN DREAMS OF INFINITE ACCURACY

At a quantum scale, distances become extremely small; and with more precise technology, they become even smaller. While observing infinitely small elements, one would, in theory, produce infinitely large quantities of information and, in effect, use infinitely large quantities of energy.³⁷ As *Brillouin_SIT* suggests, while a mathematician dreams of infinite accuracy, a physicist encapsulates infinity, symbolises it, places it into strange constellations, and observes the paradoxes. Instead of pursuing infinite accuracy, *Brillouin_SIT* operates with rigorous encoding.

Brillouin_SIT:

The mathematician dreams of measurements of infinite accuracy, defining for instance the position of a point

³³ Brillouin, *Science and Information Theory*, ebook, loc 395.1/638.

³⁴ Brillouin, *Science and Information Theory*, ebook, loc 559.0/638.

³⁵ Brillouin, *Science and Information Theory*, ebook, loc 398.4/638.

³⁶ Brillouin, *Science and Information Theory*, ebook, loc 399.5/638.

³⁷ “Infinite accuracy, with infinitely small error; would mean an infinite increase in information; hence an infinite amount of energy ΔE degraded.”, Brillouin, *Science and Information Theory*, ebook, loc 540/638.

without any possible error. This would mean an experiment yielding an infinite amount of information and this is physically impossible.³⁸

The increasing difficulty of measuring smaller and smaller distances indicates that the fundamental assumptions of Euclidean space (and time) must be considered only as an idealization, which cannot and should not be regarded as valid in the limit of extremely small distances. The mathematical definition of “infinitely small” distances corresponds to impossible physical conditions.³⁹

It has often been suggested that many of the difficulties of quantum theory could be eliminated by the introduction of some sort of minimal length. A fixed minimum length could hardly be justified on the basis of the preceding remarks. We hesitate to extend the example of the laboratory, with a limited amount of energy available, to include the entire universe, because of the difficulty of making precise definitions of its extent and content.⁴⁰

An infinitely small error or a fixed minimal measure? The first is impossible and the second irrational. Our actor encapsulates and abstracts from both by articulating two new operators: *the amplifier* and *the error*—a double articulation ready to inflate the infinitely small, to constitute and embrace the paradox.

AMPLIFIER

Brillouin_SIT:

*Amplifiers are always needed in the experimental devices. They perform, essentially, the following duty: to convert a quantum effect, by increasing its amplitude, into an effect that can be recorded on an apparatus operating on the classical level.*⁴¹

*Information theory and quantum conditions do not appear in contradiction; on the contrary, they are complementary to one another.*⁴²

The amplifier goes in the other direction than the infinitely small. It encodes it and translates the extremely small to another space where it is decoded and interpreted. The encoding process encapsulates both the measuring interference from the observer and the amplified errors in the process. It all becomes part of this specific encoding, both the error and the interference. It is the communication between different levels of abstraction with the noise and misunderstandings that are constitutive for

38 Brillouin, *Science and Information Theory*, ebook, loc 537.0/638.

39 Brillouin, *Science and Information Theory*, ebook, loc 400.6/638.

40 Brillouin, *Science and Information Theory*, ebook, loc 407.2/638.

41 Brillouin, *Science and Information Theory*, ebook, loc 401.7/638.

42 Brillouin, *Science and Information Theory*, ebook, loc 421.6/638.

communication. As *Brillouin_SIT* states: “Errors are an essential part of the world’s picture [...]”.⁴³

ERROR

Brillouin_SIT:

*Modern physics had to get rid of these unrealistic schemes, and it was indispensable to recognize the fundamental importance of errors, together with the unpleasant fact that they cannot be made “as small as desired” and must be included in the theory.*⁴⁴

*The laws of classical mechanics represent a mathematical idealization and should not be assumed to correspond to the real laws of nature.*⁴⁵

*Causality must be replaced by statistical probabilities; a scientist may or may not believe in determinism. It is a matter of faith, and belongs to metaphysics. Physical discussions are unable to prove or to disprove it. This general viewpoint may be called the “matter of fact” position.*⁴⁶

*Errors are an essential part of the world’s picture and must be included in the theory.*⁴⁷

Brillouin’s *quantum* then introduces four important notions to our scene: *the observer*, *the infinitely small distance*, and, as we just noted, also the *amplifier*, and the *error*. The *observer* suddenly becomes a part of the observed, the object a part of the subject; the rules have changed; any clear distinction is lost; it is a game of intensities and probabilities. An infinite accuracy is a mathematician’s dream, while a minimal distance is a physicist’s nightmare. What we have is a double articulation of a measure, a code. To abstract from the infinite and the minimal, errors and amplifiers become part of a new quantum constitution. This is possible since the observer has the right to influence the observed and to rigorously work with errors. What has been said in causalities is now re-articulated with probabilities. Chance becomes an object constituted out of probabilities. A new space opens up by this formulation. *Information* obtains a complementary quantum face. Working with *errors* and *amplifiers* becomes a form of *coding*.

We have heard some strong statements. *Brillouin_SIT* leaves the stage. The air fills with a murmuring sound. Other characters from the library start to comment on his talk...

The lights change.

...

End of the Second Scene

⁴³ Brillouin, *Science and Information Theory*, ebook, loc 558.0/638.

⁴⁴ Brillouin, *Science and Information Theory*, ebook, loc 539.0/638.

⁴⁵ Brillouin, *Science and Information Theory*, ebook, loc 557.0/638.

⁴⁶ Brillouin, *Science and Information Theory*, ebook, loc 558.0/638.

⁴⁷ Brillouin, *Science and Information Theory*, ebook, loc 558.0/638.

The dialogue continues. The atmosphere is really quite tense by now. *Wiener_C* takes the stage one more time and reacts in a new manner, this time with his contrasting concepts towards *Brillouin_SIT*. He expresses a space of differences and turbulence, not of agreement and harmony. Here *information* gets another particular context and a strong vector. These are the highlights of difference; they form two small clouds. ○2.10 ○2.11 One cloud of distinctions could be characterised as *mechanics* of *critique* and *morals*, ○2.10 and the other as *nonhuman instrumentation* or a *cybernetic ecology*. ○2.11 For now, these are just indexes to the following speech by *Wiener_C*. Let us see how relevant they are to it.

The main interest of both characters in *Xenotheka* has already been stated: the big highlight on *entropy*, *negentropy*, and *information*. ○2.1 ○2.2 ○2.7 But as we said, in this context, the contrast with *Brillouin_SIT* lies in the small highlights indexed by *ecology*, *diplomacy*, *rationality*, *manipulation*, and *nonhuman mechanisation of information*. ○2.10 ○2.11 So the tone and the atmosphere on stage have changed. *Wiener_C*'s strategy is different. Just by scanning the titles of chapters, we would suppose that his main tools in articulating ideas are fast, strong, and almost mechanical analogies which hold these titles together. *Mechanization Takes Command*.⁴⁸ At least, this is one specific way of looking at it. Let us hear what the nonhuman morals accentuated by *Wiener_C* have to add to this discussion. Can *Brillouin_SIT*'s quantum notion of *information* be challenged? *Wiener_C* replies by stressing some of his analogies—the first, regarding time:

Wiener_C:

Newtonian and Bergsonian Time

*This transition from a Newtonian, reversible time to a Gibbsian, irreversible time has had its philosophical echoes. Bergson emphasized the difference between the reversible time of physics, in which nothing new happens, and the irreversible time of evolution and biology, in which there is always something new. The realization that the Newtonian physics was not the proper frame for biology was perhaps the central point in the old controversy between vitalism and mechanism; [...]*⁴⁹

To sum up: the many automata of the present age are coupled to the outside world both for the reception of impressions and for the performance of actions. They contain sense organs, effectors, and the equivalent of nervous system to integrate the transfer of information from the one to the other.

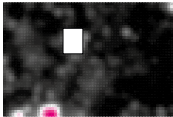
⁴⁸ *Mechanization Takes Command, A Contribution to Anonymous History*, a book by Siegfried Gideon which was published in 1948, the same year as Wiener's book on cybernetics, deals with similar interests from an architectural perspective. See Sigfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History*, First Edition (Minneapolis, MN: University Of Minnesota Press, [1948] 2014).

⁴⁹ Wiener, *Cybernetics*, ebook, ebook, loc 123.2/483.



n63a58	n564a5	n66a2	n66a1	n667a4	n68a2
johnson, gaulle, trustee, autocracy, mosque, autocrat, reichstag hanover, stalin, saddam, presidential, khrushchev, ...	lewis, giuseppe, memo, manipulative, nixon	commission, sear	foretaste	religion, negotiation, adherent, re	undisputed, unrepeatable
n622a1	n623a1	n626a1	n626a1	n627a2	n628a6
misleadingly	churchill	seizure	mouthpiece	remake, subtitle	invisible, reshape, individualistic, unwanted, controllable
n682a1	n683a29	n684a3	n68a18	n687a4	
optimism	bloodshed, winston, fallible, inborn, doctorate, smallpox, causally unfashionable, toleration, schoolteac...	vienna, austria, schmidt	explosion, magazine, participation, explosive, film, unsuccessfully, mandatory, specialty, echelon, nonchalant	outlook, package, newspaper, rearrangement	
n742a1	n743a9	n744a1	n746a2	n746a6	n747a19
rationalism	elimination, morally, critically, newton, accountable, unsolved, chemically, canterbury, synaptic	newtonian	physiologically, radar	acceleration, amplification, viewer, synchronize, electromagnetic, subliminally	electricity, cool, extension, entertainment, posture, photo, telephone, avid, trance, show, classr...
n862a1		n86a3	n86a7	n867a39	n88a2
momentary		awareness, margin, visually	cartoon, fragmentation, explicitness, speeded, centralism, individualist, refashion	comic, staple, movie, inclusive, interrelation, mosaic, priestly, radio, involvement, divisive, typewriter, telegraph, paperb...	mumford, carapace
n862a18	n863a4	n864a7	n86a5	n86a25	n867a3
fragment, eliminate, consciously, dubious, scrutiny, scientifically, adolescent, emotionally, opacity, inflammatory	advent, static, intensely, fragmentary	stress, homogeneity, decry, individualism, stutter, undergraduate, unsuited	visualize, sequential, resonant, phoenicians, incantatory	visual, vogue, alphabet, pictorial, movable, interdependence, hypnotize, confessional, repeata...	uniformity, mechanization, literacy
n922a9	n923a3	n924a2	n925a14	n926a17	n927a1
reveal, foremost, vocabulary, sentimental, blindly, splinter, unwittingly, ludicrous, nowadays	audience, clash, unaided	sen, bias	prose, edgar, galaxy, recitation, immortalize, montaigne, anesthetize, schoolchild, public...	print, scholastic, interplay, bacon, quantification, effigy, oral, ordnance, africans, livre, aural, obscure, scriptu...	carver
n982a7	n983a6	n984a3	n98a9	n98a3	n987a4
sport, spectator, luxurious, insidious, magnificently, ceremonial, verbally	rhetoric, repudiate, calendar, imagery, heyday, shrewdly	literary, impeccable, diaphanous	rhyme, humanist, vernacular, wilson, encyclopedic, summa, plenum, foreshorten, vico	sixteenth, congruence, dilation	medieval, wordsworth, burgess, petrarch
n1042a5	n1043a7	n1044a5	n104a5	n104a2	n1047a3
unrestrained, epithet, cheaply, arduous, undecipherable	obsess, emblem, perverse, plot, incongruous, parody, italians	reader, obsession, grotesque, erudition, ars	invention, illumination, bible, pompous, easel	scholarship, popularization	revival, fixity, protestantism
					n1049a2
					specialization, assiduous

02:10 0 1
Face of Wiener_C - zoom to the cloud of indexes surrounding *morally* and *critically*,
rendering_03_RW_4060_r_50it21d.





n1863e3	n1864e2	n1865e1	n1866e1	n1867e1	n1868e3	n1869e2
animal, undifferentiated, reconstitution	perceptive, topical	quash	fascism	counterpoint	indiscernible, evolutionism, woolf	coextensive, holderlin
n1927e3	n1928e5	n1929e1	n1929e2	n1927e5	n1928e18	n1929e2
doubtless, immobile, impalpable	abolition, furor, fearsome, suppleness, stigmata	inhumanity	sobriety, dick	betrayal, punctual, sedimentation, vampire, exteriority	consistency, incorporeal, preestablished, spatiotemporal, melodic, effectuation, coagulat...	indiscernibility, masochist
n1983e2	n1984e4	n1985e4	n1986e11	n1987e18	n1988e74	n1989e5
aptitude, zoological	cosmic, indissolubly, luminosity, sonority	contagion, pact, clandestine, deserter	trait, courtly, linearity, gestural, irradiate, mol, reprise, aggressiveness, vagina, valence, jackal	refrain, imperceptible, rhythmic, lineage, sonorous, preexist, borderline, supple, despot, botch, sorcerer, conju...	slowness, milieu, involution, syntactical, axiomatic, itinerant, decode, enslavement, placard, sorcery, orchestration, ho...	nomadic, sedentary, francois, axiomatics, clausewitz
n2043e2	n2044e5	n2045e5	n2046e9	n2047e5	n2048e5	n2049e2
exterior, grievance	veritable, secrecy, unqualified, parasitism, buttock	cadence, offshoot, lobster, upsurge, nuptials	become, smooth, facial, wolf, subsection, jewelry, springboard, expressiveness, amalgamation	aggregate, disarticulate, neolithic, concretion, challenger	patchwork, territorial, wasp, riemann, endogenous	superposition, migrant
n2183e4	n2184e8	n2185e8	n2186e5	n2187e3	n2188e3	n2189e4
minor, expression, veer, alliance	threshold, musician, scramble, zigzag, crusade, bovine	uproot, drug, forgo, suffuse, staccato, arson	flight, pack, hole, squabble, deter	dismantle, hydraulic, luca	consolidation, segmentation, desargues	redundancy, stratification, equalization, stratify
n2183e11	n2184e3	n2185e5	n2186e2	n2187e2	n2188e1	n2189e4
mix, capture, vertical, intertwine, horizontal, expressive, contour, esprit, inexact, unmake, crisscross	flow, inaccurate, plug	speed, bureaucratic, minority, lawrence, oversimplify	intermingle, crucible	plateau, despot	atypical	pragmatic, segment, misconstrue, timbre
n2223e5	n2224e2	n2225e2		n2227e1		n2229e1
proliferate, populate, dichotomy, signpost, olfactory	invoke, archaeologist	cosmos, recherche		adventitious		MACHINE
n2283e8	n2284e4	n2285e1	n2286e2		n2288e1	n2289e1
science, flatten, localize, entrench, tackle, laboratory, prematurely, cohabit	minuscule, terrestrial, ecological, eric	erde	deforestation, nonhuman		transformer	APPARATUS
n2343e19	n2344e22	n2345e48	n2346e3		n2348e2	n2349e8
agency, scientist, stabilize, controversy, intermediary, risky, relocate, format, implausible, dewey, reassem...	lecture, ecology, anthropomorphic, astute, bruno, cosmology, diplomacy, prescriptive, manipulator, nasa, inconverti...	indisputable, apocalyptic, invocation, monotheistic, apocalypse, terre, delegation, watchmaker, tols...	instrumentation, cybernetic, nonhumans		territory, semiotics	periphery, experimentation, amorphous, injection, ramify, feudalism, mnemonic, diagrammatic

02.11 01 1
Face of Wiener_C - zoom to the cloud of indexes surrounding *nonhuman*, *cybernetic*, and *instrumentation*, rendering_03_RW_4060_r_50it21d.



*They lend themselves very well to description in physiological terms. It is scarcely a miracle that they can be subsumed under one theory with the mechanisms of physiology.*⁵⁰

*Thus the modern automaton exists in the same sort of Bergsonian time as the living organism; and hence there is no reason in Bergson's considerations why the essential mode of functioning of the living organism should not be the same as that of the automaton of this type. Vitalism has won to the extent that even mechanisms correspond to the time-structure of vitalism; [...]*⁵¹

Some rumours spread in the library. One voice stands out. It is *Schrödinger_WIL*.⁵² We cannot hear him clearly, so we will have to paraphrase the voice, the crowd, and the noise:

Reversible and irreversible time, Newtonian and Gibbsian time, astrological and meteorological time, mechanist and vitalist time, Bergsonian time... —For *Wiener_C*, time becomes an important quest. He introduces a whole spectrum of different notions of time, but not in order to celebrate their differences but to show them as one couple or one analogy with different coatings. In this manoeuvre, he omits an important distinction between two irreversible times, crucial when dealing with entropy: the entropy-increasing time of thermodynamics, also referred to as the time of ageing, and the opposite flow to it, negentropy time. This is the time of life, of evolution and Darwin. Both irreversible, but flowing in opposite directions. By missing this subtle difference, *Wiener_C* is able to situate the modern automaton in the same sort of Bergsonian time as living organisms, which would otherwise, one imagines, stay in their separate times, inhabiting a different part of the time spectrum. Voices get lost in the noise...

On the other hand, if we take this thought a step further and imagine that both automata and living organisms have many different clocks, that they don't compete or threaten one another, then each can acquire different speeds and be talked to in various ways. This is an expanding world operating at various speeds, in contrast to a two-faced world at the single speed of *Wiener_C*.

Undisturbed by *Schrödinger_WIL*'s comments, *Wiener_C* proceeds to stabilise his ideas by adding more analogies: brain and computing machine, nervous system and computation system, neurons and relays, in the same manner as a part of his title suggests: *Animal and the Machine*:

Wiener_C:

Cybernetics and Psychopathology

Nevertheless, the realization that the brain and the computing machine have much in common may suggest new and

⁵⁰ Wiener, *Cybernetics*, ebook, ebook, loc 137.5/483.

⁵¹ Wiener, *Cybernetics*, ebook, loc 138.9/483.

⁵² Schrödinger, *What Is Life? The Physical Aspect of the Living Cell*.

valid approaches to psychopathology and even to psychiatrics. These begin with perhaps the simplest question of all: how the brain avoids gross blunders, gross miscarriages of activity, due to the malfunction of individual components.⁵³

Computing Machines and the Nervous System

It is a noteworthy fact that the human and animal nervous systems, which are known to be capable of the work of a computation system, contain elements which are ideally suited to act as relays. These elements are the so-called neurons or nerve cells. While they show rather complicated properties under the influence of electrical currents, in their ordinary physiological action they conform very nearly to the "all-or-none" principle; that is, they are either at rest, or when they "fire" they go through a series of changes almost independent of the nature and intensity of the stimulus.⁵⁴

Brain Waves and Self-Organizing Systems

In the previous chapter, I discussed the problems of learning and self-propagation as they apply both to machines and, at least by analogy, to living systems. Here I shall repeat certain comments I made in the Preface and which I intend to put to immediate use. As I have pointed out, these two phenomena are closely related to each other, for the first is the basis for the adaptation of the individual to its environment by means of experience, which is what we may call ontogenetic learning, while the second, as it furnishes the material on which variation and natural selection may operate, is the basis of phylogenetic learning.⁵⁵

After providing a whole spectrum of analogies, as the third scene is coming to an end, *Wiener_C* in his closing remarks, maybe not deliberately but in effect, takes the observer out of the quantum context and places them back in the context of classical physics where they—the observer—again, in his words, become unscientific. He does so by stressing the difference of scales between the atomic and the social. *Translator, traitor*. Observation is a distortion.

Wiener_C:

Information, Language, and Society

It is in the social sciences that the coupling between the observed phenomenon and the observer is hardest to minimize. On the one hand, the observer is able to exert a considerable influence on the phenomena that come to his attention. With all respect to the intelligence, skill, and honesty of purpose of my anthropologist friends, I cannot think that any community which they have investigated will

⁵³ Wiener, *Cybernetics*, ebook, loc 334.0/483.

⁵⁴ Wiener, *Cybernetics*, ebook, loc 289.7/483.

⁵⁵ Wiener, *Cybernetics*, ebook, loc 393.0/483.

ever be quite the same afterward. Many a missionary has fixed his own misunderstandings of a primitive language as law eternal in the process of reducing it to writing. There is much in the social habits of a people which is dispersed and distorted by the mere act of making inquiries about it. In another sense from that in which it is usually stated, *traduttore traditore*.⁵⁶

There is much which we must leave, whether we like it or not, to the un-“scientific,” narrative method of the professional historian.⁵⁷

This is quite a different mood than the quantum mood of *Brillouin_SIT*, who reacts swiftly and distances himself from *Wiener_C*.

Brillouin_SIT:

*But we are in no position to investigate the process of thought, and we cannot, for the moment, introduce into our theory any element involving the human value of the information.*⁵⁸

This discussion revolves around the same interest articulated in a different manner. Science and information, on the one hand, and control and communication on the other. A *quantum* as other to *nonhuman morals*. As the title of *Wiener_C* emphasises, he is about *Control and Communication in the Animal and the Machine*. He reflects this in the topics at stake. Sometimes in an opposition, as in Newtonian and Bergsonian notions of time, where one in an evolutionary manner dominates the other, or as almost natural analogies between *computing machines* and the *nervous system* or *brain waves* and *self-organising systems*. With a direct analogy as opposed to the double articulation, a quite different space opens up. *Brillouin_SIT* and his emphasis on the double articulation of *errors* and *amplifiers*, on the one hand, and the *observer* and *infinite accuracy* on the other, produce a quantum phenomenon as their product. We will read this as a new and fresh ground which uses self-reference as an opening to another plateau. With *Wiener_C* and his almost literal analogies, we stay stuck in an infinite loop. A self-reference closed in itself because of itself. It is almost like a spiritual experience justified in numbers. *Brillouin_SIT*'s *quantum* stays in the abstract and communicates in any way it can, while *Wiener_C*'s *nonhuman moral* tries to apply the communication scheme in every way it can: two very refined and close notions of *information*, one economical, the other political, and both tied to the physics of communication.

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End of the Third Scene

End of Part One

⁵⁶ Wiener, *Cybernetics*, ebook, loc 366.1/483.

⁵⁷ Wiener, *Cybernetics*, ebook, loc 368.2/483.

⁵⁸ Brillouin, *Science and Information Theory*, ebook, loc 14.7/483.

PROLOGUE

Welcome back.

The second part of the First Act begins here. The interest is the same: *information*. But the characters are different. At the end of the First Act, *human value of information* was left hanging in the air as a puzzle. By abstracting it from meaning, *Brillouin_SIT* was able to avoid it and operate with *information* in a formal and symbolic way. On the other hand, *Wiener_C* brought it back to, as he calls it, the “unscientific observer.” This was the atmosphere we left behind as the curtain fell.

A new set of spotlights now come on; the colours change. The galaxy of concepts shines in a different way. This is an atmosphere for a new and fresh discussion. The second couple, *Hofstadter_GEB* and *Serres_G*, enters the stage, ready to talk. To fulfil the formal part of the play, the setting again provides a written generic and formal introduction based on counting words and analysing those most frequently used.

Gödel, Escher, Bach:

An Eternal Golden Braid by Douglas Hofstadter, 1979

achilles → 1358, tortoise → 945, system → 893, way → 880, level → 850, mean → 742, program → 723, just → 704, think → 683, symbol → 668, say → 665, theorem → 662, numb → 655, make → 566, rule → 557, know → 541, crab → 540, like → 535, tnt → 467, call → 462, word → 457, string → 456, come → 432, thing → 422, time → 419, use → 407, brain → 406, fact → 405, language → 377, different → 371, new → 370, idea → 352, look → 348, number → 343, let → 327, quite → 325, sentence → 322, point → 318, person → 312, question → 309, set → 305, write → 302, form → 295, line → 293, mind → 290, tell → 287, sense → 287, example → 280, high → 278, right → 278

Geometry:

The Third Book of Foundations by Michel Serres, 1993:

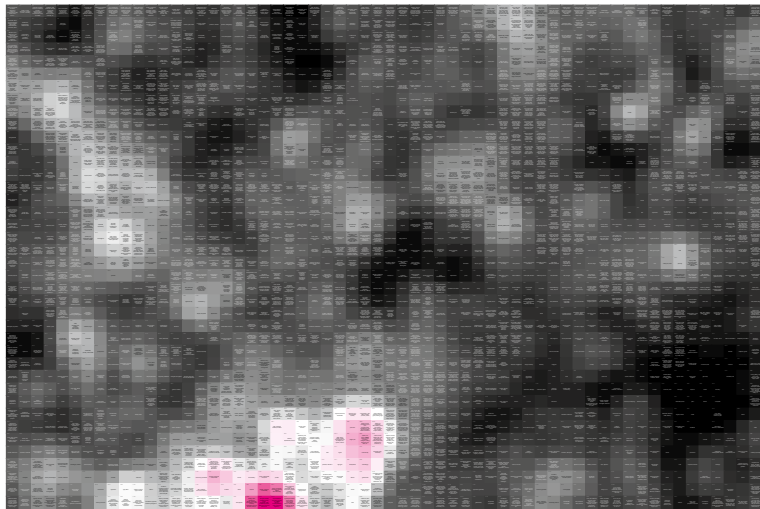
time → 374, say → 294, world → 291, space → 286, science → 278, geometry → 276, history → 242, origin → 232, place → 230, know → 228, thing → 214, like → 214, form → 204, object → 194, think → 191, knowledge → 182, relation → 158, point → 154, new → 151, way → 150, language → 148, shadow → 147, law → 145, draw → 141, remain → 140, element → 138, write → 136, earth → 134, word → 133, line → 130, mean → 129, come → 129, long → 128, doesn't → 127, let → 124, question → 123, thales → 122, flow → 120, begin → 116, square → 115, sun → 113, order → 112, give → 111, take → 109, pass → 107, socrates → 106, reason → 103, good → 101, call → 101, system → 100

Both titles are not explicit in their relation to *information*. Their word clouds provide a different ambience and context for discussing notions of *information* than the ones that were previously heard. It is a rather interesting atmosphere. The clouds of their most frequent words intersect around the notion of communication: *language, word, write, mean, think, know, say*. Indexed in this way, one could argue that they point to a more *human value of information*, which was explicitly excluded from the discussion in the closing remarks of *Brillouin_SIT*. Presumably, this is related to their interest in multiple articulations of the notion of information. They index the cloud around it with characters that bring into account ancient myths, stories, and thoughts: *Achilles, Tortoise, Thales, and Socrates*. Still, both actors insist on a formal way of addressing their interests: *system, form, line, point*. Each in its own manner, of course.

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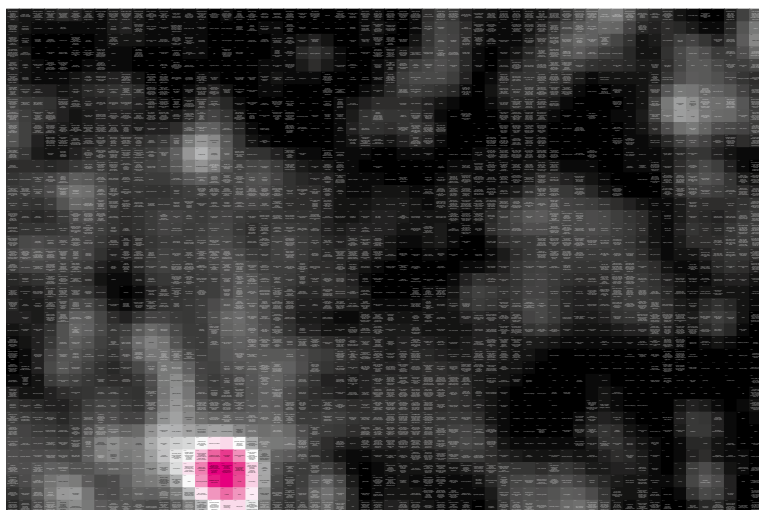
FACES LOOKING AT EACH OTHER

Two different atmospheres move through the galaxy of concepts. ○2.12 ○2.13 With each actor who works with it, *information* acquires a new face. It accommodates more and more. Just by looking at our two actors in the context of this *Xenotheka* we can notice some differences. ○2.12 ○2.13 *Hofstadter_GEB*'s interests are more scattered around the galaxy, while *Serres_G* appears more concentrated on one part. What brings them together and makes it exciting is that in this library, seen in this particular way, they bring concepts and indexes around *information, data, and cipher* close to one another. ○2.1 The premise is that during different plays, concepts will cross many disciplines, articulations, and books, and in doing so will become more sophisticated, richer, and more delicate.



○2.12
Face of *Hofstadter_GEB*, rendering_03_RW_4060_r_50it21d.





○2.13

Face of Serres_G, rendering_03_RW_4060_r_50it21d.

0 1

Hofstadter_GEB and *Serres_G* are ready to continue the conversation and address *information*. Each actor will speak as long as he desires, without interruptions. There will be no direct discussions. At his own request, *Hofstadter_GEB* will go first.

SCENE I: INFORMATION AND SELF-REFERENCE

Situated comfortably among friends, *Hofstadter_GEB* starts talking. He slowly draws us in. He appears excited; his face is scattered around the galaxy. ○2.12 His expression is articulated mainly by two small clouds: on one side—in the context of *information*—symbol, encoding, Rosetta, metric, and on the other side, self-reference, puzzles, and tricks. ○2.14 ○2.15 Here is one assumption: *Hofstadter_GEB* enjoys playing with puzzles. He encodes and symbolises messages and plays with information by changing its milieus: biology, physics, meteorology. All this is happening around the highlight of his main interest in coding and ciphering (Concept 2362). ○2.14 ■ 2.2 Our interest lies there as well. Is it us who push him in this direction? Yes, to an extent. A self-reference? That too. We think this is his main interest. His title suggests as much. An (E)ternal (G)olden (B)raid, woven by three masters of self-reference: (G)ödel, (E)scher, (B)ach.

While referring to the end of the first part, to *Brillouin_SIT*'s deliberate avoiding of the human value of information, *Hofstadter_GEB* without any hesitation and in a very confident way starts his talk by posing a question: *Where is the location of meaning? When is one thing not always the same?*⁵⁹ He elaborates on this

59 Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 383.2/1928.

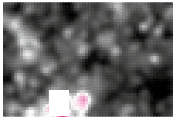
n1877n22	n1879n26	n1879n11	n1880n3	n1881n2	n1882n2	n1883n38
unfold, maturity, materialize, dynamic, underlie, frivolity, implementation, passivity, cohesion, redistribute, differentially...	literally, unpredictable, definitely, surface, tour, materiality, partition, jump, facet, inexorably, mesh, advent...	imaginable, redefine, tool, inflate, rotate, interestingly, hinge, infiltrate, instantaneously, short...	invisibly, reorient, lifespan	philosophy, epistemology	socratics, agnosticism	bundle, inanimate, caricature, rift, pejorative, socratic, hammer, gabriel, underrate, anthropocentric, scientism, artw...
n1537n6	n1939n9	n1939n4	n1940n8	n1941n4	n1942n18	n1943n27
thread, hedge, algorithm, looseness, differentially, silo	crash, switch, unsettle, mathematically, doesn, skew, shuttle, negotiable, palimpsest	model, container, fabric, passively	temporality, symmetrically, anthropology, monism, boyle, shapin, postmoderns, premoderns	disagreement, disagree, chemist, indices	entity, causal, ontology, essentialism, billiard, clark, realist, debut, reductionism, zebra, eidos, attract...	realism, continental, relational, cryptic, latour, intentionality, whitehead, interchangeably, unortho...
n1997n1	n1998n2	n1999n4	n2000n4	n2002n4		
endpoint	improbable, passerby	mathematical, originality, mathematics, reciprocate	actively, stake, immaterial, quasi	euler, rightness, uranium, invariants		
n2057n2	n2059n5		n2060n6	n2061n7	n2063n3	
summation, euclidian	perennial, receptive, methodical, bifurcation, compactness		eradicate, formality, substantiate, modelled, gratuitous, disturbingly	purport, mentality, stasis, commensurate, exhaustively, transcription, realising	additive, alphabetical, numeric	
n2117n4	n2118n2	n2119n3	n2120n19	n2121n13	n2122n1	n2123n1
confluence, virginal, monotheism, harlequin	scenography, bifurcate	parasite, anarchical, stylus	michel, priceless, panoramic, eradication, occident, conciliate, archetypical, architectonic, uncounta...	iteration, sophistication, neutrality, categorically, erwin, arguably, secretive, eiffel, disrespect...	crucially	portend
n2177n17	n2178n19	n2179n6	n2180n34	n2181n3	n2182n1	n2183n6
millennia, alloy, socrates, surveyor, crescent, agora, redress, pythagorean, nile, archaism, geometer, unpredicta...	pyramid, algorithmic, formidably, herodotus, concordance, indeterminism, federate, percolate, polytheism, ion...	sieve, maximally, transportable, intemperate, anamnesis, thales	finesse, anarchic, solstice, invariance, massively, generalise, vicarious, generational, ptolemaic, min...	inverse, quantifiable, galactic	darwinian	data, regardless, cellular, inspirational, galileo, coincidentally
n2237n4	n2239n1		n2240n1	n2241n3	n2242n1	n2243n38
geometry, diagonal, euclid, hilbert	rosetta		biochemistry	physic, measurable, biosphere	pulsate	size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, gro...
n2298n1		n2299n1	n2300n1	n2301n3	n2302n8	n2303n15
invariant		metric	sapiens	quantify, physicist, commonality	pitfall, conceivably, amusingly, viscosity, rainfall, interrelationship	huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, eleph...
n2357n49	n2358n3	n2359n1	n2360n8	n2361n1	n2362n3	n2363n12
spectrum, maxwell, fluctuation, thermodynamics, wiener, coefficient, conduction, cos, cybernetics, reliability, volt...	meteorologist, ontogenetic, meteorology	astrophysics	biology, span, quantitative, naively, mechanistic, approximately, whale, mortality, metabolism, genome, kilometer, ecosys...	biologist, idealize, straightforwardly, trillion, physicality, reset, predictably, fission, bacterium, mammoth, faucet, cal...	cell, reminiscent, marvelous, prelude, trig, SYMBOL, activate, oversimplification, cube, composer, logician, c...	myriad, provocative, prime, reliably, swirl, pinpoint, murky, BRAIN, elusive, microscopic, amazingly, untold, analogue, ch...



02:14

01

Face of *Hofstadter_GEB* – zoom to the cloud of indexes surrounding *cell* and *symbol*, rendering_03_RW_4060_r_50it21d.



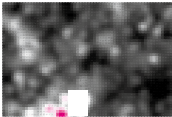


n1884a18	n1885a1	n1886a25	n1887a6	n1888a2	n1889a6	n1890a14
orient, apple, unclear, james, allure, caveat, flatness, obsolescence, unconvincing, unstated	etymologically	treatise, illiterate, keystone, authorization, ptolmy, readership, confusingly, watermark, geneva, iconoclas...	illustration, protestant, epitome, didactic, erudite, raphael	builder, venice	collection, artist, art, paint, prototype, crystal	unlike, today, display, celebrate, drift, track, inventor, transparent, bubble, shortcoming, champion, outwa...
n1944a1	n1945a1	n1946a6	n1947a3	n1948a5	n1949a6	n1950a7
poignantly	humanistic	manual, detriment, standardize, standardization, synopsis, Pietro	append, memorize, thumbelina	illustrate, copy, ban, blueprint, sparsely	recognizable, route, mimic, suitably, poussin, porbus	quest, calculate, masterful, fertilize, grete, samsa, gregor
n2004a3	n2005a21	n2006a1		n2008a1	n2009a41	n2010a26
retrieve, quirk, retrieval	famously, pristine, notation, identically, trademark, authorship, postindustrial, cola, absentia, C...	geometrically		performer	unlikely, record, intelligence, plus, pair, straightforward, metaphorical, map, interchangeable, needless, backwa...	deeply, list, complicate, unfortunately, piece, hit, translate, subtle, out, game, onto, elegant, conjure, instruct...
n2064a38	n2065a8		n2067a12	n2068a2	n2069a32	n2070a23
laboriously, font, printer, digital, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, ...	emulate, software, snapshot, unwieldy, dentist, interactivity		delta, diction, omega, orestes, alpha, gamma, iota, tau, kappa, rho, epsilon, omicron	elegiac, eta	upside, trick, screen, NUMBER , puzzle, proven, incredibly, intangible, inking, humorous, pop, fluent, st...	curious, inside, mental, tune, odd, vivid, trail, tiny, hopelessly, thrill, imbue, yearn, maze, uninteresting, fondness, C...
n2124a7	n2125a4	n2126a1	n2127a1		n2129a1	n2130a3
laser, prioritize, proprietary, chris, byte, optimization, xerox	scan, keyboard, processor, desktop	beta	sigma		inadvertently	harmless, luckily, undeniably
n2184a2	n2185a23	n2186a2	n2187a1	n2188a1	n2189a1	
laptop, analog	computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, ...	parlance, calculator	nighttime	unsuspected	unthinkingly	
n2244a1	n2245a3	n2246a8	n2247a2	n2248a1	n2249a1	n2250a13
ceos	messy, randomly, incremental	detection, lethal, prologue, eponymous, inordinate, charlatan, greco, lingua	psychologist, colorful	ailment	genuineness	innocuous, jokingly, hartmann, psychologie, sachs, frau, symptomatic, internationale, zeitschrift, inadvertent, mis...
n2304a4	n2305a22	n2306a2	n2307a2	n2308a1	n2309a4	n2310a6
sophisticate, dot, gauge, burner	predict, underestimate, arrogance, winner, practitioner, deviation, uncertainty, tunnel, ingrain, outland...	discoverer, subgroup	mathematician, grossly	bonus	wishful, madonna, siblings, gott	uninhibited, protrusion, schiller, frigidity, nursemaid
n2364a67	n2365a43	n2366a13	n2367a11	n2368a1	n2369a24	n2370a29
concoct, effortlessly, nutshell, flip, russell, hopefully, berry, can, redness, quibble, microphone, setup, C...	patently, skeptical, skepticism, sensational, demoralize, massage, fallacy, diatribe, overestimate, explaina...	cancer, odds, gamble, roulette, gauss, gallei, disc, relativity, embankment, gravitational, lorentz, ...	likelihood, toulouse, gambler, jakob, pascal, pacioli, blaise, bayes, fermat, cardano, graunt	eerie	childhood, anne, biographer, pater, haus, genitals, restful, piero, equestrian, cosa, superannuate, mir, animism, vi...	inaccuracy, plural, prefix, dialect, spelt, associative, dental, dit, germanic, proto, connexion, contre, partecipe, sla...

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0 1

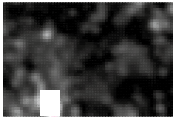
Face of *Hofstadter_GEB* – zoom to the cloud of indexes surrounding *trick* and *puzzle*, rendering_03_RW_4060_r_50it21d.



n1876e1	n1876e4	n1876e34	n1877e22	n1878e26	n1879e11	n1880e3
indetermination	hijack, deleuze, actualize, immanence	possibility, factual, speculation, maker, invert, exotic, eternally, exchange, sparse, inversion, option, sidestep, redundant, actual...	unfold, maturity, materialize, dynamic, underlie, frivolity, implementation, passivity, cohesion, redistribute, differenti...	literally, unpredictable, definitely, surface, tour, materially, partition, jump, facet, inexorably, mesh, advent...	imaginable, redefine, tool, inflate, rotate, interestingly, hinge, infiltrate, instantaneously, short...	invisibly, reorient, lifespan
	n1939e2	n1939e1	n1937e6	n1938e9	n1939e4	n1940e8
	misinterpretation, reactivate	transmitter	thread, hedge, algorithm, looseness, differentially, silo	crash, switch, unsettle, mathematically, DOESN, skew, shuttle, negotiable, palimpsest	model, container, fabric, passively	temporality, symmetrically, anthropology, monism, boyle, shapin, postmoderns, premoderns
n1994e2	n1995e2	n1996e6	n1997e1	n1998e2	n1999e4	n2000e4
erratic, dramatize	infinitesimal, saturation	immerse, imprint, stitch, reawaken, prism, interstice	endpoint	improbable, passerby	mathematical, originality, mathematics, reciprocate	actively, stake, immaterial, quasi
n2054e1	n2055e1	n2056e7	n2057e2		n2059e5	n2060e6
disequilibrium	saturate	equilibrium, box, knot, fluctuate, dive, passageway, makeup	summation, euclidian		perennial, receptive, methodical, bifurcation, compactness	eradicate, formality, substantiate, modelled, gratuitous, disturbingly
n2114e9	n2115e14	n2116e3	n2117e4	n2118e3	n2119e3	n2120e19
conversely, fusion, poorly, underneath, erase, archaic, expel, ceaselessly, schemas	unstable, chaotic, fragile, resistant, turbulent, vibrate, hesitant, apex, voluminous, dismember, commemor...	mixture, hardness, skin, softness, circumstantial, shimmer, whirlpool, addict, heady, narcotic, countrys...	confluence, virginal, monotheism, harlequin	scenography, bifurcate	parasite, anarchical, stylus	michel, priceless, panoramic, eradication, occident, conciliate, archetypical, architectonic, uncouna...
n2174e2	n2175e11	n2176e4	n2177e17	n2178e13	n2179e8	n2180e34
invent, dense	expanse, recount, inaugural, nullify, inert, ravage, hazy, torpor, reborn, tribunal, turbulence	ariadne, zeus, inextinguishable, downstream	millennia, alloy, SOCRATES, surveyor, crescent, agora, redress, pythagorean, nile, archaism, geometer, unpredicta...	pyramid, algorithmic, formidably, herodotus, concordance, indeterminism, federate, percolate, polytheism, ion...	sieve, maximally, transportable, intemperate, anamnesis, THALES	finesse, anarchic, solstice, invariance, massively, generalise, vicarious, generational, ptolemaic, min...
n2234e7	n2235e1	n2236e2	n2237e4		n2238e1	n2240e1
triple, observation, curve, multiplication, solar, vibration, deflect	tissue	astronomy, prosthesis	GEOMETRY, diagonal, euclid, hilbert		rosetta	biochemistry
n2294e5	n2295e8	n2296e5		n2298e1	n2299e1	n2300e1
experiment, equation, atom, experimentally, electron	transmit, mechanic, discrete, channel, approximate, linear, transmission, tube	filter, message, valve, tidal, hormone		invariant	metric	sapiens
n2354e13	n2355e21	n2356e31	n2357e49	n2358e3	n2359e1	n2360e69
collision, rigidly, dissipate, optimal, sensory, optimum, parameter, input, fingerprint, ion, clockwork, overshoot, proton	circuit, random, experimental, approximation, maximum, integral, energy, signal, efficiency, gas, tape, opera...	obtain, negligible, accuracy, information, sample, compute, demon, receiver, radiation, reversible, irreversal...	spectrum, maxwell, fluctuation, thermodynamics, wiener, coefficient, conduction, cos, cybernetics, reliability, volt...	meteorologist, ontogenetic, meteorology	astrophysics	biology, span, quantitative, naively, mechanistic, approximately, whale, mortality, metabolism, genome, kilometer, ecosys...



02:16 0 1
 Face of Serres_G - zoom to the cloud of indexes surrounding *pyramids* and *algorithms*, rendering_03_RW_4060_r_50it21d.



by inventing scenarios and puzzles, places information into specific environments, and sends messages to far-away worlds in order to see where their meaning lies.

Hofstadter_GEB:

One gets the impression from these two examples that isomorphisms and decoding mechanisms (i.e., information-revealers) simply reveal information which is intrinsically inside the structures, waiting to be “pulled out”. This leads to the idea that for each structure, there are certain pieces of information which can be pulled out of it, while there are other pieces of information which cannot be pulled out of it. But what does this phrase “pull out” really mean? How hard are you allowed to pull? There are cases where by investing sufficient effort, you can pull a very recondite piece of information out of certain structures. In fact, the pulling-out may involve such complicated operations that it makes you feel you are putting in more information than you are pulling out.⁶⁰

Can one pull out meaning from information, or are we, by pulling hard, in effect articulating meaning and writing a new message? *Hofstadter_GEB* stops and reformulates the question. Is there, on the other hand, a specific context for each message, such that meaning is always an articulation of information and its context? A one-on-one fixed mechanical relation: the disc and the jukebox?

Hofstadter_GEB:

These examples may appear to be evidence for the viewpoint that no message has intrinsic meaning, for in order to understand any inner message, no matter how simple it is, one must first understand its frame message and its outer message, both of which are carried only by triggers (such as being written in the Japanese alphabet, or having spiraling grooves, etc.). It begins to seem, then, that one cannot get away from a “jukebox” theory of meaning—the doctrine that no message contains inherent meaning, because, before any message can be understood, it has to be used as the input to some “jukebox”, which means that information contained in the “jukebox” must be added to the message before it acquires meaning.⁶¹

If there is no jukebox at hand, how should one construct it? Does chance play a role and reveal information in a specific context?

Hofstadter_GEB:

Can DNA evoke a phenotype without being embedded in the proper chemical context? To this question the answer

⁶⁰ Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 384.9/1928.

⁶¹ Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 415.0/1928.

is no—but a qualified no. Certainly a molecule of DNA in a vacuum will not create anything at all. However, if a molecule of DNA were set to seek its fortune in the universe, as we imagined the BACH and the CAGE were, it might be intercepted by an intelligent civilization. They might first of all recognize its frame message. Given that, they might try to deduce from its chemical structure what kind of chemical environment it seemed to want, and then supply such an environment. Successively more refined attempts along these lines might eventually lead to a full restoration of the chemical context necessary for the revelation of DNA's phenotypical meaning. This may sound a little implausible, but if one allows many millions of years for the experiment, perhaps the DNA's meaning would finally emerge.⁶²

But what kind of chance is it? For *Hofstadter_GEB* chance binds DNA and its meaning. But what if we think of chance in a different way, “as an object that can be counted and measured in a great variety of manners”?⁶³ In that case, chance doesn't bind but instead provides many unexpected contexts where DNA can become more than we could imagine. If so, then meaning lies somewhere else.

Hofstadter_GEB continues by trying to systematise a way in which one could decipher a message. Still undecided where meaning lies, he brings up even more different scenarios. Is the meaning contained in the message? Is it in a relation between the message and the jukebox? Is the deciphering of a message a way to provide many meanings depending on how one plays with the deciphering instruments? Is it a mixture of all these scenarios with some extra noise? Or, as *Brillouin_SIT* implied in the First Act (though in relation to the message) maybe meaning lies in another domain entirely? In this last thought, *Hofstadter_GEB* doesn't seem to agree and he continues with his analysis:

Hofstadter_GEB:

In these examples of decipherment of out-of-context messages, we can separate out fairly clearly three levels of information: (1) the frame message; (2) the outer message; (3) the inner message.

...

The formulation of these three “layers” is only a rather crude beginning at analyzing how meaning is contained in messages. There may be layers and layers of outer and inner messages, rather than just one of each. Think, for instance, of how intricately tangled are the inner and outer messages of the

⁶² Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 431.2/1928.

⁶³ Vera Bühlmann, *Mathematics and Information in the Philosophy of Michel Serres*, Eds. David Webb and Joanna Hodge (London, UK: Bloomsbury Academic, 2019), 295.

Rosetta stone. To decode a message fully, one would have to reconstruct the entire semantic structure which underlays its creation and thus to understand the sender in every deep way. Hence one could throw away the inner message, because if one truly understood all the finesses of the outer message, the inner message would be reconstructible.⁶⁴

This three-layered formulation of a message, although intuitive if looked at from *Brillouin_SIT*'s negentropic perspective of information, becomes a rather counterproductive gesture. For *Hofstadter_GEB* meaning is still intrinsically connected to the message, while *Brillouin_SIT* relates *message* and *information* and keeps *meaning* outside. This is how he can operate on *information* without disturbing or knowing its meaning. He abstracts from *meaning*, while *Hofstadter_GEB* makes puzzles that play with *meaning* which, consequently, acquires materiality. Although it is important to note *Hofstadter_GEB* didn't say that: this is our provocative reading of him.

Hofstadter_GEB continues by enjoying the paradoxes of self-reference. He plays with *tricks*, *puzzles*, *humour*, *curiosities*, and uses *performers*, *violins*, *records*, *list*, their *infinitude* and *interchangeability*.⁶⁵ He is, of course, influenced by the context of this *Xenotheka*; in a different library his face would change and he would act differently. He refers to the library and the library refers back to him. His story starts to turn on itself. The atmosphere is now becoming mistier.

Hofstadter_GEB:

Recently, the entire genome of the tiniest known virus, Phi X 174, has been laid bare. One most unexpected discovery was made en route: some of its nine genes overlap—that is, two distinct proteins are coded for by the same stretch of DNA! There is even one gene contained entirely inside another! This is accomplished by having the reading frames of the two genes shifted relative to each other, by exactly one unit. The density of information packing in such a scheme is incredible. This is, of course, the inspiration behind the strange “5/17 haiku” in Achilles’ fortune cookie, in the Canon by Intervallic Augmentation.⁶⁵

What happens when a code contains many other codes, when messages become nested in each other on many levels, each telling a different story in a different context? A self-referential coding. A form within a form. A crystal in a crystal. A spectrum seen from one side as an entropic field of crystals, and from the other as a negentropic island in action. Depending on which key we have, all the other locks change.

64 Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 405.0/1928.

65 Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 1250.5/1928.

Hofstadter_GEB:

*This is not so different from a DNA molecule, whose symbols, drawn from a meager “alphabet” of four different chemical bases, are arrayed in a one-dimensional sequence, and then coiled up into a helix. Before Avery had established the connection between genes and DNA, the physicist Erwin Schrödinger predicted, on purely theoretical grounds, that genetic information would have to be stored in “aperiodic crystals”, in his influential book *What Is Life?* In fact books themselves are aperiodic crystals contained inside neat geometric forms. These examples suggest that, where an aperiodic crystal is found “packaged” inside a very regular geometric structure, there may lurk a inner message.⁶⁶*

Hofstadter_GEB, clearly indulging himself in his speech, continues by showing different algebraic tricks in playing with self-reference. He is symbolising concepts, changing contexts, bending and twisting objects. He is coding.

Hofstadter_GEB:

Related to this notion of slipping between closely related terms is the notion of seeing a given object as a variation on another object. An excellent example has been mentioned already—that of the “circle with three indentations”, where in fact there is no circle at all. One has to be able to bend concepts, when it is appropriate. Nothing should be absolutely rigid. On the other hand, things shouldn’t be so wishy-washy that nothing has any meaning at all, either. The trick is to know when and how to slip one concept into another.⁶⁷

With great affection, he closes his speech with Gödel Code: a coding trick that simultaneously encodes a statement and a statement about itself. It is an encoding of an ancient paradox—A Cretan states: “*All Cretans are liars*”—into mathematical terms. A strange loop, as Hofstadter_GEB calls it.

Hofstadter_GEB:

Gödel had the insight that a statement of number theory could be about a statement of number theory (possibly even itself), if only numbers could somehow stand for statements. The idea of a code, in other words, is at the heart of his construction. In the Gödel Code, usually called “Gödel-numbering”, numbers are made to stand for symbols and sequences of symbols. That way, each statement of number theory, being a sequence of specialized symbols, acquires a Gödel number, something like a telephone number or a license plate, by which it can be referred to. And this coding trick

66 Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 408.3/1928.

67 Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid, ebook, loc 1564.0/1928.

enables statements of number theory to be understood on two different levels: as statements of number theory, and also as statements about statements of number theory.⁶⁸

The Gödel Code was a beautiful closing statement full of passion. With his fascination with *self-reference*, *strange loops*, and *meaning*, *Hofstadter_GEB* offers another heaven for *information*, different than the one discussed by *Brillouin_SIT* and *Wiener_C*. It is a spectrum of possible meanings open to interpretation and the imagination. Here are some of our thoughts sparked by his monologue.

Hofstadter_GEB introduces a lot of indexes around topics of information, coding, and self-reference while discussing meaning and paradoxes. He creates a rich, playful, and intuitive atmosphere. For him meaning lies in-between the subject and the structure, the disc and the jukebox, DNA and its context. He opens meaning to interpretation, he closes it, then he gives meaning a chance. It is almost as if only when the two are perfectly aligned that the meaning can arise. But is he really referring to meaning or is he presupposing a common ground, or a common sense for his messages? What happens if both the message and the context are interchangeable, if noise is present, and chance becomes objective and is handled as an object?⁶⁹ Even more so, if we presuppose that anything can partake of a communication, where do we then find stability or meaning? This becomes fairly important when we want to communicate with atoms, planets, books, language... —How to communicate with those that we cannot access and understand directly? One possible way would be to think about information in both the quantum physical and formal ways, as pointed out in the First Act by *Brillouin_SIT*. This would imply establishing communication channels and dealing with the noise and shadows in formal and iterative ways while trying to articulate meaning. The digital, in our opinion, actualises these questions, especially in this experiment. If books had an intrinsic and fixed meaning, this *Play Among Books* would be uninteresting at least, if not silly. On the other hand, if we imagine that books can talk, have a character of their own, contain information, and transmit messages, but their meaning is in another domain—namely with the reader, their traditions, and all the books they have read—then we are in another conceptual space with different kinds of questions and intrigues.

There's a lot to think about, and so: —

A moment of silence.

...

End of the First Scene

⁶⁸ Hofstadter, *Gödel, Escher, Bach: An Eternal Golden Braid*, ebook, loc 69.1/1928.

⁶⁹ For more on chance as an object, see Vera Bühlmann, *Mathematics and Information in the Philosophy of Michel Serres*.

SCENE II: ALGORITHMS, PYRAMIDS AND THEIR SHADOWS

Once again, the lights change; the galaxy acquires new colours again. Let us give the stage to *Serres_G*. His face is kind and focused at the same time. He doesn't respond directly to *Hofstadter_GEB*. Instead, by telling a story, he picks up most of *Hofstadter_GEB*'s indexes and opens a new plateau in a rather elegant manner. In *Xenotheka*, *Serres_G* lights up the galaxy in a way that relates to all the concepts at stake. His focus is in-between *information*, *data*, and *cipher*.^{○2.1 ○2.16} Taking this into account, concepts under his light should be excited in a different way and form yet another unexpected atmosphere in the cloud. By looking at his face in the library, we see that *Serres_G* connects *algorithms* and *pyramids*, talks of *percolation* and *polytheisms*, discusses *torpedoes* and *gnomons*, gives a new voice to *Thales* and *Socrates*. On one side of the interest that he shares at the moment are indexes of *Rosetta*, *metric*, *invariant*, and *meteorology*, and on the other, *mixtures*, *hardness*, *skin softness*, *shimmer*, *whirlpool*, *turbulences*, *vibrations*, *hesitation*... —all surrounded by *disequilibrium*, *information*, *biology*, *substances*, and *models*.^{○2.16} Many different indexes, fields, disciplines, and interests are forming this cloud. It is intriguing and puzzling. This is just one of his many faces, the third book of foundations.⁷⁰ With *Serres*, foundations are fluid and many. They never cease.

Serres_G looks at *Hofstadter_GEB* in a friendly way and starts talking. *Brillouin_SIT* and *Wiener_C*, who are sitting on stage next to him, are listening curiously if and how he is going to address consciousness and meaning or, as they refer to it, *the human value of information*. *Hofstadter_GEB* told an interesting story but they were not entirely impressed. *Wiener_C* liked it more, *Brillouin_SIT* a bit less.⁷¹ *Serres_G*, coming from multiple origins and always bringing a lot to the table, does not discuss meaning, but rather different ways in which a message can become meaningful. He opens the question from a different angle: what is communication if anything can potentially communicate? Ironically he begins with his own closing words:⁷²

Serres_G:

Over the course of the twentieth century we detached ourselves little by little from the space of the earth that we had inhabited for three millennia, so that little by little the space of solar light, of agriculture, of the sacred, of war, of nation states, of the written page disappeared from our sight, all of which geometry expressed, together, in its summing purity.

70 This book is a part of *Serres*' mini-series of three books of foundations: *Rome*, *Statues*, and *Geometry*.

71 This assumption comes both as a personal interpretation and reflection of actors' affinities towards concepts, as shown in ○2.5.

72 The last subchapter of *Serres*' book on geometry. See, *Serres*, *Geometry*.

*Now bodies, messages, information, knowledge, light in its speed more than its brightness circulate in mass: a new space of new transports is installed on a global Earth, a space more mixed than pure, more blended, variegated, tiger-striped, zebra-striped, in multiple and connected networks, than smooth or homogeneous.*⁷³

He creates his own setting. The ambience may be provided by *Xenotheka*, but how he lights up this galaxy is entirely his choice. ○2.13 He is a master of making relations.

Instead of addressing the human value of information, he inverts it and starts speaking of different kinds of intelligences where any being or object can emit, receive, store, and process information.⁷⁴ By this the Earth has changed, and the other way round; information is fast, it circulates in mass, it shimmers, it is chaotic and unstable. Language is coded in many ways, always composed of many threads. We will follow the thread of intelligence. Serres_G turns to his three friends.

Serres_G:

*The vertical gnomon, the angled framing square, the ruler, compass, perpendicular and pendulum adopt a constant form: a vertical straight line, or horizontal in the case of the balance, perpendicular or round, depending. Form signifies contour, figures, edges, definition and determination in the literal sense as well as the principle of organization of the object. The right angle describes the appearance of the framing square as well as its constitutive skeleton, its construction. Thus form can be regarded as a phenomenon and an essence, aspect or reality. Whether stone, marble, iron or bronze enter into the axis or the sundial as prime matter doesn't matter, provided that it rises perpendicularly from the plane of the ground. The information it shows or gives corresponds to its form and varies with it. According to the form, the information changes. Knowledge lies in the form.*⁷⁵

While talking about objects, Serres_G leaves meaning, so dear to *Hofstadter_GEB*, in another space. His triangle is of a different capacity: knowledge, form, and information. It in an abstract manner encompasses both living beings and objects, form and matter, artificial and natural. In this manner Serres_G looks at the gnomon as an object with its own kind of intelligence. It is a statue that likes to speak locally about the global weather, as long as its shadow moves with the sun. It talks of knowledge, form, and information in a circular motion. It is too much to decipher

⁷³ Serres, *Geometry*, ebook, loc 612.6/629.

⁷⁴ See Michel Serres, "Revolution Cognitive et Culturelle (Engl. Translation)," *Monas Oikos Nomos* (blog), 2007, <http://monasandnomos.org/2012/11/07/michel-serres-revolution-cognitive-et-culturelle-engl-translation/>.

⁷⁵ Serres, *Geometry*, ebook, loc 492.8/629.

at once, still it resonates well with *Xenotheka*. It is a play of an instrument, similar to ours.

Serres_G:

Language, again, assimilates form and information. The second lies in the first.

The technologies of old informed matter: the potter at the wheel modeled the clay in order to draw the urn from the circle and his tangential hands; thus from a pile of stones the mason raised the house according to the architect's plan, and the blacksmith twice did violence to the peaceful metal, in the fire and by the hammer. Industry added further plans to the crafts but along the same paths. We have changed all that. Our technologies today tend instead to explore or recognize first and foremost the refined and complex forms scattered in the things of the world and to choose one of them or to mix several of them when they correspond to our aims and the constraints of the manufacture being considered: these forms even precede them sometimes. Of course, we still assemble clocks out of metal as in the past, but a given crystal, a given molecule, even a given atom or isotope, now make for better watches, automatic and accurate, and some other given crystal functions as a valve or semiconductor.⁷⁶

A mechanical watch, a gnomon, and a crystal can all measure time. The first is constructed and informed, the other two are acknowledged and informing. They are active, natural, and artificial, found in the world: automata; they work by themselves. They talk, they send messages. Can we read them? What do they want to say? What kind of objects are they? Are they subjects, intelligent, with a character of their own? How to treat them? For us, it depends on whether we want to talk to them or look at them, if they are friendly or not. This yields a captivating twist. The meaning of *Hofstadter_GEB*'s message is lost; instead, form starts to show more in *Serres_G*'s hands than *Hofstadter_GEB* could imagine at this moment.

Serres_G:

The entirely informed forms lie in the things themselves, where it suffices to collect them; thus our works reverse the ancient processes by which information only came from our skillful hands or expert understanding. Idealism, narcissistic, only found in the world its own image, which it imprinted there with great effort. Science and technology reduced the real to their representations. Yet the loose earth and clay, the stone before the device, the metal in its gangue, in themselves and by themselves crystalline, conceal a thousand artificial objects as in a horn of plenty that the ancient hands and wills ignored by plugging it up. Our intelligence,

⁷⁶ Serres, *Geometry*, ebook, loc 494.2/629.

*our slightly stupid, violent, crude enterprise, had closed the treasure's door, even though the world hides a thousand times more marvels than our decisions. The sense, the direction, the project of the work are reversed. On this Sunday of technologies we recognize first of all that the Universe has already forged much: this is the fount of information.*⁷⁷

Serres_G talks about the big plenty and the great many. The entirely informed forms lie in the things themselves. They are scattered around the universe. If we can recognise and host them, start to communicate respectfully and invent a common artificiality, they become part of our world and begin to talk in as many languages as we can recognise or synthesise. These are the artificial communication channels. It is our contract with objects of the world, our contract with books. We don't need to understand them, but we would like to learn how to get to know them, or at least try to talk to them. Maybe we can become friends. As Serres_G suggests, the universe has already forged much. He continues in an even more surprising way.

Serres_G:

*There isn't any matter in the Universe. Otherwise the physical sciences would have ended up encountering limits to their progress or their history, boundaries foreseen and placed by materialist metaphysics. This latter vanishes with the progress of the physical sciences, which never cease discovering forms without ever encountering any matter they don't name, so as to only recognize mass. Matter doesn't exist; only forms are found, like atoms, and all the way down to the tiniest particle, with or without mass, innumerable forms, as well as their chaotic or ordered mixture, a system or noise which tosses and shakes their innumerable multiplicity as in a basket. There is only information, whose enormous stock in the world, no doubt expressible by a very large number, mathematically finite but physically infinite, leaves science in an open history. Even weight codes a field of forces, even any aggregate, colloid, or organism recodes a subset of coded forms. Only mixture and disorder, noise, chaos, give the illusion of matter.*⁷⁸

Code and information, mass and matter. There isn't any matter, mass is resistance, information is enormous, forms unfold subsets of coded forms—we call it a black box and a white fountain at once. Today we think of a particle as an excitation in a field, the densest part of the spectrum that talks to us. We think of assemblages and the Internet, organic and inorganic. All proliferate. None are pure, all are mixtures of many kinds of creatures and objects, of multiple worlds, of reality and fiction, of various media, of particular concepts; restless, unsystematic, consistent.

⁷⁷ Serres, *Geometry*, ebook, loc 494.2/629

⁷⁸ Serres, *Geometry*, ebook, loc 495.6/629.

Always on the move, making noise, talking in their own ways; by complementing and challenging each other, enriching capacities, producing different constellations. These are the actors and characters in *Xenotheka*, encoded informed forms, polluted lively crystals; fertile and smart. With *Serres_G* they can talk. He thinks of them as friendly strangers and aliens.

Serres_G:

Consequently, white intelligence is immanent and no doubt coextensive with the Universe. The world adds up and gives an enormous stock of forms. Here again is the source, transparent, the fundamental Earth of Geometry, once again wonderfully named.

There exists an immense objective intelligence of which artificial and subjective intelligence constitute small subsets. Our intelligence is not an exception in black surroundings that would passively wait for us to inform them. The object that we know is forged by us in a way that's analogous to certain things of the world, forever our guides.⁷⁹

How strange, even selfish it is to think only of human intelligence? How to open up the concept of intelligence beyond humans and machines, beyond natural and artificial?⁸⁰ Information, communication, bridges, and relations play an important role in this unfolding. With *Serres_G*, there are many kinds of intelligence: *white intelligence*, which is coextensive with the universe, *immense objective intelligence*, which is, among other things, constituted out of *artificial intelligence*, which sometimes lies in the things themselves, and a familiar *subjective intelligence*. *Human intelligence* is not rare or an exception in the universe anymore, but is surrounded by many other intelligences. These intelligences are different in kind and not in direct competition. Intelligence of Earth, mountain, book, and crystal, intelligence of language; machine intelligence, human, plant, and animal intelligence. They are not all the same. They are not in direct contest, nor are they neutral to each other. They coexist and are related. Each has a wisdom of its own. In this manner, in a *Play Among Books*, we acknowledge the intelligence of libraries, books, and concepts, and we establish communication channels and alphabets. It is just the beginning of the conversation. Our instrument is starting to play with shadows.

Serres_G continues.

Serres_G:

Intelligent, the gnomon intercepts the flow descending from the Sun, and both of them, all by themselves, draw on the

⁷⁹ Serres, *Geometry*, ebook, loc 497.0/629.

⁸⁰ The question is how to rethink artificial or machine intelligence out of its predominantly technocratic and tragic scenarios where it is mostly seen in contrast and as competition to natural intelligence. See, "Artificial Intelligence," *Wikipedia*, August 14, 2018, https://en.wikipedia.org/w/index.php?title=Artificial_intelligence&oldid=854873425.

ground, out of which comes this erected statue, the objective and partial information of the shadow that speaks locally about the form of the global world.

Geometry still slumbers beneath the earth or dreams in the brilliance of the Sun: the gnomon of the ancient Greeks or the Babylonians awoke one part of it along the singular forms common to the shadow and the light.⁸¹

Serres_G brings the many and plenty to the table. From the ancient Greeks to the contemporary notion of the global world, to different forms of intelligence, the universe, and back to the gnomon. Always trying to talk about both the universal and the singular, the “matter, black box, and form, white box.”⁸² Serres_G opens many doors to think about information, which go beyond linear narratives and intrinsic meaning to a space where nature and customs articulate each other, where language is wise and intelligence coextensive with the universe.

...

End of the Second Scene

End of the Second Part

Act I has come to an end. But the discussion continues behind the curtain...

By playing the *Informational Instrument*, by performing with it, and in trying to articulate the notion of *information*, we are slowly learning how *Xenotheka* behaves and reacts to our questions. We are communicating. We are getting to know our library, its atmospheres and moods. Books acquire their own intelligence by their position in a specific context of a library. They start to behave in a similar manner to Serres_G's informed forms. This constellation is both a comfortable and challenging one. It is a journey through a galaxy of concepts, where we meet books and play with concepts. In our conversation *Xenotheka* has so far offered four ways to approach *information*, and a few more out of the many that are about to come. We were navigating between highly technical articulations where with *Brillouin_SIT* and *Wiener_C* information acquired both a quantum and a cybernetic face. With *Hofstadter_GEB*, it went into a self-referential loop trying to understand its meaning, but instead of figuring this out, a question of intelligence was articulated in a captivating way. Intelligence, seen through the lens of Serres_G, becomes native to the universe with artificial intelligence and subjective intelligences as just parts of its spectrum, and arguably tiny, parts. *Xenotheka* has opened up a new way of rethinking concepts and ideas, which was, in a way, always already there.

Let us then continue with the Second Act and see how the story develops.

...

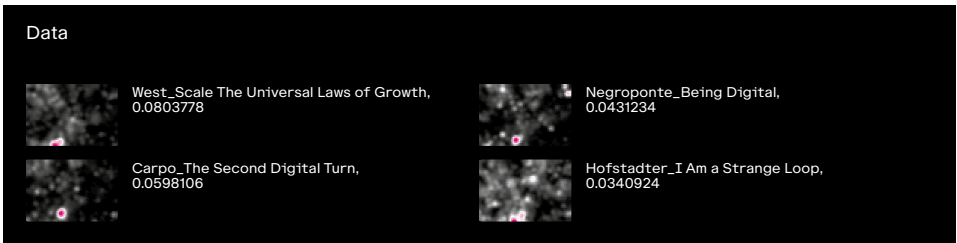
End of the First Act

⁸¹ Serres, *Geometry*, ebook, loc 497.0/629.

⁸² Serres, *Geometry*, ebook, loc 492.8/629.

DRAMATIS PERSONAE

The interval is over. The Second Act should start any moment now. Its plot is arranged in such a way that in our fourfold articulation the second spectrum of actors discusses the index of *data*.^{○2.5} How is *data* conceptually different from the notion of *information* in this specific context?^{○2.3} ■2.2 *Xenotheka* renders them similar but in a different manner.^{○2.1} What are the similarities and differences, and how do the articulations diverge? The library will never expose these contrasts in an explicit way. Differences are subtle but refined, always appearing in the cloud without prior categorisation, but according to an encoding and a library. The air is implicitly filled with *data*; it is being articulated by its four main protagonists: *West_S*,⁸³ *Carpo_SDT*,⁸⁴ *Negroponete_BD*,⁸⁵ and *Hofstadter_IASL*.⁸⁶ As discussed before, the hypothesis is that, in this context, the notion of *data* emphasises applications in a grounded, encapsulating and generic way.⁸⁷ *Data* should provide another different rendering and an atmosphere of the idea which is explicitly not there but indexed with *information*, *data*, *cipher*, *code*, and associated clouds.



○2.17
Four books, four actors, four faces of a concept: *data*, rendering_03_RW_4060_r_50it21d.

83 Geoffrey West, *Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies*, First Edition (New York, NY: Penguin Press, 2017), ebook.
84 Mario Carpo, *The Second Digital Turn: Design Beyond Intelligence*, First Edition (Cambridge, MA: The MIT Press, 2017), ebook.
85 Nicholas Negroponte, *Being Digital*, First Edition (New York, NY: Vintage, 1996), ebook.
86 Douglas R. Hofstadter, *I Am a Strange Loop*, Reprint Edition (New York, NY: Basic Books, 2008), ebook.
87 This was elaborated in the introduction to *Play I, Data*, 61.

The actors are onstage. They are challenged by the first conversation and excited to add twists and turns to the discussion. They are comfortably seated around the table and waiting to begin. ○2.17

Here is a hint from the library. According to the actors' probable affinity toward the concept, ○2.17 *West_Scale The Universal Laws of Growth* and *Carpo_The Second Digital Turn* are presumably more engaged with the concept, while *Negroponte_Being Digital* and *Hofstadter_I Am a Strange Loop* should be more relaxed and open to wider interpretations of *data*.

The form of the *Second Act* is a discussion between the four.⁸⁸

- *West_Scale The Universal Laws of Growth* as *West_S*
- *Carpo_The Second Digital Turn* as *Carpo_SDT*
- *Negroponte_Being Digital* as *Negroponte_BD*
- *Hofstadter_I Am a Strange Loop* as *Hofstadter_IASL*

TABLE FOR FOUR: A CLOUD OF DATA

PROLOGUE

Welcome to the Second Act. The curtain is up, the lights are on, the table is set. The four actors—*West_S*, *Carpo_SDT*, *Negroponte_BD*, and *Hofstadter_IASL*—are already on the stage and talking amongst themselves. Inside *Xenotheka*, these four actors seem to be the most eager to discuss the topic of *data* through its differences and similarities to the surrounding concepts. ○2.3 The actors and their characters in this act will articulate a new ambience, different to the one that was present while discussing *information*. In *Xenotheka*, *information* and *data* are two overlapping clouds with different atmospheres and diverse conceptual spaces. They articulate a similar idea in distinct manners. Their protagonists—our characters—have particular styles and languages in which they

88 From now on, we will refer to these actors in the abbreviated forms as indicated.

express themselves. The form of discussion changes in accordance with the speakers. While discussing *information* in the First Act, each actor had a very specific approach to the subject; some were more unique in their thinking but broader in their scope, others were working with theories. *Serres_G*, for example, was exceptional in his approach and very broad in his scope, while *Brillouin_SIT* was focused on challenging theories in a formal way. Each required more space and concentration to express his thoughts. The assumption is that when gathered around *data*, the protagonists won't seem to be interested in refined formal approaches. Their interest lies elsewhere. They are using different strategies to promote rather than challenge an idea. They are more willing to express their individual readings of the topic, and to debate it in detail. Indexes around *data* are more applied and crisp, and we therefore presume it is easier to change their contexts in a fast manner and still to communicate.○2.3

The play proceeds with its standardised introduction of the characters. The formalities will be accompanied with a profile of an imagined scenario, which we based on the articulations of the actors' faces in the context of *Xenotheka* and on the structure of each book.⁸⁹ This is a part of the process of communication between the library, the actors, and us. It is artificially staged.

Let us meet the actors.

KNOWING EVERYTHING

Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies by Geoffrey West, 2017:

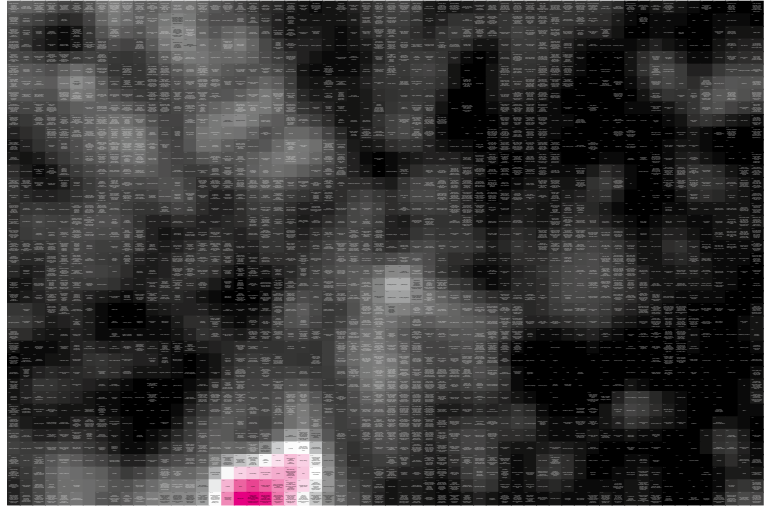
city → 933, scale → 782, life → 482, time → 465, size → 390, system → 385, year → 383, increase → 365, network → 363, energy → 340, company → 339, person → 322, growth → 318, social → 303, just → 299, law → 294, rate → 287, large → 281, new → 277, use → 272, numb → 260, theory → 257, like → 249, data → 249, great → 249, long → 227, example → 218, power → 216, science → 209, lead → 205, live → 201, small → 199, understand → 198, result → 194, structure → 182, way → 179, cell → 178, need → 177, think → 177, organism → 171, change → 170, work → 168, dynamic → 167, process → 166, age → 166, world → 164, innovation → 163, big → 163, urban → 162, individual → 162

West_S plays a protagonist and an advocate of universal laws. With a strong interest in growth, innovation, sustainability, and the pace of life, *West_S* is searching for a measure of everything. His focus is on *cities* and *scaling laws*, the *big picture* with a clear programme. He looks like a firm and confident character who seems to have no doubts. He is always in a good mood.

In the context of the library, his face appears concentrated on *data*, *scale*, and *growth*.○2.18○2.19 For *West_S*, these indexes give an appearance to *prediction*, *metrics*, *routine*. They are *enormous*,

⁸⁹ Here, we refer to the titles of books, their chapters, and subchapters.

physical, and biological. ○2.19 He doesn't want to speculate; he wants to measure, understand, and act. With his clear pragmatics of scaling laws, *West_S* is looking for the scale of everything in order to generate a master plan. He lives in linear time, always in the present moment. Time serves him; he uses it to predict future events.



○2.18

Face of *West_S*, rendering_03_RW_4060_r_50it21d.

0 1

THE CHRONICLER

The Second Digital Turn, Design Beyond Intelligence by Mario Carpo, 2017:

design → 244, digital → 240, use → 230, data → 185, time → 184, new → 181, technology → 169, today → 139, science → 127, computer → 123, make → 121, way → 117, print → 113, good → 112, modern → 110, know → 97, base → 95, architecture → 95, point → 94, search → 93, tool → 93, need → 90, alberti → 89, object → 88, work → 86, model → 84, process → 82, image → 82, technical → 81, history → 80, early → 80, mass → 78, numb → 74, machine → 74, human → 72, long → 70, cost → 70, example → 65, start → 64, curve → 63, logic → 63, just → 63, build → 63, theory → 62, mathematical → 61, like → 61, art → 61, book → 61, architectural → 61, computational → 60

Carpo_SDT plays the chronicler. By always looking backwards—but not too far back—he accounts for an immediate past of present-day digital architecture. *Carpo_SDT* is focused on the *digital design* in the age of *data*. For him, it is about *technology*, *science*, *computers*, *architecture*, and he calls it *Design Beyond Intelligence*.⁹⁰ As a manifestation of a new kind of science⁹¹ in

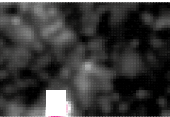
⁹⁰ To relate it back to the First Act, we will ask a question: what would this mean in the context of *Seres_G*'s notion of intelligence, where intelligence coexists with the universe?

⁹¹ *A New Kind of Science* is a best-selling, controversial book by Stephen Wolfram. See Stephen Wolfram, *A New Kind of Science*, First Edition (Champaign, IL: Wolfram Media, 2002).

n1877622	n1879626	n1879611	n188063	n188162	n188262	n1883638
unfold, maturity, materialize, DYNAMIC , underlie, frivolity, implementation, passivity, cohesion, redistribute, different...	literally, unpredictable, definitely, surface, tour, materially, partition, jump, facet, inexorably, mesh, advent...	imaginable, redefine, tool, inflate, rotate, interestingly, hinge, infiltrate, instantaneously, short...	invisibly, reorient, lifespan	philosophy, epistemology	socratics, agnosticism	bundle, inanimate, caricature, rift, pejorative, socratic, hammer, goblet, underdate, anthropocentric, scientism, artw...
n193766	n193869	n193964	n194068	n194164	n1942618	n1943627
thread, hedge, algorithm, looseness, differentially, silo	crash, switch, unsettle, mathematically, does, skew, shuttle, negotiable, palimpsest	model, container, fabric, passively	temporality, symmetrically, anthropology, monism, boyle, shapin, postmoderns, premoderns	disagreement, disagree, chemist, indices	entity, causal, ontology, essentialism, billiard, clarke, realist, debut, reductionism, zebra, eidos, attract...	realism, continental, relational, cryptic, latour, intentionality, whitehead, interchangeably, unortho...
n199761	n199862	n199964	n200064		n200264	
endpoint	improbable, passerby	mathematical, originality, mathematics, reciprocate	actively, stake, immaterial, quasi		euler, rightness, uranium, invariants	
n205762		n205965	n206068	n206167		n206363
summation, euclidian		perennial, receptive, methodical, bifurcation, compactness	eradicate, formality, substantiate, modelled, gratuitous, disturbingly	purport, mentality, stasis, commensurate, exhaustively, transcription, realising		additive, alphabetical, numeric
n211764	n211862	n211963	n2120619	n2121613	n212261	n212361
confluence, virginal, monotheism, harlequin	scenography, bifurcate	parasite, anarchical, stylus	michel, priceless, panoramic, eradication, occident, conciliate, archetypical, architectonic, uncounta...	iteration, sophistication, neutrality, categorically, erwin, arguably, secretive, eiffel, disrespect...	crucially	portend
n2177617	n2179619	n217966	n2180634	n218163	n218261	n218368
millennia, alloy, socrates, surveyor, crescent, agora, redress, pythagorean, Nile, archaism, geometer, unpredicta...	pyramid, algorithmic, formidably, herodotus, concordance, indeterminism, federate, percolate, polytheism, ion...	sieve, maximally, transportable, intemperate, anamnesis, thales	finesse, anarchic, solstice, invariance, massively, generalise, vicarious, generational, ptolemaic, min...	inverse, quantifiable, galactic	darwinian	data, regardless, cellular, inspirational, galileo, coincidentally
n223764		n223961	n224061	n224163	n224261	n2243638
geometry, diagonal, euclid, hilbert		rosetta	biochemistry	physic, measurable, biosphere	pulsate	size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, gro...
	n229861	n229961	n230061	n230163	n230266	n2303615
	invariant	metric	sapiens	quantify, physicist, commonality	pitfall, conceivably, amusingly, viscosity, rainfall, interrelationship	huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, eleph...
n2357649	n235863	n235961	n2360693	n2361661	n2362693	n2363662
spectrum, maxwell, fluctuation, thermodynamics, wiener, coefficient, conduction, cos, cybernetics, reliability, volt...	meteorologist, ontogenetic, meteorology	astrophysics	biology, span, quantitative, naively, mechanistic, approximately, whale, mortality, metabolism, genome, kilometer, ecosys...	biologist, idealize, straightforwardly, trillion, physicality, reset, predictably, fission, bacterium, mammoth, faucet, cal...	cell, reminiscent, marvelous, prelude, trig, symbol, activate, oversimplification, cube, composer, logician, c...	myriad, provocative, prime, reliably, swirl, pinpoint, murky, brain, elusive, microscopic, amazingly, untold, analogue, ch...

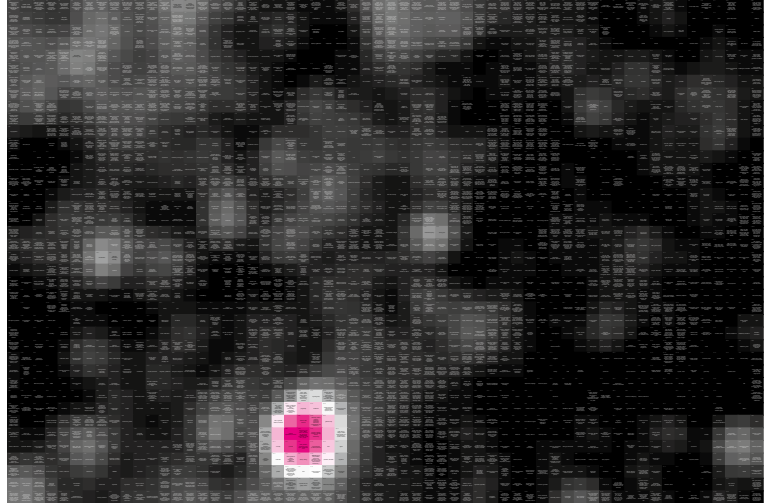


02:19 0 1
 Face of *West_S*- zoom to the cloud of indexes surrounding the index of *biology*, rendering_03_RW_4060_r_50it21d.



architecture, *Carpo_SDT* observes and describes a phenomenon which he encapsulates in *The Second Digital Turn*.

Under his spotlight, *Xenotheka* exhibits a single strong glare.○2.20 With *Carpo_SDT*, design as a concept starts to talk with indexes of computation, data, computer, and digital.○2.21 The atmosphere in his cloud carries the mood of applications and applied thinking: scan, keyboard, processor, numeric, software, interface.○2.21 As a chronicler of the digital and immediate past, *Carpo_SDT* is commenting on and giving credit to the protagonists of *Design Beyond Intelligence*. He addresses and celebrates them as the digital avant-garde.



○2.20

Face of *Carpo_SDT*, rendering_03_RW_4060_r_50it21d.

0 1

DIARY OF THE FUTURE

Being Digital, by Nicholas Negroponte, 1995:

computer → 350, bit → 304, like → 217, use → 208, person → 208, time → 202, digital → 188, year → 136, good → 133, information → 128, system → 118, way → 114, today → 112, new → 111, just → 109, think → 105, make → 105, call → 104, television → 100, need → 92, line → 89, machine → 89, look → 86, know → 86, telephone → 85, work → 84, world → 84, change → 83, interface → 80, different → 80, human → 79, example → 78, move → 78, display → 77, image → 77, mean → 77, future → 75, video → 75, small → 74, come → 73, media → 73, say → 70, company → 69, home → 67, data → 67, million → 65, fact → 63, book → 63, point → 62, word → 62

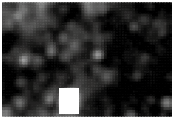
Negroponte_BD leads a digital life in form of a book. This book is a fictional and optimistic diary of the future where *bits*, *atoms*, and *interfaces* tell *Digital Fables and Foibles*.⁹² The *bit* always wins

⁹² See, Negroponte, *Being Digital*, ebook, loc 2.0/380.

n182a3	n182a16	n182a1	n182a3	n182a1	n182a2	n182a3
fragility, bygone, classically	admittedly, fontaine, academia, foreignness, simone, proposition, naive, theodicy, zola, epistemologist, ecole, superhigh...	allusive	contact, clutter, kaleidoscopic	mediocre	caption, schlemmer	observatory, pilotis, yoshizaka
n188a2	n188a2	n188a38	n188a18	n188a1	n188a25	n1887a8
philosophy, epistemology	socrates, agnosticism	bundle, inanimate, caricature, rift, pejorative, socratic, hammer, gabriel, underrate, anthropocentric, scientism, artw...	orient, apple, unclear, james, allure, caveat, flatness, obsolescence, unconvincing, unstated	etymologically	treatise, illiterate, keystone, authorization, ptolemy, readership, confusingly, watermark, geneva, iconoclas...	illustration, protestant, epitome, didactic, erudite, raphael
n194a4	n194a16	n194a27	n194a1	n194a1	n194a8	n194a3
disagreement, disagree, chemist, indices	entity, causal, ontology, essentialism, billiard, clark, realist, debut, reductionism, zebra, eidos, attract...	realism, continental, relational, cryptic, latour, intentionality, whitehead, interchangeably, unortho...	poignantly	humanistic	manual, detriment, standardize, standardization, synopsis, pietro	append, memorize, thumbelina
	n288a4		n288a3	n288a21	n288a1	
	euler, rightness, uranium, invariants		retrieve, quirk, retrieval	famously, pristine, notation, identically, trademark, authorship, postindustrial, cola, absentia, c...	geometrically	
n288a7		n288a3	n288a18	n288a8		n2887a12
purport, mentality, stasis, commensurate, exhaustively, transcription, realising		additive, alphabetical, numeric	laboriously, font, printer, digital, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, ...	emulate, software, snapshot, unwieldy, dentist, interactivity		delta, diction, omega, orestes, alpha, gamma, iota, tau, kappa, rho, epsilon, omicron
n212a13	n212a1	n212a1	n212a7	n212a4	n212a1	n2127a1
iteration, sophistication, neutrality, categorically, erwin, arguably, secretive, eiffel, disrespect...	crucially	portend	laser, prioritize, proprietary, chris, byte, optimization, xerox	scan, keyboard, processor, desktop	beta	sigma
n218a3	n218a1	n218a6	n218a2	n218a23	n218a2	n2187a1
inverse, quantifiable, galactic	darwinian	data, regardless, cellular, inspirational, galileo, coincidentally	laptop, analog	computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, ...	parlance, calculator	nighttime
n224a3	n224a1	n224a38	n224a1	n224a3	n224a8	n2247a2
physic, measurable, biosphere	pulsate	size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, gro...	ceos	messy, randomly, incremental	detection, lethal, prologue, eponymous, inordinate, charlatan, greco, lingua	psychologist, colorful
n238a3	n238a6	n238a15	n238a4	n238a22	n238a2	n2387a2
quantify, physicist, commonality	pitfall, conceivably, amusingly, viscosity, rainfall, interrelationship	huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, eleph...	sophisticate, dot, gauge, burner	predict, underestimate, arrogance, winner, practitioner, deviation, uncertainty, tunnel, ingrain, outland...	discoverer, subgroup	mathematician, grossly

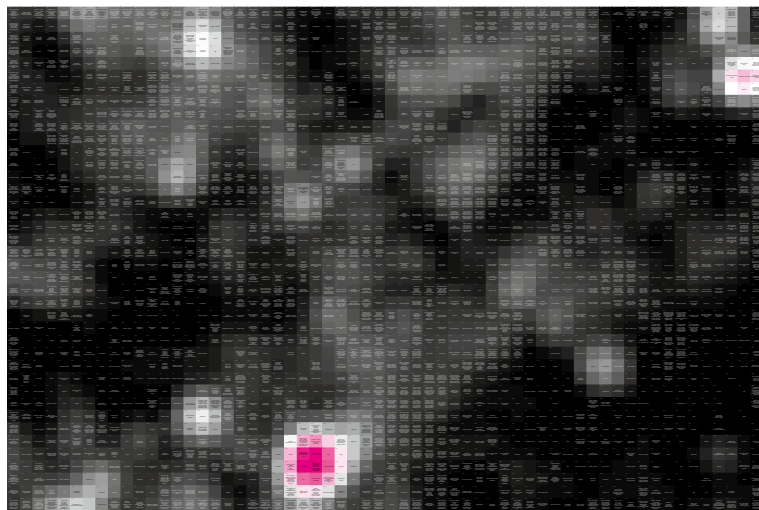


02.21 Face of *Carpo_SDT* - zoom to the cloud of indexes surrounding the index of *digital*, rendering_03_RW_4060_r_50it21d_words_vertex.



in his stories. *Negroponte_BD* “[Offers] profound insight and surprising visions of the digital future.”—*The New York Times*.⁹³ Unlike *Carpo_STD* who chronicles the past, *Negroponte_BD* produces applied fantasies about the future: “*Daily Me*.”⁹⁴

Negroponte_BD's daily fictions speculate about technology. They talk about *computers, videos, interfaces, and everything digital* in the context of *lasers, data, software, emulations, laptops, and processors*.^{92.22}^{92.23} In his diary of the future, *Negroponte_BD* imagines and places not yet existing digital objects in fictional scenarios where they become animated. They start to transmit messages. His stories are flavoured with optimism, entrepreneurship, prediction, and technology. He creates an atmosphere of an applied and branded future. His passion is science fiction.



^{92.22} ⁰ ¹
Face of *Negroponte_BD*, rendering_03_RW_4060_r_50it21d.

MEDITATION ON SELF

I Am A Strange Loop by Douglas Hofstadter, 2007:

just → 564, **brain** → 492, **think** → 393, like → 372, **person** → 353, level → 324, mean → 300, say → 298, word → 290, **loop** → 286, **know** → 281, make → 275, come → 265, **human** → 264, thing → 260, self → 248, way → 247, time → 244, **symbol** → 238, world → 230, idea → 219, numb → 217, number → 214, **inside** → 213, feel → 209, **soul** → 204, call → 202, strange → 188, different → 187, **pattern** → 180, **life** → 179, fact → 176, point → 176, kind → 176, book → 172, go → 168, take → 163, **system** → 162, consciousness → 162, year → 161, use → 155, give → 155, **experience** → 155, **physical** → 154, question → 152, long → 149, far → 148, **mind** → 145, **sense** → 143, mat → 138

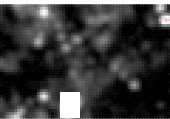
⁹³ Negroponte, *Being Digital*, ebook, loc 497.0/629.

⁹⁴ *Being Digital* also introduced the 'Daily Me' concept of a virtual daily newspaper customised for an individual's tastes. See, Negroponte, *Being Digital*.



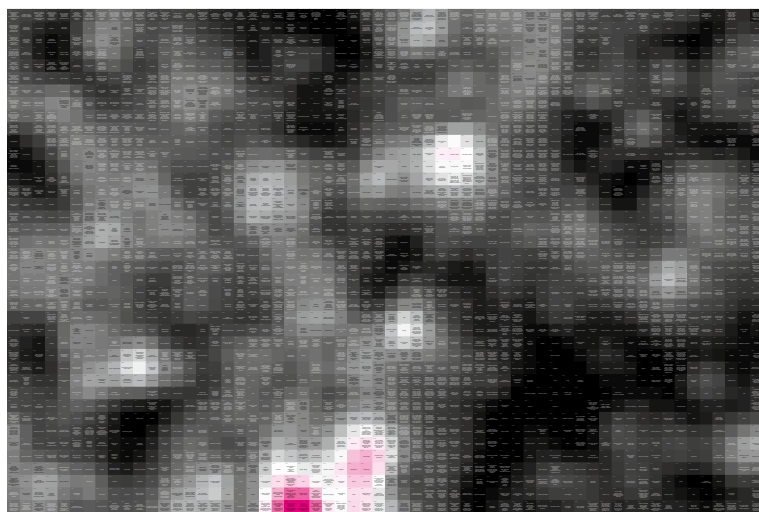
n1882a2	n1883a38	n1884a18	n1885a1	n1886a25	n1887a6	n1888a2
socratics, agnosticism	bundle, inanimate, caricature, rift, pejorative, socratic, hammer, gabriel, underate, anthropocentric, scientism, artw...	orient, apple, unclear, james, allure, caveat, finesses, obsolescence, unconvincing, unstated	etymologically	treatise, illiterate, keystone, authorization, ptolemey, readership, confusingly, watermark, geneva, iconoclas...	illustration, protestant, epitome, didactic, erudite, raphael	builder, venice
n1943a36	n1943a27	n1944a1	n1945a1	n1946a6	n1947a3	n1948a5
entity, causal, ontology, essentialism, billiard, clarke, realist, debut, reductionism, zebra, eidos, attract...	realism, continental, relational, cryptic, latour, intentionality, whitehead, interchangeably, unortho...	poignantly	humanistic	manual, detriment, standardize, standardization, synopsis, pietro	append, memorize, thumbelina	illustrate, copy, ban, blueprint, sparsely
n2002a4		n2004a3	n2005a21	n2006a1		n2008a1
euler, rightness, uranium, invariants		retrieve, quirk, retrieval	famously, pristine, notation, identically, trademark, authorship, postindustrial, cola, absentia, c...	geometrically		performer
	n2003a3	n2004a38	n2005a8		n2007a12	n2008a2
	additive, alphabetical, numeric	laboriously, font, printer, DIGITAL, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, ...	emulate, software, snapshot, unwieldy, dentist, interactivity		delta, diction, omega, orestes, alpha, gamma, iota, tau, kappa, rho, epsilon, omicron	elegiac, eta
n2122a1	n2123a1	n2124a7	n2125a4	n2126a1	n2127a1	
crucially	portend	laser, prioritize, proprietary, chris, byte, optimization, xerox	scan, keyboard, processor, desktop	beta	sigma	
n2182a1	n2183a8	n2184a2	n2185a23	n2186a2	n2187a1	n2188a1
darwinian	data, regardless, cellular, inspirational, galileo, coincidentally	laptop, analog	COMPUTER, airline, mail, readable, packet, lab, appliance, VIDEO, ceo, synchronous, fiber, INTERFACE, concurrently, ...	parlance, calculator	nighttime	unsuspected
n2242a1	n2243a38	n2244a1	n2245a3	n2246a8	n2247a2	n2248a1
pulsate	size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, gro...	ceos	messy, randomly, incremental	detection, lethal, prologue, eponymous, inordinate, charlatan, greco, lingua	psychologist, colorful	ailment
n2302a8	n2303a15	n2304a4	n2305a22	n2306a2	n2307a2	n2308a1
pitfall, conceivably, amusingly, viscosity, rainfall, interrelationship	huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, eleph...	sophisticate, dot, gauge, burner	predict, underestimate, arrogance, winner, practitioner, deviation, uncertainty, tunnel, ingrain, outland...	discoverer, subgroup	mathematician, grossly	bonus
n2362a93	n2363a62	n2364a67	n2365a43	n2366a15	n2367a11	n2368a1
cell, reminiscent, marvelous, prelude, trig, symbol, activate, oversimplification, cube, composer, logician, c...	myriad, provocative, prime, reliably, swirl, pinpoint, murky, brain, elusive, microscopic, amazingly, untold, analogue, ch...	concoct, effortlessly, nutshell, flip, russell, hopefully, berry, can, redness, quibble, microphone, setup, c...	patently, skeptical, skepticism, sensational, demoralize, massage, fallacy, diatribe, overestimate, explaina...	cancer, odds, gamble, roulette, gauss, galilei, disc, relativity, embankment, gravitational, lorentz, ...	likelihood, toulouse, gambler, jakob, pascal, pacioli, blaise, bayes, fermat, cardano, graunt	eerie

0.2.23 0 1
Face of *Negroponte_BD* – zoom to the cloud of indexes surrounding indexes of *computer* and *inter-*
face, rendering_03_RW_4060_r_50it21d.



Hofstadter_IASL plays a *Strange Loop* in this play. He meditates on the self and reappears as the rearticulated version of *Hofstadter_GEB*. The former is more concerned with *data*, the latter with *information*. Both are always consistent in their interest in the *self* and its *symbols*, *patterns*, and *experiences*. They are in a constant *loop* around self-reference. Actually, *Hofstadter_IASL* is a strange loop, and he likes it.

The loop creates a paradox. *Hofstadter_IASL* doesn't want to leave the paradox. He is the logical paradox. His face celebrates *models*, *self-reference*, and *strange loops*. His role in this drama is a formal one and, at the same time, a romantic meditation on the self. His cloud is familiar; the atmosphere is slightly different: *data*, *symbol*, *brain*, *sophistication*, *puzzle*, and *analogy*. *Hofstadter_IASL* always appears in iterations.



0.2.24 0 1
Face of *Hofstadter_IASL*, rendering_03_RW_4060_r_50it21d.

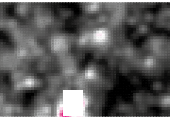
...

The introductions are over. The four are sitting at their table. Is this the most suitable group to discuss the problems and merits of *data*? This is certainly not the right question. The assumption is that by placing them on stage we will instigate an interesting story around *data* and be able to relate it back to *information*. Let us remember that the library and their interest in *data* is what keeps these actors and their characters together. This is the artificial context that the actors will try to challenge and enrich. Imagined scenarios are here to get to know the actors and create tensions and expectations before the discussion starts. Let us recapitulate the imagined scenarios. Each actor has his own direction and time. *West_S* is looking at the present and trying to understand it. *Carpo_SDT* is observing the immediate past, commenting and accounting. *Negroponte_DB* is interested in the future; he is inventing fictional scenarios and waiting for them to become

n183a38	n1884a18	n1885a1	n1886a25	n1887a6	n1888a2	n1889a6
bundle, inanimate, caricature, rift, pejorative, socratic, hammer, gabriel, underrate, anthropocentric, scientism, artw...	orient, apple, unclear, james, allure, caveat, flatness, obsolescence, unconvincing, unstated	etymologically	treatise, illiterate, keystone, authorization, ptolemy, readership, confusingly, watermark, geneva, iconoclas...	illustration, protestant, epitome, didactic, erudite, raphael	builder, venice	collection, artist, art, paint, prototype, crystal
n1943a27	n1944a1	n1945a1	n1946a8	n1947a3	n1948a5	n1949a8
realism, continental, relational, cryptic, latour, intentionality, whitehead, interchangeably, unortho...	poignantly	humanistic	manual, detriment, standardize, standardization, synopsis, pietro	append, memorize, thumbelina	illustrate, copy, ban, blueprint, sparsely	recognizable, route, mimic, suitably, poussin, porbus
	n2084a3	n2085a21	n2086a1	n2088a1	n2089a41	
	retrieve, quirk, retrieval	famously, pristine, notation, identically, trademark, authorship, postindustrial, cola, absentia, c...	geometrically	performer	unlikely, record, intelligence, plus, pair, straightforward, metaphorical, map, interchangeable, needless, backwa...	
n2083a3	n2084a38	n2085a6		n2087a12	n2088a2	n2089a32
additive, alphabetical, numeric	laboriously, font, printer, digital, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, ...	emulate, software, snapshot, unwieldy, dentist, interactivity		delta, diction, omega, orestes, alpha, gamma, iota, tau, kappa, rho, epsilon, omicron	elegiac, eta	upside, trick, screen, NUMBER , puzzle, proven, incredibly, intangible, inking, humorous, pop, fluent, st...
n2123a1	n2124a7	n2125a4	n2126a1	n2127a1		n2128a1
portend	laser, prioritize, proprietary, chris, byte, optimization, xerox	scan, keyboard, processor, desktop	beta	sigma		inadvertently
n2183a6	n2184a2	n2185a23	n2186a2	n2187a1	n2188a1	n2189a1
data, regardless, cellular, inspirational, galileo, coincidentally	laptop, analog	computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, ...	parlance, calculator	nighttime	unsuspected	unthinkingly
n2243a38	n2244a1	n2245a3	n2246a8	n2247a2	n2248a1	n2249a1
size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, gro...	ceos	messy, randomly, incremental	detection, lethal, prologue, eponymous, inordinate, charlatan, greco, lingua	psychologist, colorful	ailment	genuineness
n2383a15	n2384a4	n2385a22	n2386a2	n2387a2	n2388a1	n2389a4
huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, eleph...	sophisticate, dot, gauge, burner	predict, underestimate, arrogance, winner, practitioner, deviation, uncertainty, tunnel, ingrain, outland...	discoverer, subgroup	mathematician, grossly	bonus	wishful, madonna, siblings, gott
n2383a12	n2384a87	n2385a43	n2386a13	n2387a11	n2388a1	n2389a24
myriad, provocative, prime, reliably, swirl, pinpoint, murky, BRAIN , elusive, microscopic, amazingly, untold, analogue, ch...	concoct, effortlessly, nutshell, flip, russell, hopefully, berry, can, redness, quibble, microphone, setup, c...	patently, skeptical, skepticism, sensational, demoralize, massage, fallacy, diatribe, overestimate, explaina...	cancer, odds, gamble, roulette, gauss, galilei, disc, relativity, embankment, gravitational, lorentz, ...	likelihood, toulouse, gambler, jakob, pascal, pacioli, blaise, bayes, fermat, cardano, graunt	eerie	childhood, anne, biographer, pater, haus, genitals, restful, piero, equestrian, cosa, supernunuate, mir, animism, vl...



02.25 0 1
 Face of *Hofstadter_IASL* – zoom to the cloud of indexes surrounding indexes of *symbols*, *tricks*, and *puzzles*, rendering_03_RW_4060_r_50it21d.



true. The fourth actor, *Hovstadter_IASL*, is a bit different and more complicated. He is 'out of time' and he meditates on the self. This is his second iteration, whereas *Hofstadter_GEB* was the first.

Let us hear what the actors have to say and how they will react to the imagined scenarios and the given stage.

...

SCENE I: LAW, FANTASY, MEDITATION, AND CHRONICLES

One table and four actors. The table is full of data. The atmosphere is calm; actors are playing with data. Some are trying to make sense of it, others articulate meaning, but each one performs in his own way. Indexes are shifting all around the table. Clouds of data are forming; the atmosphere is fluctuating. The discussion starts. *West_S*, after he has finished analysing and sorting data into tables, starts talking by introducing his programme which wants to *Know Everything*.

West_S:

The existence of these remarkable regularities strongly suggests that there is a common conceptual framework underlying all of these very different highly complex phenomena and that the dynamics, growth, and organization of animals, plants, human social behavior, cities, and companies are, in fact, subject to similar generic "laws."

This is the main focus of this book. I will explain the nature and origin of these systematic scaling laws, how they are all interrelated, and how they lead to a deep and broad understanding of many aspects of life and ultimately to the challenge of global sustainability. Taken together, these scaling laws provide us with a window onto underlying principles and concepts that can potentially lead to a quantitative predictive framework for addressing a host of critical questions across science and society.

*This book is about a way of thinking, about asking big questions, and about suggesting big answers to some of those big questions.*⁹⁵

Regularities, common conceptual frameworks, similar generic laws, big questions, and big answers across both science and society. A very strong and bold statement. There seems to be no doubt about how to approach the world for West_S. The other three characters don't seem to be completely convinced. It is almost too much to begin with. How do you follow this? After a moment of silence, Carpo_SDT proposes and advocates for a new kind of science in a polite way,⁹⁶ with which he wants to challenge West_S's holistic approach and keep at least a few distinctions.

⁹⁵ West, *Scale*, ebook, loc 18.9/1064.

⁹⁶ Wolfram, *A New Kind of Science*.

Carpo_SDT:

*But while computers do not need theories, we do. We should not try to imitate the iterative methods of the computational tools we use because we can never hope to replicate their speed. Hence the strategy I advocated in this book: each to its trade; let's keep for us what we do best.*⁹⁷

Carpo_SDT goes further. He wants an inversion from top-down, to bottom-up. Instead of generic laws promoted by *West_S*, *Carpo_SDT* goes the other way. He wants to ask the crowds. But his moves are just the other side of the same coin. *Carpo_SDT* hopefully looks at the crowd, but continues with a melancholic voice.

Carpo_SDT:

*Instead, tragically, the opposite seems to be happening. In all aspects of contemporary culture, and most remarkably in economics and politics, theories today are universally reviled. With theories, all the makers and markers of theory, and many ingredients of theory-making, are being equally and drastically demoted: facts, observation, verification, demonstration, proof, experts, expertise, experience, competence, science, scholarship, mediation, argument, political representation, and so on—in no particular order. Why waste time to argue? Ask the crowds. Why waste time on a theory? Just try it and see if it works. But computational simulations are made of bits and bytes, and can be rerun at will; the next atomic blast in physical reality may not allow for a retrieval.*⁹⁸

Carpo_SDT, by pushing in the opposite direction of *West_S*, ends up with a similar message. Don't waste your time on theory; the crowds will show you the way. *West_S* looks at him and makes a sarcastic remark in a half-voice and in a half-friendly manner: *Is this the Second Digital Turn? Ceding the law to the crowd?*

During this odd moment of silence, *Negroponste_BD* makes his appearance by adding another inversion. Instead of describing the immediate past like *Carpo_SDT*, he starts talking about the immediate future where a lot of clear lines start to blur. He is reading from his diary of the future.

Negroponste_BD:

Personal computers will make our future adult population simultaneously more mathematically able and more visually literate. Ten years from now, teenagers are likely to enjoy a much richer panorama of options because the pursuit of intellectual achievement will not be tilted so much in favor of the bookworm, but instead cater to a wider range of cognitive styles, learning patterns, and expressive behaviors. The middle ground between work and play will be enlarged

⁹⁷ Carpo, *The Second Digital Turn*, ebook, loc 394.5/409.

⁹⁸ Carpo, *The Second Digital Turn*, ebook, loc 394.5/409.

dramatically. The crisp line between love and duty will blur by virtue of a common denominator—being digital. The Sunday painter is a symbol of a new era of opportunity and respect for creative avocations—lifelong making, doing, and expressing. When retired people take up watercolors today, it is like a return to childhood, with very different rewards from those of the intervening years. Tomorrow, people of all ages will find a more harmonious continuum in their lives, because, increasingly, the tools to work with and the toys to play with will be the same. There will be a more common palette for love and duty, for self-expression and group work.

Computer hackers young and old are an excellent example. Their programs are like surrealist paintings, which have both aesthetic qualities and technical excellence. Their work is discussed both in terms of style and content, meaning and performance. The behavior of their computer programs has a new kind of aesthetic. These hackers are the forerunners of the new e-xpressionists.⁹⁹

Both *Carpo_SDT* and *Negroponete_BD*, one by looking at the past, the other by predicting the future, advocate the same epistemological turn. Unlike *West_STD*, who is trying to understand the present, this is a new era for them which is beyond theory, with a new kind of science, a new kind of aesthetics of new 'e-xpression-ists'. All these are interesting indicators of the change that arises through *being digital*. All the grounds are shaken up; everything is new, but somehow this conversation doesn't seem to fly off the ground. Discussions still revolve around theories, crowds, shifts, and what it means to be digital. What we are interested in with a *Play Among Books*, is playing with the digital and not reasoning about it. But maybe playing with the digital is about playing with different kinds of thinking and reasoning.

Hofstadter_IASL starts to meditate. He turns the conversation onto itself. To reflect on the new situation, he places *Carpo_SDT*'s crowds and *Negroponete_BD*'s 'e-xpressionists' in a strange loop. He asks himself loudly: How can these two images compose a new digital I?

Hofstadter_IASL:

[...] the idea I am proposing here is that since a normal adult human brain is a representationally universal "machine", and since humans are social beings, an adult brain is the locus not only of one strange loop constituting the identity of the primary person associated with that brain, but of many strange-loop patterns that are coarse-grained copies of the primary strange loops housed in other brains. Thus, brain 1 contains strange loops 1, 2, 3, and so forth, each with its own level of detail. But since this notion is true of any brain, not just of brain 1, it entails the following

99 Negroponete, *Being Digital*, ebook, loc 338.6/380.

flip side: Every normal adult human soul is housed in many brains at varying degrees of fidelity, and therefore every human consciousness or “I” lives at once in a collection of different brains, to different extents.

There is, of course, a “principal domicile” or “main brain” for each particular “I”, which means that there remains a good deal of truth to simple, commonsensical statements like “My soul is housed in my brain”, and yet, close to true though it is, that statement misses something crucial, which is the idea perhaps strange-sounding at first, that “My soul lives to lesser extents in brains that are not mine.”¹⁰⁰

Hofstadter_IASL's digital I consists of many strange loops not necessarily carried by the same body. The *I* lives at once as an individual and a group. The *digital I*, in terms of *Carpo_SDT*, would be the crowd, and for *Negroponite_BD* an e-xpressionist. *Hofstadter_IASL* continues to further elaborate on the *digital I* by trying to relate the notion of a strange loop to infinite flows of raw data.

Hofstadter_IASL:

You and I are mirages who perceive themselves, and the sole magical machinery behind the scenes is perception—the triggering, by huge flows of raw data, of a tiny set of symbols that stand for abstract regularities in the world. When perception at arbitrarily high levels of abstraction enters the world of physics and when feedback loops galore come into play, then “which” eventually turns into “who”. What would once have been brusquely labeled “mechanical” and reflexively discarded as a candidate for consciousness has to be reconsidered.¹⁰¹

With *Hofstadter_IASL*, which turns into *who*, and back. An object can become a subject. The *digital I* consists of crowds and many loops in different brains. What was once only a mechanism, with big data and strange loops could now be reconsidered as conscious. But this new consciousness is still tied to an *I*. In our understanding, this is just a reflection of the old *I*. A very different world was opened by *Serres_G* in the second part of the First Act when he proposed that intelligence coexists with the universe. That intelligence doesn't require an *I*. It is different. With *Hofstadter_IASL*, a mechanism becomes a new *I*. There is a direct competition between a mechanical and a biological *I*. Nevertheless, like him, we (ourselves) believe that the dichotomies in strange loops and flows of data become something else. They change by articulating each other. A dichotomy translates itself into a spectrum. In the digital, this can potentially happen on many levels of abstraction, in different disciplines and fields of knowledge and life. It is a different ground. *Negroponite_BD* joins the conversation by giving an example of this integrating phenomenon.

¹⁰⁰ Hofstadter, *I Am a Strange Loop*, ebook, loc 676.0/1088.

¹⁰¹ Hofstadter, *I Am a Strange Loop*, ebook, loc 928.4/1088.

Negroponete_BD:

Either way, a fundamental editorial change takes place, because depth and breadth are no longer either/or. When you buy a printed encyclopedia, world atlas, or book on the animal kingdom, you expect very general and broad coverage of many far-ranging topics. By contrast, when you buy a book on William Tell, the Aleutian Islands, or kangaroos, you expect an “in depth” treatment of the person, place, or animal. In the world of atoms, physical limits preclude having both breadth and depth in the same volume—unless it’s a book that’s a mile thick.

In the digital world, the depth/breadth problem disappears and we can expect readers and authors to move more freely between generalities and specifics. In fact, the notion of “tell me more” is very much part of multimedia and at the root of hypermedia.¹⁰²

The generic can integrate anything. Carpo_SDT seems to agree with Negroponete_BD’s *tell me more*. Not only can one move freely between many generalities and different specifics, but one can also, as Carpo_SDT points out, simulate them *ad infinitum*. He continues in the same direction, by trying to explicate how these procedures work and by placing them at the tipping point of the second digital turn.¹⁰³

Carpo_SDT:

*The new kind of science that is inherent in most of today’s AI applications, and at the core of what I call the second digital turn, is a different matter altogether. In our traditional way of thinking, facts are laboriously collated, sifted, compared, and selected, then generalized and formalized: the apex of this sorting process is a theory, often compressed into mathematical formulas, which we use to predict similar events when similarly describable. Computers don’t do that; they search for a precedent. We, in turn, use computation to simulate as many fictional precedents as needed when no actual one is on record, and when we do not have the time to compare some of these results ourselves, we ask computers to randomly test as many as possible, *ad infinitum* if necessary, knowing that at some point we shall find one or two that will more or less do what we need.¹⁰⁴*

But what happens when anyone is able to simulate an infinity of generalities and integrate any specificity? Koolhaas calls this the

¹⁰² Negroponete, *Being Digital*, ebook, loc 110.5/380.

¹⁰³ Here Carpo conceptually refers to the article by Chris Anderson, The End of Theory. See, Chris Anderson, “The End of Theory: The Data Deluge Makes the Scientific Method Obsolete,” *Wired*, June 23, 2008, <https://www.wired.com/2008/06/pb-theory/>.

¹⁰⁴ Carpo, *The Second Digital Turn*, ebook, loc 391.5/409.

'generic condition'.¹⁰⁵ Regardless of whether those are theories or computational simulations, we are flooded by their sheer volume. As *Carpo_SDT* got lost in the ever-growing soup of the generic while searching for simulated *precedents*, *West_S* saw this as an opportunity to get back into the discussion and offer a solution to the problem raised by the competition between the *flood of data* and *theories* by avoiding all the differences and postulating a general law. This is where *West_S* clearly distances himself from the other three characters. He believes in the understanding of big data, while the other three are trying to think about the phenomena that the digital brings into the discussion.

West_S:

*Data are good and more data are even better—this is the creed that most of us take for granted, especially those of us who are scientists. But this belief is implicitly based on the idea that more data lead to a deeper understanding of underlying mechanisms and principles so that credible predictions and further progress in constructing models and theories can be built upon a firm foundation subject to continual testing and refinement. Data for data's sake, or the mindless gathering of big data, without any conceptual framework for organizing and understanding it, may actually be bad or even dangerous. Just relying on data alone, or even mathematical fits to data, without having some deeper understanding of the underlying mechanism is potentially deceiving and may well lead to erroneous conclusions and unintended consequences.*¹⁰⁶

Negroponete_BD, instead of replying directly to *West_S*, supported by *Carpo_SDT* and *Hofstadter_IASL*, drifts again into one of his fantastic scenarios of how to be digital.

Negroponete_BD:

Computing is not about computers any more. It is about living. The giant central computer, the so-called mainframe, has been almost universally replaced by personal computers. We have seen computers move out of giant air-conditioned rooms into closets, then onto desktops, and now into our laps and pockets. But this is not the end. Early in the next millennium your right and left cuff links or earrings may communicate with each other by low-orbiting satellites and have more computer power than your present PC. Your telephone won't ring indiscriminately; it will receive, sort, and perhaps respond to your incoming calls like a well-trained English butler. Mass media will be redefined by systems for transmitting and receiving personalized information and entertainment. Schools will change to become more like museums and

¹⁰⁵ Rem Koolhaas, "Generic City," in *S,M,L,XL* (The Monacelli Press, 1995), 1238–70.

¹⁰⁶ *West, Scale*, ebook, loc 944.2/1064.

playgrounds for children to assemble ideas and socialize with other children all over the world. The digital planet will look and feel like the head of a pin. As we interconnect ourselves, many of the values of a nation-state will give way to those of both larger and smaller electronic communities. We will socialize in digital neighborhoods in which physical space will be irrelevant and time will play a different role. Twenty years from now, when you look out a window, what you see may be five thousand miles and six time zones away. When you watch an hour of television, it may have been delivered to your home in less than a second. Reading about Patagonia can include the sensory experience of going there. A book by William Buckley can be a conversation with him.¹⁰⁷

Among many of *Negroponete_BD*'s predictions, one is particularly interesting for this text. He ends with a sentence which, in a way, refers to a *Play Among Books*. In the context of *Xenotheka*, we would reformulate it in this way: *A book by William Buckley can become a friend*. When situated in a library and placed on stage, this book becomes an actor that we can talk to in a similar way to how we are now talking to *Negroponete_BD*. But let us keep in mind that this is not *Nicholas Negroponete* we are talking to; it is a book he wrote, a book that has a life of its own: *Negroponete_BD*. Of course they are related, but they are independent as well. Relations between relatives quite often change. We don't need to know or read this book. We just need to welcome it to our own *Xenotheka* and start communicating. By transforming, splitting, and multiplying *Xenotheka*, we can always have fresh, interesting, and new conversations with the same friend. A book is never alone; it is always a part of a library.

Hofstadter_IASL, being somehow in the same mood as *Negroponete_BD*, picks up the discussion and continues in a friendly manner, keeping his doubts for later.

Hofstadter_IASL:

This, in essence, is what the computer revolution is all about: when a certain well-defined threshold—I'll call it the "Gödel-Turing threshold"—is surpassed, then a computer can emulate any kind of machine.

This is the meaning of the term "universal machine", introduced in 1936 by the English mathematician and computer pioneer Alan Turing, and today we are intimately familiar with the basic idea, although most people don't know the technical term or concept. We routinely download virtual machines from the Web that can convert our universal laptops into temporarily specialized devices for watching movies, listening to music, playing games, making cheap international phone calls, who knows what. Machines of all sorts come to us through wires or even through the air,

¹⁰⁷ Negroponete, *Being Digital*, ebook, loc 13.8/380.

*via software, via patterns, and they swarm into and inhabit our computational hardware. One single universal machine morphs into new functionalities at the drop of a hat, or, more precisely, at the double-click of a mouse. I bounce back and forth between my email program, my word processor, my Web browser, my photo displayer, and a dozen other “applications” that all live inside my computer. At any specific moment, most of these independent, dedicated machines are dormant, sleeping, waiting patiently (actually, unconsciously) to be awakened by my royal double-click and to jump obediently to life and do my bidding.*¹⁰⁸

While *Hofstadter_IASL* talks of computers as universal machines, ones that can become any known machine and, moreover, ones that have the potential to become any machine imaginable,¹⁰⁹ *West_S* sees this phenomenon in an inverse manner. He always looks for the general. For him, the challenge is to find and articulate a grand unified theory. With *Hofstadter_IASL*, we are opening up space for many scenarios, while *West_S* generalises all the scenarios in order to be able to predict and understand. These are two radically different ways of addressing the new environment of *information, data, and computers*.

West_S:

*It's time to recognize that a broad, multidisciplinary, multi-institutional, multinational initiative, guided by a broader, more integrated and unified perspective, should be playing a central role in guiding our scientific agenda in addressing this issue and informing policy. We need a broad and more integrated scientific framework that encompasses a quantitative, predictive, mechanistic theory for understanding the relationship between human-engineered systems, both social and physical, and the “natural” environment—a framework I call a grand unified theory of sustainability. It's time to initiate a massive international Manhattan-style project or Apollo-style program dedicated to addressing global sustainability in an integrated, systemic sense.*¹¹⁰

The difference between articulations and attitudes of actors becomes more crisp. *Carpo_SDT* replies, this time directly to *West_S*, by emphasising the difference between the new science and the old. He insists on articulating the turn with the help of crowds.

Carpo_SDT:

[...] in a world where all events are recorded and retrievable, the search for an exact precedent may better predict future events than an analytic calculation of consequences

¹⁰⁸ Hofstadter, *I Am a Strange Loop*, ebook, loc 630.7/1088.

¹⁰⁹ For more on computers as any machines, see Hovestadt, “A Fantastic Genealogy of the Printable.”

¹¹⁰ West, *Scale*, ebook, loc 327.8/409.

deducted from general causal laws, rules, or formulas. Indeed, in many cases the search for a social precedent (rather than for a material one, as seen in chapter 2, section 2.4) has already replaced the traditional reliance on the rules or laws of a discipline: for example, when we choose a linguistic expression or syntagm based on the number of its Google hits, we trust the wisdom of crowds instead of the rules of grammar and syntax. Of course, the rules of grammar and syntax themselves are born out of the authority of precedent, as for the most part they formalize and generalize the regularities embedded in the collective or literary use of a language—a process that in the case of living languages unfolds over time and continues forever (the most notable exception being the invention *ex nihilo* of the rules of classical Latin in the Renaissance). But today a simple Google search on an incommensurably vast corpus of textual sources can effectively short-circuit the laborious scientific process of the constitution of the rules of a language, thus making all traditional sciences of language unnecessary. Not by science, but by search we can draw on the collective intelligence of a group, be apprised of the frequency of an event (in this instance, a linguistic occurrence within a community of speakers), and act accordingly.¹¹¹

In his reply to West_S, Carpo_SDT wants to show the benefits of replacing the rules of grammar and syntax with the wisdom of the crowd on the example of language. In other words, he goes from a setup governed by laws to one driven by data. In our opinion, what Carpo_SDT misses is that language, besides its formalisations and the crowd that informs it, has a wisdom of its own. This was discussed in Act I by Serres_G in terms of an objective intelligence and informed forms that lie in the things themselves. If we grant language its wisdom, then we are in a different environment in which we can communicate with language, which at first sounds odd, but isn't this whole play going in that direction? This *Plentiful Play* grants wisdom to language, concepts, to each of the books, and the library. We will get back to this in a moment. For now, let us continue with the play and listen to the way the discussion progresses.

'The digital empowers!,' NegroponTE_BD states enthusiastically and avoids a direct polemic with Carpo_SDT. Instead, he gives an optimistic epilogue.

NegroponTE_BD:

But more than anything, my optimism comes from the empowering nature of being digital. The access, the mobility, and the ability to effect change are what will make the future so different from the present. The information superhighway may be mostly hype today, but it is an understatement about

¹¹¹ Carpo, *The Second Digital Turn*, ebook, loc 882.8/1064.

tomorrow. It will exist beyond people's wildest predictions. As children appropriate a global information resource, and as they discover that only adults need learner's permits, we are bound to find new hope and dignity in places where very little existed before. My optimism is not fueled by an anticipated invention or discovery. Finding a cure for cancer and AIDS, finding an acceptable way to control population, or inventing a machine that can breathe our air and drink our oceans and excrete unpolluted forms of each are dreams that may or may not come about. Being digital is different. We are not waiting on any invention. It is here. It is now. It is almost genetic in its nature, in that each generation will become more digital than the preceding one. The control bits of that digital future are more than ever before in the hands of the young. Nothing could make me happier.¹¹²

While floating in the optimistic cloud composed by *Negroponte_BD*, *Hofstadter_IASL* continues to meditate, enjoying his loops.

Hofstadter_IASL:

*The key problem is, it seems to me, that when we try to understand what we are, we humans are doomed, as spiritual creatures in a universe of mere stuff, to eternal puzzlement about our nature. I vividly remember how, as a teen-ager reading about brains, I was forced for the first time in my life to face up to the idea that a human brain, especially my own, must be a physical structure obeying physical law. Although it may seem strange to you, just as it does to me now, this realization threw me for a loop.*¹¹³

The discussion on data is stuck in a loop. It can continue like this forever. The four actors are trying to articulate the world of *data* each with his own vector, but all pointing to the similar direction of *data-driven* applied thinking. If we look at the faces of *West_S* and *Hofstadter_IASL*, their main highlights and concepts are close and similar,¹¹² but the way they are talking about the highlighted concepts come from two different world views. In their articulations, one is more projective and general and the other reflective and universal. For *Hofstadter_IASL*, what was once only a mechanism can now be reconsidered as consciousness.

Negroponte_BD sees *depth* and *breadth* no longer as *either/or* but as *both/and*. *Carpo_SDT* puts more emphasis on the search for an exact *precedent*, rather than on an analytic calculation of consequences. On the other hand, all four try to describe the digital phenomena, providing answers to how this novel environment—populated by *information* and *data*—has changed the way we perceive, think, and operate in our world. But in this act they did so by telling a very different story than the one that opens up while thinking that intelligence coextends

¹¹² Negroponte, *Being Digital*, ebook, loc 354.2/380.

¹¹³ Hofstadter, *I Am a Strange Loop*, ebook, loc 916.0/1088.

with the universe, and that information—seen from an entropic and quantum perspective—can communicate to far-away and directly inaccessible worlds.¹¹⁴

...

End of Scene One

The two acts show similar interests, but different ways of organising and articulating indexes around *information* and *communication*. What we find interesting is that when talking about *information* in Act I, the tendency was to be more and more abstract towards communication by accommodating more and more. The emphasis was on *encoding*, *ciphering*, *communicating*, and *dealing with information*, in other words, on operationalising *information*. With *data*, the conversation tends to go towards concrete *applications* or *fantastic future scenarios*. *Big data* has many faces. If *data* is big enough, it will show us the world we want to see. We can stretch, bend, morph, cut, and mirror data, and if we go with *Brillouin_SIT* in thinking that data has no explicit meaning, then there is no one true story that can be told, but any story can become actualised. The question is can it perform well? In the case of *Xenotheka*, by providing a stage and libraries, we establish a communication channel, and books get a voice. They become actors. They come alive. Of course, this setup is artificial and can be manipulated in many ways, but by doing so, we are not polluting a pure message of a book, but giving it its many faces and bringing the world to it. Our hypothesis is that the beauty of the abundance of *information* lies somewhere other than in the crowd or a unified law. Masterful books flourish if they are given the space to speak and if we are able to speak with them. This is what this play is all about.

Thus, Act II comes to a close.

...

End of the Second Act

¹¹⁴ This was discussed by *Brillouin_SIT* and *Serres_G* in Act I, 91.

[illegible][illegible]

DRAMATIS PERSONAE

The third fold—the third iteration—carries the name *Code*. *Xenotheka* provides *code* with a very different atmosphere from the ones in the previous two acts. In this galaxy of concepts, *code* is situated quite far from our other three concepts of interest. ○2.1 By looking at the indexes surrounding *code*, ○2.4 ■2.3 we get introduced to architectural encodings and expressions. Its most prominent ten protagonists are immersed in such an atmosphere. ○2.26 They passionately write about architecture. The beauty of this act lies in the unfolding of its two possible and equally interesting scenarios. On the one hand, our protagonists are trying to articulate architecture by playing with technical and formal notions of information and communication. On the other hand, information and coding acquire an architectural perspective. It is a double articulation of *coding* and *architecture* around a concept of information which is not explicitly there. The Third Act is staged in such a way that each of the actors is invited to talk about their approach to architectural encoding through a context and an alphabet, or its elements. What we hope for are different articulations and manners of architectural encodings.



○2.26 Ten books, ten actors, ten faces of a concept: *code*, rendering_03_RW_4060_r_50it21d_words_vertex.

Instead of inviting the first four most prominent actors on stage, we will introduce the four actors that we are personally most interested in. As chance would have it, they cover the spectrum of the ten actors most probably interested in architecture and coding. ^{○2.26} From one end of the spectrum, let us invite an actor who has the highest affinity towards the concept of coding. He is a persona split in two bodies of similar characters:

- *Schumacher_The Autopoiesis of Architecture Vol 1*¹¹⁵
 - *Schumacher_The Autopoiesis of Architecture Vol 2*¹¹⁶
- We will refer to him as: *Schumacher_AOA*

The second actor who is invited is a persona from the middle of the spectrum, whose character is somehow different from the rest of the group. His main focus is quite far from the concept of *code*. The hypothesis is that his approach should be similar to *Schumacher_AOA* but articulated by a different conceptual cloud. His code name is:

- *Spuybroek_The Sympathy of Things*
- We will refer to him as: *Spuybroek_TST*¹¹⁷

And as the third character (or the fourth, depending on how we think of *Schumacher_AOA*) from the other end of this small spectrum, we would like to invite a master of well-tempered environments, a lover of Los Angeles:

- *Banham_A Critic Writes*
- We will refer to him as: *Banham_ACW*¹¹⁸

¹¹⁵ Patrik Schumacher, *The Autopoiesis of Architecture: A New Framework for Architecture* (Chichester: Wiley, 2011), ebook.

¹¹⁶ Patrik Schumacher, *The Autopoiesis of Architecture: A New Agenda for Architecture*, First Edition (Chichester: Wiley, 2012), ebook.

¹¹⁷ Lars Spuybroek, *The Sympathy of Things: Ruskin and the Ecology of Design*, Second Revised Edition (London, Oxford, New York, New Delhi, Sydney: Bloomsbury Publishing PLC, 2016), ebook.

¹¹⁸ Reyner Banham, *A Critic Writes: Selected Essays by Reyner Banham*, Eds. Mary Banham et al., First Edition, (Berkeley, CA: University of California Press, 1999).

PROLOGUE

The Third Act should start at any moment. It is arranged in a slightly different manner than the two previous acts. *Xenotheka* articulates the notion of coding largely by indexes common to architecture. This is, of course, reflected in its ten most prominent protagonists who are architects interested in discussing code indexed predominantly by architectural styles (*classicism, modernist, rococo, formalism, Renaissance, etc.*, 2.4.2.4). In *Xenotheka*, concepts indexed by the code and style lie next to each other, in other words, they inhabit the same cloud and articulate each other. 2.4 Could architectural style in the context of code be reformulated as an architectural encoding, and what would be the relation between code and style in such a context?

```
n181 e24 {neo, continuously, exploration, novelty,
attendant, prevalent, designer, aesthetic, code,
preconception, openness, retrospect, protagonist, vagueness,
unquestioned, client, crystallization, evaluation,
orthogonal, bernini, mutate, manmade, magnum, budgetary}
n182 e5 {classicism, modernist, rococo, perrault,
typological}
n121 e28 {discipline, style, manifesto, trope,
unresolved, manoeuvre, exemplar, stylistic, cohere,
creatively, fruitfulness, browse, codification,
dissemination, referential, exclusivity, specious, reconnect,
comprehensibility, brainstorm, corb, irreversibly,
assertiveness, jeff, irreversibility, tschumi, semper,
brett}
```

2.4
Indexes around code and style.

Another reading of the same cloud comes from moving in-between synonyms, where code gets rendered through a form to a certain style.

```
code → cipher → figure → form → course → trend → style
```

Thus, architectural styles could be seen as renderings of specific encodings. When we look at the etymology of the word style, it becomes an expression that can be written in many manners. Style picks up some speed; it becomes fast like fashion and starts to act in an ostentatious way.

style (n.)
early 14c., stile, “writing instrument, pen, stylus; piece of written discourse, a narrative, treatise;” also “characteristic rhetorical mode of an author, manner or mode of expression,” and “way of life, manner, behavior, conduct,” from Old

French stile, estile “style, fashion, manner; a stake, pale,” from Latin stilus “stake, instrument for writing, manner of writing, mode of expression,” perhaps from the same source as stick (v.).

style (v.)

c. 1500, “address with a title;” 1560s, “to give a name to,” from style (n.). Meaning “to arrange in (fashionable) style” (especially of hair) is attested from 1934. Slang sense of “act or play in a showy way” is by 1974, African-American vernacular. Related: Styled; styling.¹¹⁹

A constellation of indexes—code, style, fashion, and manner—starts to unfold. The three actors invited on stage appear interested in discussing and exploring such arrangements. The idea behind the Third Act is to evoke three different articulations of architectural encodings. How can we look at architecture as a way of encoding an abstract personal sphere of interest, while still belonging to a tradition? And if we can, what would be the context for it, and which elements, masks, or characters would we constitute to articulate such an approach? What happens to architecture and its objects when they are operated with at the level of *code*? Instead of asking explicit questions and guiding discussions or conversations, we would like to invite our three actors to articulate an architectural encoding in any manner that seems adequate to them. But of course, let us keep in mind that this articulation is very much influenced by *Xenotheka*, specific actors, the concept at stake, and ourselves. In other words, by how the *Informational Instrument* is tuned and played.

Let us meet the actors, look at their faces, and see the new ways in which the galaxy of concepts shines in the Third Act. Here they are in their order of appearance:

SCHUMACHER_AOA

The most prominent protagonist of *coding* in the context of architecture is *Schumacher_AOA*. He is a character composed of two volumes. The first volume sets up a framework for architecture and the second gives it an agenda. It is one body of work. *Schumacher_AOA* provides a *comprehensive discourse analysis of the discipline*, with the aim of its *theoretical systematization*.¹²⁰ Here are the most frequent and prominent indexes of both volumes:

¹¹⁹ “Style | Origin and Meaning of Style by Online Etymology Dictionary,” accessed January 14, 2019, <https://www.etymonline.com/word/style>.

¹²⁰ See prologue to Schumacher, *The Autopoiesis of Architecture, Vol. I*, ebook.

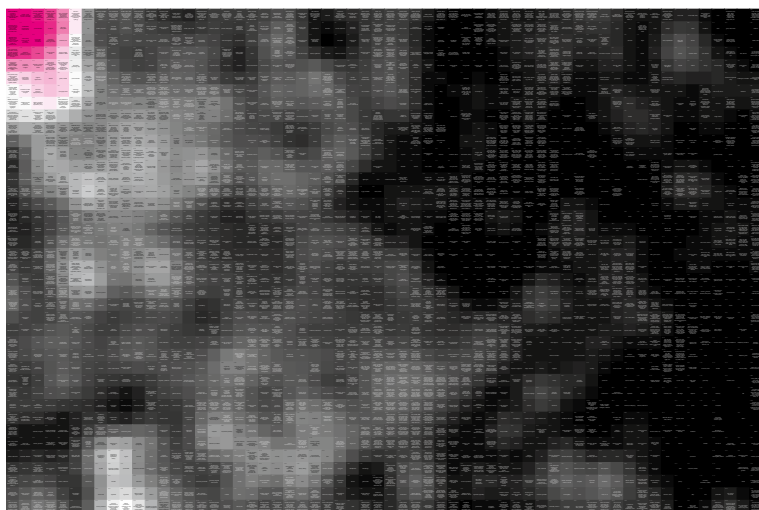
*The Autopoiesis of Architecture, Volume I:
A New Framework for Architecture* by Patrik Schumacher, 2009:

architecture → 1914, system → 1183, design → 1065,
architectural → 900, theory → 772, communication → 717,
style → 689, function → 654, new → 596, society → 457,
build → 434, avant → 408, garde → 390, social → 388,
autopoiesis → 383, self → 370, form → 363, discipline → 350,
code → 346, art → 344, process → 343, concept → 322, space
→ 314, project → 297, structure → 295, societal → 292,
draw → 289, distinction → 286, research → 285, order → 283,
theoretical → 281, modern → 279, formal → 270, value → 260,
work → 257, decision → 256, programme → 242, question → 241,
architect → 235, respect → 228, environment → 224, science
→ 223, time → 223, aesthetic → 221, discourse → 221, world
→ 219, functional → 214, luhmann → 214, innovation → 211,
medium → 209

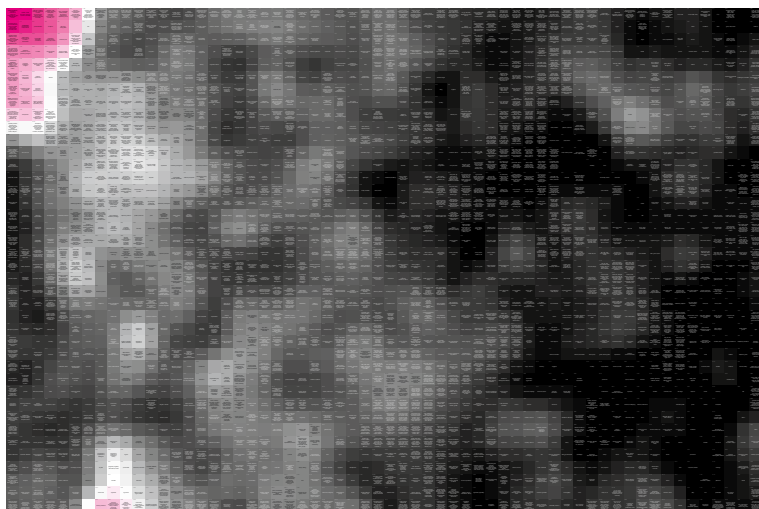
*The Autopoiesis of Architecture, Volume II:
A New Agenda for Architecture* by Patrik Schumacher, 2011:

architecture → 2270, design → 1842, system → 1539,
architectural → 1534, process → 1206, theory → 1067, build →
950, function → 947, problem → 892, space → 853, social → 830,
communication → 823, new → 705, organization → 636, order
→ 623, concept → 582, form → 564, political → 563, style →
526, society → 500, autopoiesis → 496, project → 486, self →
479, structure → 465, term → 456, set → 444, environment →
421, state → 417, work → 404, general → 402, ibid → 401, mean
→ 374, spatial → 367, task → 357, type → 356, architect →
349, language → 347, via → 344, respect → 332, different →
325, distinction → 325, articulation → 323, theoretical → 322,
functional → 321, like → 314, network → 309, information →
304, point → 303, principle → 303, relation → 297

Both faces of *Schumacher_AOA* light up the galaxy in a similar way. There is a slight change in focus, one which is noted in the titles of his books. *A New Framework for Architecture* 02.27 02.29 focuses on more abstract indexes: *code*, *aesthetics*, *discipline*, *style*, *architecture*, *research*, *innovation*. *A New Agenda for Architecture*, 02.28 02.30 on the other hand, is articulating a programme: *project*, *type*, *system*, *task*, *environment*, *function*, *distinction*, *network*. Together, these two faces should *design a theory*, as *Schumacher_AOA* puts it. It is a strange formulation, 'to design a theory'. We will get back to it when it is set on stage in a context of *coding*.



0.2.27
Face of *Schumacher_AOA Vol. 1*, rendering_03_RW_4060_r_50it21d.



0.2.28
Face of *Schumacher_AOA Vol. 2*, rendering_03_RW_4060_r_50it21d.

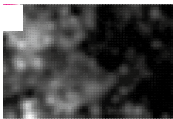
SPUYBROEK_TST

Our second actor from the middle of the spectrum is *Spuybroek_TST*. He has an unusual character for this group. His most frequent indexes talk about *things, form, design, aesthetic*, but from another conceptual space: *Ruskin, Gothic, sympathy, beauty, picturesque, sublime*. These indexes are also reflected in the choice of words in the title and structure of his book: *digital, nature, Gothic, matter, ornament, abstraction, sympathy, radical, picturesque, ecology, and design*. When looked at in the context of the ten actors interested in code, his face looks different from the others. His is the only face whose main focus is turned away from the indexes of *code, architecture, and design*. 0.2.26 His face is about *beauty, ornament, sublime, colour, flatland*,

n14123	n1248	n1369	n4412	n567	n648	n7100
DESIGN, THEORETICAL, orientation, elaboration, complexity, comprehensive, align, ARCHITECTURAL, funcio...	update, overall, innovative, typology, systemic, versatility	elaborate, RESEARCH, enhance, consultant, innovate, interpenetration, institutionalize, comprehensiveness, recombine	paradigm, multi, pervasive, selective, strategically, availability, INNOVATION, interconnection, centrality, so...	micro, reintegrate, developmental, uncontested, organizational, exploratory, retol	innovator, interdependent, fertilization, pervasiveness, outsource, supplier, profitability, synergy	economy, firm, corporation, globally, technological, network, skilled, japanese, backbone, linkage, teamw...
n81424	n8263	n8361	n8461	n8562		n8761
elemental, raison, incommensurable, irritation, seminal, unprincipled, embeddedness, concretize, stilb...	ARCHITECTURE, programmatic, compositional	postmodernism	ascription	autonomy, reintegration		dell
n121428	n12245	n12343	n12444	n12562	n126424	n12762
DISCIPLINE, STYLE, manifesto, trope, unresolved, manoeuvre, exemplar, stylistic, cohere, creatively, fruitfulness, bro...	functionalism, curated, villette, formalists, axonometric	functionalist, disciplinary, eclecticism	modernism, expansiveness, architettura, soane	corbusier, vers	historicism, weld, riba, palladian, castigate, leitmotif, burckhardt, archigram, corbusian, mannerism, disenchantm...	reviewer, neoclassical
n181424	n18245	n18361	n18443	n18564	n18649	n18769
neo, continuously, exploration, novelty, attendant, prevalent, designer, AESTHETIC, CODE, preconception, openness, retrospect, protagon...	classicism, modernist, rococo, perrault, typological	formalist	collage, hannes, dessau	sigfried, berlage, architektur, bauen	collin, reynier, gardes, manfredo, emil, rowe, mannerist, vidler, tafari	autre, arcadia, townscape, smithsons, elia, stirling, ronchamp, nikolaus, pevsner
n241455	n24243	n24344	n244425	n245441	n24643	n24764
contemporary, DISTINCTION, FUNCTION, DECISION, ambition, FORMAL, initially, unify, ENVIRONMENT, latent, insiste...	formalism, renaissance, configure	exhibition, moderne, inconspicuous, fuelled	constructivist, transparency, prehistory, mondrian, weimar, expressionism, geodesic, bauhaus, neue, constructiv...	mies, picasso, adolf, savvye, painterly, expressionist, gropius, freestanding, apollinaire, konrad, fernand, al...	disenchant, greenberg, riegel	wren, aia, evelyn, cedric
n381435	n38243	n38362	n38441	n38562	n38641	n38765
task, operate, imply, solution, mature, articulate, theoretically, arena, polemic, connotation, sketch, sensitivity, tighten, haphaz...	construction, achievement, consonance	engineer, appreciation	skeletal	garnier, dadaist	postmodernists	historian, michelangelo, eclectic, surfeit, reassess
n381445	n38245	n38344		n38562	n38643	n38763
potential, SYSTEM, type, primary, explicit, motivate, frame, solve, constraint, explicitly, integrate, pres...	contribution, select, loosely, THEORY, stringent	structural, reference, appropriately, hoc		monograph, italia	anthology, interdisciplinary, panofsky	academic, paolo, klein
n421411	n42245	n42348		n425413	n426428	n42767
PROJECT, reconstruct, composition, depict, conceptually, envision, densely, reformulate, topography, aggregat...	feasible, relevant, placement, perceptual, dover	embed, generalize, label, stimulation, applicability, wiley		thesis, indentation, abbreviation, noam, typewrite, advisor, croce, bibliography, subsection, vallet, tesauro, bibliographi...	student, documentation, underline, topic, index, parenthesis, card, citation, pseudonym, graduat...	title, author, scholarly, quote, ideally, file, subdivision
n481415	n48241	n483412	n484428			n48764
reconstruction, reinvent, monumental, anonymity, vastness, punctuate, depiction, cornell, gridded, reinvention, volumetric, tab...	idiosyncratic	component, feature, tentatively, terminological, illustrative, principled, feasibility, reorder, syntax, eras...	specify, entry, tentative, inadequacy, john, restrictive, dummy, abbreviate, bracket, deviant, detectable, inapplic...			revise, insert, cite, unpublished



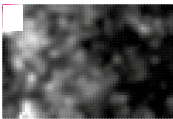
0 2.29 1
 Face of Schumacher_AOA Vol.1 – zoom to the cloud of indexes surrounding indexes of architecture, style and code, rendering_03_RW_4060_r_50it21d.





n16193 DESIGN, THEORETICAL, orientation, elaboration, complexity, comprehensive, align, ARCHITECTURAL, funcio...	n1268 update, overall, innovative, typology, systemic, versatility	n369 elaborate, research, enhance, consultant, innovate, interpenetration, institutionalize, comprehensiveness, recombine	n4612 paradigm, multi, pervasive, selective, strategically, availability, innovation, interconnection, centrality, so...	n667 micro, reintegrate, developmental, uncontested, organizational, exploratory, retol	n668 innovator, interdependent, fertilization, pervasiveness, outsource, supplier, profitability, synergy	n76100 economy, firm, corporation, globally, technological, NETWORK, skilled, japanese, backbone, linkage, teamw...
n61624 elemental, raison, incommensurable, imitation, seminal, unprincipled, embeddedness, concretize, stillb...	n6263 ARCHITECTURE, programmatic, compositional	n6361 postmodernism	n6461 ascription	n6662 autonomy, reintegration		n6761 dell
n122628 discipline, STYLE, manifesto, trope, unresolved, manoeuvre, exemplar, stylistic, cohere, creatively, fruitfulness, bro...	n12265 functionalism, curated, villette, formalists, axonometric	n12363 functionalist, disciplinary, eclecticism	n12664 modernism, expansiveness, architettura, soane	n12562 corbusier, vers	n126624 historicism, weld, riba, palladian, castigate, leitmotif, burckhardt, archigram, corbusian, mannerism, disenchantm...	n12762 reviewer, neoclassical
n181624 neo, continuously, exploration, novelty, attendant, prevalent, designer, aesthetic, code, preconception, openness, retrospect, protagon...	n18265 classicism, modernist, rococo, perrault, typological	n18361 formalist	n18463 collage, hannes, dessau	n18564 sigfried, berlage, architektur, bauen	n18669 colin, reynier, gardes, manfredo, emil, rowe, mannerist, vidler, tafuri	n18769 autre, arcadia, townscape, smithsons, elia, stirling, ronchamp, nikolaus, pevsner
n24165 contemporary, DISTINCTION, FUNCTION, decision, ambition, formal, initially, unify, ENVIRONMENT, latent, insiste...	n24263 formalism, renaissance, configure	n24364 exhibition, moderne, inconspicuous, fuelled	n244626 constructivist, transparency, prehistory, mondrian, weimar, expressionism, geodesic, bauhaus, neue, constructiv...	n245641 mies, picasso, adolf, savoye, painterly, expressionist, gropius, freestanding, apollinaire, konrad, fernald, al...	n24663 disenchant, greenberg, riegli	n24764 wren, aia, evelyn, cedric
n381635 TASK, operate, imply, solution, mature, articulate, theoretically, arena, polemic, connotation, sketch, sensitivity, tighten, haphaz...	n38263 construction, achievement, consonance	n38362 engineer, appreciation	n38461 skeletal	n38562 garnier, dadaist	n38661 postmodernists	n38765 historian, michelangelo, eclectic, surfeit, reassess
n361651 potential, SYSTEM, TYPE, primary, explicit, motivate, frame, solve, constraint, explicitly, integrate, pres...	n36265 contribution, select, loosely, THEORY, stringent	n36364 structural, reference, appropriately, hoc		n38562 monograph, italia	n38663 anthology, interdisciplinary, panofsky	n38763 academic, paolo, klein
n421611 PROJECT, reconstruct, composition, depict, conceptually, envision, densely, reformulate, topography, aggregat...	n42265 feasible, relevant, placement, perceptual, dover	n42366 embed, generalize, label, stimulation, applicability, wiley		n425613 thesis, indentation, abbreviation, noam, typewrite, advisor, croce, bibliography, subsection, vallet, tesaura, bibliographi...	n426626 student, documentation, underline, topic, index, parenthesis, card, citation, pseudonym, graduat...	n42767 title, author, scholarly, quote, ideally, file, subdivision
n481615 reconstruction, reinvent, monumental, anonymity, vastness, punctuate, depiction, cornell, gridded, reinvention, volumetric, tab...	n48261 idiosyncratic	n483612 component, feature, tentatively, terminological, illustrative, principled, feasibility, reorder, syntax, eras...	n484620 specify, entry, tentative, inadequacy, john, restrictive, dummy, abbreviate, bracket, deviant, detectable, inapplic...			n48764 revise, insert, cite, unpublished

02.30 01 1
Face of Schumacher_AOA Vol. 2 – zoom to the cloud of indexes surrounding indexes of system, project and type, rendering_03_RW_4060_r_50it21d.



texture, delicate textile, sculpture. 0.2.31 0.2.32 It is a distinctly different set of indexes than the rest of the spectrum. To get a better context for his articulation in this act, let us look at just the first four other actors from *Xenotheka* who are interested in an index of ornaments, and their affinities towards the *atom-letter* n47e48.

The Sympathy of Things: Ruskin and the Ecology of Design
by Lars Spuybroek, 2011:

thing → 788, form → 556, ruskin → 423, design → 377, gothic → 358, make → 358, feel → 316, sympathy → 291, like → 276, work → 258, life → 247, pattern → 245, object → 245, aesthetic → 244, way → 233, beauty → 231, line → 226, art → 225, ornament → 223, time → 220, call → 193, point → 193, use → 192, force → 188, mean → 184, need → 176, act → 169, relation → 168, world → 165, structure → 164, figure → 163, movement → 158, variation → 158, mat → 153, notion → 153, picturesque → 153, abstract → 149, nature → 147, say → 144, abstraction → 143, take → 140, think → 135, move → 131, start → 128, live → 125, come → 125, end → 123, material → 121, sublime → 121, stone → 120

Concept n47 e48 {ornament, ornamental, mold, aesthetically, twig, entanglement, textile, rib, crystalline, darwin, mullion, textured, finalize, parasitical, sympathize, ornamentation, snowflake, filigree, vegetal, titian, morris, caterpillar, sympathy, relatedness, picturesque, daedalus, teleology, gothic, pheasant, acanthus, organicism, tendril, wallpaper, transept, viollet, naturalism, vitalism, vitalize, vitalist, tracery, empathy, worringer, tessellation, ruskin, lipps, savageness, tessellate, changefulness}

The actors are:

Spuybroek_The Sympathy of Things, 0.0901453,
Abbott_Flatland,¹²¹ 0.0638773,
Ruskin_The Seven Lamps of Architecture¹²², 0.0574003,
Hugo_Les Misérables¹²³, 0.0363651

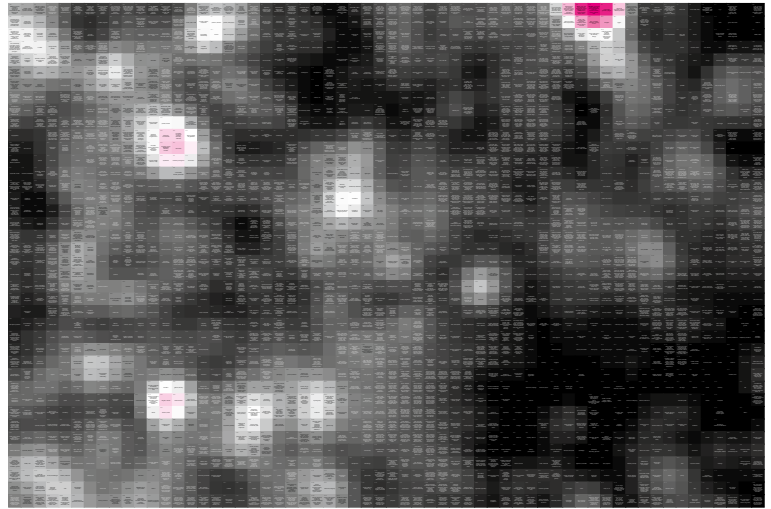
Spuybroek_TST is now getting a contextual profile in the library. All three actors—*Ruskin_The Seven Lamps of Architecture*, *Hugo_Les Misérables*, and *Abbott_Flatland*—were published in the second half of the 19th century and are dealing with similar

¹²¹ Face of *Abbott_Flatland*: https://alice-ch3n81.net/files/data/xenotheka/Abbott_Flatland.pdf, See Edwin A. Abbott, *Flatland: A Romance of Many Dimensions*, Unabridged Edition (Mineola, NY: Dover Publications, 1992).

¹²² Face of *Ruskin_The Seven Lamps of Architecture*: https://alice-ch3n81.net/files/data/xenotheka/Ruskin_TheSevenLampsofArchitecture.pdf, See John Ruskin, *The Seven Lamps of Architecture*, Reprint Edition (Mineola, NY: Dover Publications, 1989).

¹²³ Face of *Hugo_Les Misérables*: https://alice-ch3n81.net/files/data/xenotheka/Hugo_LesMisérables.pdf, see Victor Hugo and Adam Gopnik, *Les Misérables*, trans. Julie Rose (New York, NY: Modern Library, 2009).

indexes to *Spuybroek_TST* but from a different *body of thinking*.¹²⁴ *Spuybroek_TST* refers to it explicitly: “Can we, and will we, ever be Romantic enough?”¹²⁵ On the other hand, in the introduction to the book, Brian Massumi refers to *Spuybroek_TST*’s *Gothic ontology* as a *flat ontology*¹²⁶ with Ruskinian romanticism, which brings the aforementioned indexes and actors into a convincing arrangement.



○2.31

0 1

Face of *Spuybroek_TST*, rendering_03_RW_4060_r_50it21d.

BANHAM_ACW

From the other end of the spectrum comes an actor with almost ten times less affinity towards *code* than *Schumacher_AOA*. This is *A Critic Writes, Selected Essays* by Reyner Banham, in this library also known as *Banham_ACW*. The essays in this edition were written by Reyner Banham but selected by Mary Banham, Paul Barker, Sutherland Lyall, and Cedric Price. This book is a collection of voices, topics, and articulations, out of which the dominant one is the author himself, Reyner Banham. It is not a single narrative but a multiplicity of thoughts and ideas. He is an architectural mutant. As such, we suppose he feels very comfortable in this library. His face ○2.33 ○2.34 and its most frequent indexes depict an atmosphere of an actor talking about *architecture*, *design*, *cities*. He is looking for elements, such as *handrail*, *aircraft*, *portable*, *glaze*, *kit*, and for forms and formats that bring those elements into constellations: *Arcadia*, *economy*, *catalogue*, *modernism*, *anthology*, *Los Angeles*. *Banham_ACW* is a figure in love with technology.

¹²⁴ For the *Body of Thinking*, see Hovestadt, “Cultivating the Generic” in *Eigenarchitecture*, edited by Ludger Hovestadt and Vera Bühlmann, (Birkhäuser Architecture, 2014), 7–68.

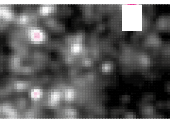
¹²⁵ Spuybroek, *The Sympathy of Things*, ebook, loc 332.0/965.

¹²⁶ See introduction to Spuybroek, *The Sympathy of Things*, ebook, loc 29.8/965.

n44e12	n45e17	n46e25	n47e48	n48e3	n49e5	n50e51
freeze, taste, fade, patch, cliff, orange, delicately, spray, discomfort, assort, necklace, communion	delicate, flower, veil, ugliness, flake, monotonous, irregularly, garland, cherry, entwine, sensuality, immaculate, etc...	BEAUTY, carve, leaf, decorate, fringe, sympathetic, texture, entanglia, rigidity, SUBLIME, nestle, sprout, interlace, drape, wildn...	ORNAMENT, ornamental, mold, aesthetically, twig, entanglement, textile, rib, crystalline, darwin, mullion, textured, final...	forethought, grandson, polygon	equilateral, polygonal, isosceles, flatland, spaceland	synonym, hermetic, mystique, microcosm, isis, sol, quintessence, lucifer, hellenistic, astral, somatic, adept, pr...
n184e12	n185e4	n186e18	n187e5	n188e1	n189e1	n119e1
touch, beautiful, linger, noisy, diamond, shroud, fabulous, dwarf, poster, laughable, fairy, rumble	capricious, saintly, skein, hippopotamus	visibly, color, cathedral, richly, sharpness, exquisitely, unison, festoon, heraldic, concorde	spire, normandy, arabesque, drapery, incision	triangular	juggler	mille
n184e12	n185e7	n186e5	n187e8	n188e17		n179e1
light, climb, barely, silence, gigantic, heroic, shadowy, imperious, cabinet, paradise, sponge, talker	ugly, soar, phantom, gorge, avalanche, slough, securely	recess, cranny, graceful, imperatively, allowable	niche, mould, belfry, bas, sublimity, leafage	sculpture, pinnacle, buttress, cylindrical, dishonesty, thenceforward, romanesque, devotio...		perforate
n224e18	n225e8	n226e2	n227e4	n228e2	n229e2	
overwhelm, vanish, plunge, enormous, penetrate, dawn, masterpiece, fold, monster, procession, lull, blossom, hurricane, coars...	shadow, install, beneath, profile, pantheon, limbo, illegible, skylight	whitewash, hermetically	apse, briar, parthenon, angelo	decorative, acropolis	horizontally, masonry	
n284e35	n285e14	n286e3	n287e1	n288e1	n289e3	n290e1
wooden, indulge, harsh, ensue, immense, recur, handful, gnaw, swarm, applaud, ripe, robust, indignant, discreet, ecli...	prodigious, anarchy, peculiarity, adjoin, excavation, meagre, indomitable, assuredly, respiration, gratuitously, pla...	excavate, solder, woodwork	gable	nave	vertically, marble, strut	semicircle
n344e55	n345e42	n346e2	n347e2	n348e4	n349e1	n350e2
grand, vague, conceal, honest, destiny, illuminate, cherish, suspicious, spark, unheard, shoe, revolt, scrap, pronounce, arr...	crumble, magnificent, abrupt, paris, lavish, surmount, superb, staircase, stove, retrace, nineteen, pave, shapeless, ri...	plank, quicksand	antique, louvre	plaster, decoration, hadrian, pompeii	gymnasium	aisle, tern
n484e38	n485e12	n486e1	n487e2	n488e8	n489e7	n419e1
mysterious, glimpse, terrify, thrust, chill, vaguely, horrible, menace, ecstasy, extricate, serenity, wed, audacity, misa...	rustic, obscurity, transfigure, harshness, parisian, accomplice, venerate, ennui, rendezvous, culpable, pardonable, dormitory	flue	infallibly, butchery	magnificence, triumphal, familiarize, ax, truss, impost, courthouse, colosseum	carpentry, frieze, vault, amphitheater, mantel, lath, salubrious	rubble
n484e8		n486e2			n489e9	n479e2
despair, fugitive, gentleness, rogue, unhappiness, purloin, angelic, brusquely		calumny, aurelius			basilica, vestibule, semicircular, joist, entablature, groin, caisson, recuell, interaxes	width, tuscan
n524e1	n525e3	n526e1	n527e9	n528e1		n539e1
horribly	carnival, devotee, preceptor	bordeaux	della, median, lorenzo, draughtsman, equidistant, historia, centric, grayson, trs	phidias		module



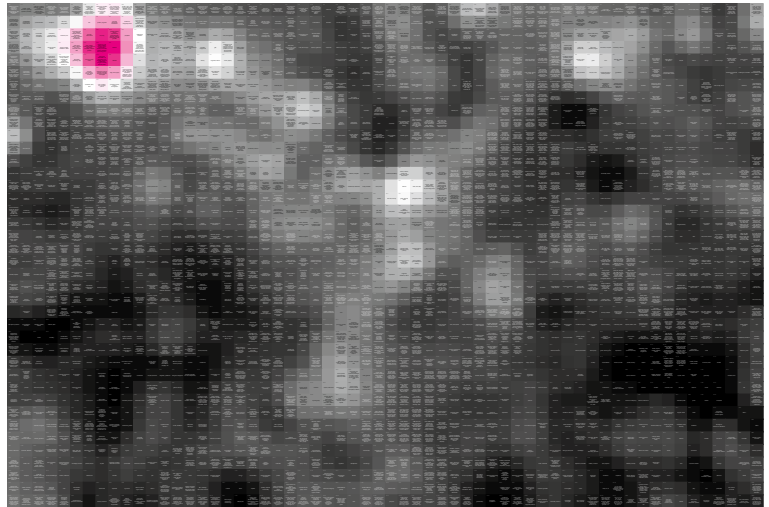
02.32 0 1
Face of *Spuybroek_TST* – zoom to the cloud of indexes surrounding indexes of *ornament*,
beauty and *sublime*, rendering_03_RW_4060_r_50it21d.



A Critic Writes, a collection of essays written by Reyner Banham from the 1950s to the 1980s:

build → 453, like → 391, design → 363, architecture → 348, work → 257, new → 249, house → 244, architect → 239, time → 208, good → 204, art → 203, make → 197, style → 196, architectural → 192, know → 183, look → 179, modern → 175, come → 168, world → 162, great → 156, year → 155, way → 151, form → 150, just → 149, man → 142, use → 141, say → 134, history → 133, glass → 129, city → 127, point → 127, appear → 123, kind → 121, long → 119, fact → 118, go → 116, thing → 116, see → 115, book → 114, right → 113, old → 113, wright → 107, leave → 106, begin → 104, stand → 103, think → 101, structure → 101, american → 99, early → 99, mean → 97

The stage is set; there is an air of anticipation. Different architectural encodings, their elements and, we hope, a glimpse of their renderings will unravel in the following pages. How our protagonists are going to play with *architecture* and *code*, in the unfolding and opening of space around the notion of *information*, is yet to be seen.



O2.33

0 1

Face of Banham_ACW, rendering_03_RW_4060_r_50it21d.

...

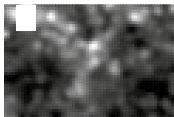
SCENE I: AN AUTOPOIETIC SYSTEM

Schumacher_AOA is first to light up the galaxy. He enters the stage confidently and eagerly, with a huge body of work written over more than one thousand pages. Equipped with a freshly articulated framework and a new agenda for architecture, he begins to elaborate his autopoietic programme without any hesitation. He immediately introduces his main concept in his first thesis.



n5a7	micro, reintegrate, developmental, uncontested, organizational, exploratory, retool	n6a8	innovator, interdependent, fertilization, pervasiveness, outsource, supplier, profitability, synergy	n7a188	economy, firm, corporation, globally, technological, network, skilled, japanese, backbone, linkage, teamw...	n8a44	technology, manager, investment, statistic, flexible, immigrant, technologically, compile, institutio...	n9a42	mid, professional, impact, increasingly, dominant, induce, service, business, diffuse, broaden, strategic, industrial, europ...	n10a18	decade, major, unite, source, widespread, AMERICAN, cultural, dramatic, bypass, international, television, broadcast, join...	n11a38	leader, americans, november, target, candidate, overwhelmingly, credibility, elite, defense, organizer, leak, v...
n6a2	autonomy, reintegration			n7a1	dell	n8a2	pioneer, prognosis	n9a3	california, relentlessly, transatlantic	n7a3	dominance, marginally, miami	n7a82	massive, advertise, report, december, april, corporate, digest, july, warfare, journalist, devastation, official, disrupt...
n12a2	corbusier, vers	n12a24	historicism, weld, riba, palladian, castigate, leitmotif, burckhardt, archigram, corbusian, mannerism, disenchantm...	n12a2	reviewer, neoclassical	n12a2	los, foray	n12a18	portable, alberto, aircraft, spectacularly, professionalism, hispanic, advisory, unpromising, leslie, gimmick	n13a1	peripheral	n11a2	unidentified, unbiased
n18a4	sigfried, berlage, architektur, bauen	n18a9	colin, reynier, gardes, manfredo, emil, rowe, mannerist, vidler, tafuri	n18a9	autre, arcadia, townscape, smithsons, elia, stirring, ronchamp, nikolaus, pevsner	n18a43	angeles, loo, fiat, travesty, wright, futurism, pollock, prefabrication, freeway, tennessee, greene, parachute, sant, smog, mon...	n18a1	saarinen			n10a15	jay, nihilistic, nordic, finland, northwestern, retinal, ocular, finnish, merleau, ponty, alvar, aalto, sketchbook, helsi...
n24a41	mies, picasso, adolf, savoye, painterly, expressionist, gropius, freestanding, apollinaire, konrad, fernand, al...	n24a3	disenchant, greenberg, riegl	n24a4	wren, aia, evelyn, cedric	n24a21	ramp, glaze, buckminster, kit, practicality, turin, cladding, classicist, craftsmanship, stuttgart, richards, ventilate, radia...	n24a1	handrail			n25a1	holl
n38a2	garnier, dadaist	n38a1	postmodernists	n38a5	historian, michelangelo, eclectic, surfeit, reassess	n38a7	catalogue, overtone, nouveau, underside, aeroplane, zeitgeist, chandigarh	n38a3	luigi, jones, legibly	n31a32	norton, homeless, robin, dennis, cal, tectonic, mutability, rhetorically, materialise, utilise, thankfully, mimicry, veneer, inhabitat...	n31a1	idealise
n38a2	monograph, italia	n38a3	anthology, interdisciplinary, panofsky	n38a3	academic, paolo, klein	n38a5	critic, nostalgic, full, canonical, postwar	n38a4	polemical, facade, incisive, iconographic	n37a7	pennsylvania, animation, progenomena, iterative, characterising, sigmund, panopticon	n37a8	rohe, characterised, internalise, tectonics, constructional, greg
n42a13	thesis, indentation, abbreviation, noam, typewrite, advisor, croce, bibliography, subsection, vallet, tesauro, bibliographi...	n42a26	student, documentation, underline, topic, index, parenthesis, card, citation, pseudonym, graduat...	n42a7	title, author, scholarly, quote, ideally, file, subdivision	n42a8	publication, edit, editor, sic, espouse, payne	n42a5	rhetorical, archive, ernst, uselessness, artistic	n43a5	van, unacknowledged, rework, installation, georg	n41a4	mit, infect, translucent, lars
				n48a4	revise, insert, cite, unpublished	n48a8	publish, preliminary, document, revision, scholar, conference, graduate, publisher	n48a7	conventional, dedicate, literal, unprecedented, post, collaborator, spotlight	n48a8	robert, instrumental, dimensional, instigate, anthony, gregory, atmospheric, inorganic	n49a8	recast, vicissitude, diagnosis, responsive, postmodern, scott, michael, diagnostic

0.234 0 1
Face of *Banham_ACW* - zoom to the cloud of indexes surrounding indexes of *Los Angeles*, *parachute* and *ventilate*, rendering_03_RW_4060_r_50it21d.



THESIS 1

The phenomenon of architecture can be most adequately grasped if it is analyzed as an autonomous network (autopoietic system) of communications.

The theory presented here—the theory of architectural autopoiesis—offers a new theoretical framework that explicates architecture as a distinct subsystem of society, understood as a sui generis system of communications. This framework structures a comprehensive analysis of the discipline in terms of its most fundamental concepts, methods and values.

The term architecture is usually assumed to denote either a certain class of artefacts—the class of all (fine) buildings—or an academic domain of knowledge concerned with this class of artefacts or, finally, a professional activity directed towards the production of such artefacts. However, architecture as a system of communications is neither a mere collection of artefacts, nor a mere form of knowledge, nor merely a particular professional practice. Rather it encompasses all three categories: artefacts, knowledge and practices—all understood as communications that connect to each other in an ongoing recursive network.¹²⁷

What immediately strikes both *Spuybroek_TST* and *Banham_ACW* is the confidence with which *Schumacher_AOA* sets a very clear and strong hierarchy. He sees architecture as an autonomous network of communication, a subsystem of a world system which is the sum total of all communication happening at once: a society.¹²⁸ While looking at architecture from a distance, as its master, he objectifies it as a network of communication. He then places it in a laboratory as an autonomous object and starts analysing it in terms of its underlying principles: concepts, methods, and values. Architecture is safe and sound, as long as it does not challenge, or leave the laboratory. This is just the inverse approach to *Brillouin_SIT*'s, who was trying to formalise communication, fully aware of the intrigues that come with it, one of which is "*that no observation can be made without an accompanying increase of entropy.*"¹²⁹ *Schumacher_AOA* observes communication, while *Brillouin_SIT* tries to communicate.

Nevertheless, *Schumacher_AOA*'s confidence captivates the library as he continues.

Schumacher_AOA:

0.1 Architecture as a System of Communications

¹²⁷ Schumacher, *The Autopoiesis of Architecture, Vol. I*, ebook, loc 28.0/1254.

¹²⁸ Niklas Luhmann, *Theory of Society, Vol. 1* (Stanford, CA: Stanford University Press, 2012).

¹²⁹ Brillouin, *Science and Information Theory*, ebook, loc 399.5/638.

*The theory of architectural autopoiesis closely 'observes' (and intends to intervene within) a distinct subset of these societal communications, namely the subset of architectural communications, and—assuming that they form a system—is trying to capture this system's constitutive conceptual structures (concepts), its regular communication patterns (methods), its criteria of evaluation (values), as well as its evolutionary trajectory with respect to those three dimensions. The theory offers a coherent framework that allows architecture to analyze itself in comparison with other subsystems of society like art, science and politics. On the basis of such comparisons the theory insists on the necessity of disciplinary autonomy and argues for a sharp demarcation from both art and science. Design intelligence is an intelligence sui generis. It is a specific collective intelligence that evolves within its own self-referential network of communications. This network is the autopoiesis of architecture. Its past, present and (potential) future trajectories constitute the topic of this book.*¹³⁰

Schumacher_AOA wants to capture architecture, give it a framework, disciplinarise it, even give it an *intelligence sui generis*. This intelligence, in our reading, is closer to a set of laws than to an intelligence driven by its desires, or to an intelligence as discussed by Serres_G in the First Act. Schumacher_AOA is doing his best to define and explicate how, or maybe even design ways in which, architecture operates and evolves. But not in order to animate it, but rather to demarcate and contain it. To make it self-sustainable. In other words, he wants to isolate architecture as a system of communication and observe and temper communication within it. Schumacher_AOA continues to elaborate the elements and encodings of the autopoietic system of architecture without granting it freedom to talk to the outside. He explicitly starts to articulate the code of architecture.

Schumacher_AOA:

3.5 The Codification of Architecture

THESIS 14

All design decisions are evaluated along two dimensions: utility and beauty.

...

Another way to ask the same questions would be to ask: how is architecture codified? Which terms within the architectural discourse operate the decisive binary code that is required to unify and demarcate architecture as autopoietic function system within society?

¹³⁰ Schumacher, *The Autopoiesis of Architecture*, Vol. I, ebook, loc 29.5/1254.

The theory of architectural autopoiesis proposes that architecture is differentiated on the basis of two codes: the double code of utility and beauty. Architecture is demarcated and integrated around the interweaving of two questions, the question of beauty and the question of utility. These two questions or concerns are capable of probing all architectural/design communications and only architectural/design communications. This double coding is closely connected to architecture's lead-distinction of form vs function. Beauty and utility are the evaluative terms that flow from the lead-distinction of form and function. Utility is good, useful function in contrast to bad function, ie, set against the useless, the dysfunctional; and beauty is good, resolved form set against the ugly, bad, unresolved form. This sets up two binary oppositions which force evaluation and facilitate the required design decisions.¹³¹

Schumacher_AOA encodes all design decisions along two dimensions: *utility* and *beauty*. Each can be positive or negative, beautiful or ugly, functional or dysfunctional. Such an understanding implies that both *utility* and *beauty* can be explicitly measured. This is an inverse articulation of *beauty* and *utility* to the one that comes from *Xenotheka*, where *beauty* is an index to a concept which talks about beauty. It is encoded in *atom-letter n46 e25*, but it would be lost without the stability provided by the cloud. In the case of *Xenotheka*, it is clear that *beauty* is not a dimension but a concept in a specific context; it depends on the library and its encoding; it is an articulation out of many dimensions: a dimensionality. With each change in *Xenotheka*, it shows a new face. The beauty of this is that we can work with a concept of *beauty* without explicating it, but by playing with its many dimensionalities. With *Schumacher_AOA*, coding and communication go in the other direction, to binary oppositions.

Intrigued by this statement, somewhere in the library *Alberti_TBOA* whispers to *Spuybroek_TST* while looking at *Vitruvius_TBOA*.¹³²

Alberti_TBOA:

*But what Beauty and Ornament are in themselves, and what Difference there is between them, may perhaps be easier for the Reader to conceive in his Mind, than for me to explain by Words.*¹³³

Spuybroek_TST smiles and whispers back while thinking.

¹³¹ Schumacher, *The Autopoiesis of Architecture, Vol. I*, ebook, loc 553.7/1254.

¹³² Vitruvius, *Ten Books on Architecture*.

¹³³ Leon Battista Alberti, *The Architecture of Leon Batista Alberti. In Ten Books* (London: Printed by Edward Owen, 1755), 358.

Spuybroek_TST:

We cannot answer this question in terms of “meaning,” that much is certain. You cannot answer those questions at all in twentieth-century terms, I fear.

Meaning, language, criticality, and semiotics have been standing over the grave of beauty for a hundred years now—there is no friendly way of saying it.¹³⁴

Schumacher_AOA continues without hearing the comments.

Schumacher_AOA:

- code of utility: functional vs dysfunctional
- code of beauty: formally resolved vs formally unresolved

The exact words used are not always stable and different words circulate in different languages. However, the basic distinction is always the same. Theoretically this code can be derived as the (necessary) evaluative doubling of architecture’s lead-distinction into two complementary binary codes. In turn, the lead-distinction of architecture—form (self-reference) vs function (world-reference)—is the necessary re-entry of the distinction between system (architecture) and environment (society) within the autopoietic system of architecture.¹³⁵

Vitruvius_TBOA stops smiling as Schumacher_AOA assigns only one possible state to both beauty and utility: 0 or 1. This zero and one are not empty symbols that are part of the dimensionality of beauty or utility; they are rather signs of *functional vs dysfunctional* and *the formally resolved vs formally unresolved*. It is the opposite gesture from thinking that code makes the object of interest produce more, as *Xenotheka* and *Informational Instrument* try to do. With Schumacher_AOA, code assigns meaning. Before concluding on his encoding process, he adds another code. The code of novelty: *original vs conventional*, 0 vs 1.

Schumacher_AOA:

Within the avant-garde segment of the discipline the third code does indeed become prevalent. This extra code, in fact, facilitates the formation of the avant-garde as a recognizable subsystem within the autopoiesis of architecture. This code validates originality and imposes the relevance and recognition of the code values *original (new) vs conventional (old)* on all avant-garde communications. Mainstream architectural communications are not subject to this limitation. The code of novelty (originality) cannot impose itself here.¹³⁶

¹³⁴ Spuybroek, *The Sympathy of Things*, ebook, loc 333.0/965.

¹³⁵ Schumacher, *The Autopoiesis of Architecture*, Vol. I, ebook, loc 567.5/1254.

¹³⁶ Schumacher, *The Autopoiesis of Architecture*, Vol. I, ebook, loc 587.5/1254.

He starts rendering and branding the whole system by giving an articulation to his universal encoding process: he calls it *parametricism*. Here is an instance of it.

Schumacher_AOA:

11.2 The Parametricist Research Programme

THESIS 58

The eventual success of grand, unifying schemes in science relies on the underlying coherence of reality. The rationality of a style's claim to universality lies in the advantage a coherent built environment offers to society. Modernism did achieve universality during the course of the 20th century. Parametricism aims for an equivalent achievement in the 21st century.

In principle every property of every element or complex is subject to parametric variation. The key technique for handling this variability is the scripting of functions that establish associations between the properties of the various elements. However, although the new style is to a large extent dependent upon these new design techniques, the style cannot be reduced to the mere introduction of new tools and techniques. What characterizes the new style are new ambitions and new values—both in terms of form and in terms of function—that are to be pursued with the aid of the new tools and techniques. Parametricism pursues the very general aim: to organize and articulate the increasing diversity and complexity of social institutions and life-processes within the most advanced arenas of Post-Fordist network society.¹³⁷

Parametricism is a new style that can master populations by preserving their designed variability. Each and every element in space becomes a vector of properties. By correlating vectors with a general rule, you are designing a powerful machine. Instead of a single space, Schumacher_AOA is able to orchestrate a whole field of spaces. He starts to look at the world through models in a one-to-one relation, trying to optimise, control, and design them in coherence with reality. With more parameters, Schumacher_AOA's models can become more complex, better, and more real. His talk culminates as he starts to 'design' a theory of design.

Schumacher_AOA:

Epilogue—The Design of a Theory

The author of the theory of architectural autopoiesis must therefore take a position against indifference and the live-and-let-live tolerance that suffocates debate. The unity of architecture requires comprehensive debate. The unity of

¹³⁷ Schumacher, *The Autopoiesis of Architecture*, Vol. II, ebook, loc 1740.3/2005.

a hegemonic style requires conclusive debate. Coherent practice requires that debates are concluded to become premises for decisive action. The underlying sensibility and thrust of the arguments about Parametricism as new global, epochal style are based on the desire to enhance the power of collective discourse over all individual endeavours. This implies a shift in discursive sensibility, a reduction of anything goes tolerance and an insistence on forging a coherent, collective movement forward. However, the appropriate level of discursive tolerance is itself a historical variable. The theory of architectural autopoiesis recognizes the value of discursive tolerance at certain historical junctures.¹³⁸

What does it mean to design a theory?¹³⁹ *Theoria* has its etymological roots in Latin and Greek; it points; it is a way of looking, a conception, a viewing. To parametrically design a theory would mean to design an adjustable way to look (at the world) while stabilising the main axis of perspective. In other words, if we design a way to look then all the objects we see will have the same flavour. They will be fixed and paralysed. In contrast, to keep the context open we either design and play with objects, or we look at them through different theories, but we don't design both the object and the way of looking at it. In this sense, this book behaves more as a lively 'object' or a character, rather than a theory. What might be interesting is to design a factory for many synthetic theories and see how objects behave under their many lights. Otherwise to design a theory, at least to us, sounds strange, if not dangerous. But for those who find it interesting, this is an open and urgent call.

Schumacher_AOA:

The most urgent, general conclusion is perhaps simply: join Parametricism's drive to conquer the mainstream of world architecture!¹⁴⁰

...

End of the First Scene

¹³⁸ Schumacher, *The Autopoiesis of Architecture*, Vol. II, ebook, loc 1870.3/2005.

¹³⁹ theory (n), the 1590s, "conception, mental scheme," from Late Latin *theoria* (Jerome), from Greek *theoria* "contemplation, speculation; a looking at, viewing; a sight, show, spectacle, things looked at," from *theorein* "to consider, speculate, look at," from *theoros* "spectator," from *thea* "a view" (see *theater*) + *horan* "to see," which is possibly from PIE root **wer-* (3) "to perceive." from "Theory|Origin and Meaning of Theory by Online Etymology Dictionary," accessed August 27, 2018, <https://www.etymonline.com/word/theory>.

¹⁴⁰ Schumacher, *The Autopoiesis of Architecture*, Vol. II, ebook, loc 1929.3/2005.

SCENE II:
THE SYMPATHY OF THINGS

Second to enter the stage is *Spuybroek_TST*. He plays a cunning character of mixed feelings. In principle, he likes *Schumacher_AOA*'s story, but not the way he presents it. The two of them are different characters talking about the same thing in two different manners. While *Schumacher_AOA* is claiming universality, 'designing' a theory, and calling for action, *Spuybroek_TST* is interested in telling a beautiful story through a network of its fictional relations. In a charming way, by pointing and referring to some of his friends from *Xenotheka*, he captivates out attention and creates a nice atmosphere in the library.

Spuybroek_TST:

My ambition is to update Ruskin, not to see him diluted in the countless streams of diverging trends.

I let Ruskin encounter William James, revolve around him, and absorb some of his thought, but not enough to slow him down; sweep around Henri Bergson, acquiring more speed; and again around a few Germans (Theodor Lipps, Wilhelm Worringer, and even Martin Heidegger); eject him over the twentieth century (which at several points in the book I call the dark age of the sublime), with its world wars, its minimalism, and its deconstructivism; and stop him so that he appears suddenly in our own age, like Doctor Who, meeting the likes of Bruno Latour and Peter Sloterdijk. One could hardly call this project historiographic—but it is not pure science fiction either, since we are bound to make the creature from the past speak in words both he and we understand.

*In this sense, this book fits an established custom: to create a Ruskin object, a probe sent from the past to shine light on our own times.*¹⁴¹

His first moves resonate with *Xenotheka*. *Spuybroek_TST*, the artificial character of *Xenotheka*, is making a Ruskin object as a probe with the intention to travel and learn about the world. Sounds fantastic. Let us follow his probe.

Spuybroek_TST:

How can one make the aesthetic philosopher (as Edmund White correctly qualifies him) of variation, imperfection, and fragility into one of machinery? This question brings me to my second project: I will argue that our contemporary tools of design and production should be understood in a framework not of modern times but of premodern ones—not only of Ruskin's age of the picturesque and ornament but also of the pre-Renaissance era his own century tried to recreate: the age of the Gothic. John Ruskin's Gothic,

¹⁴¹ Spuybroek, *The Sympathy of Things*, ebook, loc 16.0/965.

*either misjudged as sheer ethics or aesthetically not taken entirely seriously, turns out to be such a radical concept of design that I do not hesitate to call it a Gothic ontology, a notion that fuels the rest of the book.*¹⁴²

The main fantasy of his story is the articulation of a Gothic ontology which, as a celebration of continuity, variability, and transformability of space, brings the premodern times and Ruskin's age, together with Schumacher_AOA's parametricism, into the same conceptual space. His symmetries are convincing. Variability and machinery, fragility and logistics, seem to articulate each other without any resistance into a continuous functional morphing. To use his words: there is a sympathy between those elements. He continues.

Spuybroek_TST:

*Gothic ontology is defined as a special relationship between figures and configurations, in which the figures are active parts that have a certain freedom to act, though only in relation to others and in order to form collaborative entities. This concept transcends the aesthetic opposition of structure and ornament, making the Gothic "a beauty that works," one that leads to a much broader notion of an aesthetics based on sympathy. Sympathy, in my briefest definition, is what things feel when they shape each other.*¹⁴³

Gothic ontology is a "beauty that works," a relationship between figures and configurations, "what things feel when they shape each other." A sympathy. Brian Massumi qualifies this as a flat ontology with one plan(e) where differences come together and all the hierarchies disappear.¹⁴⁴ Here Spuybroek_TST turns to his dear friend Worringer_AAE and starts reciting his pages.

Worringer_AAE:

*We regard as this counter-pole an aesthetics which proceeds not from man's urge to empathy, but from his urge to abstraction. Just as the urge to empathy as a pre-assumption of aesthetic experience finds its gratification in the beauty of the organic, so the urge to abstraction finds its beauty in the life-denying inorganic, in the crystalline or, in general terms, in all abstract law and necessity.*¹⁴⁵

Spuybroek_TST slowly starts to encode his notion of sympathy by mixing different characters and their concepts. For him, sympathy appears when dualisms move towards a spectral form.

¹⁴² Spuybroek, *The Sympathy of Things*, ebook, loc 18.8/965.

¹⁴³ Spuybroek, *The Sympathy of Things*, ebook, loc 20.2/965.

¹⁴⁴ See introduction to Spuybroek, *The Sympathy of Things*, ebook, by Brian Massumi.

¹⁴⁵ Wilhelm Worringer, *Abstraction and Empathy: A Contribution to the Psychology of Style* (Mansfield Centre, CT: Martino Fine Books, 2014), 23.

Spuybroek_TST:

In short, Lipps's notion of Sympathie is the more accurate one, but only when understood in Worringer's terms, which are more accurate, because they allow us to understand sympathy as a mixture of abstraction and empathy.¹⁴⁶

He takes both *empathy* and *abstraction* from Worringer_AAE, but clearly places a lot of weight on “-pathy.”

Spuybroek_TST:

I am arguing that things cannot come into being or exist without style. And I want to make this claim in the most radical sense: every ontology is a style, it does not just have one. Strictly speaking, it is the styles that are, and being is the verb. Aesthetics, I argue, is ontology. Things are as they are aesthetically, or, as some would say, because they have an effect; or, as others would say, because they affect each other—but that is far too mechanical for me, because sympathy means things act in relation (“sym-”) and such relations are felt (“-pathy”). An effect issues from just one term; affect occurs between at least two terms, but merely as an exchange of feelings, while sympathy is a resonance, an attunement of feelings, forming a true connection or bond.¹⁴⁷

There is a strange atmosphere building up between Schumacher_AOA and Spuybroek_TST. They are like competing allies, like runners on a running track. They aim for the same goal, for the network, for the connection of things, for relations, bonds, and feelings. This is a communication network in which there is always at least one continuous line between any two nodes. Each node affects all the others. The ornament is becoming a function of form, design work renders architectural forces which are in themselves ornamental. There is no outside; there is just one plan(e) of continuous transformation.

Spuybroek_TST:

Eventually, the main question will emerge: Can we, by acknowledging technology as the main source of the contemporary sublime, turn the tide? Having arrived at that point, we will collect all the attributes of the picturesque, such as wildness and freedom, and endeavor to radically apply them to technology. I am convinced that this is the only way to retrieve a world of things, i.e., a world of beauty, which I equate with a world of feelings: to move not away from technology but through it. Questions raised by art and artisanship should be appropriated by technology—not a technology of purposiveness, instrumentality, and mediation, however, but one of variation and flourishing.¹⁴⁸

¹⁴⁶ Spuybroek, *The Sympathy of Things*, ebook, loc 429.4/965.

¹⁴⁷ Spuybroek, *The Sympathy of Things*, ebook, loc 480.9/965.

¹⁴⁸ Spuybroek, *The Sympathy of Things*, ebook, loc 480.9/965.

How to talk about beauty through technology? Spuybroek_TST asks implicitly. But the way he asks is in the manner of Schumacher_AOA, again by equating beauty to a function, this time not as *formally resolved* vs *formally unresolved* but beauty seen as naturalised feelings formalised to relations on a plane. As we see it, the story in a way goes back to parametrising communication, and counting its relations, still not by learning how to talk to beauty, or work with it. All subjects are gone.

Spuybroek_TST:

*Our Gothic ontology has never aspired to distinguish strictly between the two: stones act like plants, and plants act as strange and still as rocks. What we can say, though, is that the closer we seem to get to a middle position, the more relations between things start to become reciprocal and move away from clear-cut dualisms—and that is where the true radicalism of the middle lies.*¹⁴⁹

Since we sympathise with these thoughts we would like to provoke and push them further. Why should a stone act like a plant? Why lose the distinction? Why not play with the distinctions? Can a plant talk to a stone? Or better yet, can a plant act like a stone while talking to it? A flat ontology is still an ontology, and maybe the problem lies in the *twentieth-century* terms (as he mentioned before while whispering to Vitruvius_TBOA)—like ontology—which are unable to grant intelligence to objects, stones, or plants, without paying the price of one plan(e).

Spuybroek_TST:

*The problem is a fundamental lack of beauty, of a constructed knot of objects acting as stations for feelings. Feelings cannot be mediated; you cannot put them on television. Feelings can only be used to make things. Buildings, vases, cars, cupboards, wallpaper, tables—all our furnishings are things. Images on television do not seem to qualify as things because the fact that they have been fabricated is hidden under such a thick cloak of actuality that they become impossible to live with. They simply pass by, perishing continuously (in what must be our best model of hell to date). Advertising is the last resort of artificiality on television, the last remnant of ornament.*¹⁵⁰

What is interesting is that both Schumacher_AOA and Spuybroek_TST don't take into account the notion of information (in a way that was discussed in the First Act). Beauty and feelings might not be mediated or faithfully represented but what if they can be symbolised by an algebraic character and operationalised in relation to other symbols? Then images can talk, and we live with them. By playing with the abundance of information, one

¹⁴⁹ Spuybroek, *The Sympathy of Things*, ebook, loc 495.6/965.

¹⁵⁰ Spuybroek, *The Sympathy of Things*, ebook, loc 762.2/965.

can work with concepts like beauty in a new way, by tuning its dimensionality, its encodings, and by placing it into many different ontologies and contexts.¹⁵¹ In such a scenario, stones will not just act like plants but they will actually talk to plants.

Spuybroek_TST:

The Internet is not particularly modern or in any way related to space; on the contrary, it is a deeply Gothic project—not because the Web is about veins and fibers and the Gothic loves fibrous systems but because it interrelates work and aesthetics. In contrast to television, the Web is there to make things. Today it still acts chiefly as though it is part of media culture or, worse, visual culture—still part of that separation between talking about things and making things—but there is nothing inherent in its structure to make it do so; it is mere habit. On the contrary, when all mediation has evaporated, it could emerge as a distributed, generalized factory, like Schelling's nature, a platform of productivity—pure abstraction that strives to produce real things.¹⁵²

I long for the day when we can see objects forming, like pools of mud, flowers on a wall, or clouds in the sky, as pure products in a context of pure productivity, without any intermediaries. There will be no desires, no opinions, no critics, no designers, just pure flourishing.¹⁵³

At the end of his journey, Ruskin found himself in a generalised factory standing on a platform for productivity. Unlike the rich and beautiful opening of the book which unfolds through fictional travels and stories of a probe called Ruskin, the end of adventure strips us of all that complexity and sophistication. Sympathy of objects, and hybridity of their interactions, are translated to a logistical network purged from desires and opinions. A natural machine. Pure flourishing and pure abstraction that strives to produce real things. What happened to fantasy? Has *Doctor John Ruskin Who* ended his journey and found a home in the utopia of *Spuybroek_TST*? We wonder what he would say when stripped of desires and opinions?

...

End of the Second Scene

SCENE III: A BLACK BOX

The last one to talk about code in the cloud of architecture and about encoding architecture in the context of information is *Banham_ACW*. Unlike *Schumacher_AOA* and *Spuybroek_TST* who

¹⁵¹ This work could be thought of as an example of such a strategy.

¹⁵² Spuybroek, *The Sympathy of Things*, ebook, loc 772.9/965.

¹⁵³ Spuybroek, *The Sympathy of Things*, ebook, loc 774.5/965.

thought of the network as sympathy of its objects and a system of communication, *Banham_ACW* starts by provoking both of them, saying he does not know what architecture is. He is treating architecture like a black box,¹⁵⁴ in other words, like a secret with which he can operate and tell stories.

Banham_ACW:

A Black Box: The Secret Profession of Architecture

I propose to treat the architectural mode or presence as a classic "black box", recognised by its output though unknown in its contents.¹⁵⁵

Architecture for *Banham_ACW* is an open question. Its encoding changes according to the atmosphere around it; its internal mechanism is unknown. Nevertheless, it's already been here for more than two thousand years. It has never been clear what it is, but its secret and formalisations were always acquiring new faces and new articulations. How one poses the question of architecture, and how one talks about this secret is the challenge. The black box is one way of stating the problem. We would speculate and say that this is an adequate way of talking about secrets in the 21st century. After getting everyone's attention, *Banham_ACW* continues by stating what is not in the black box of architecture.

Banham_ACW:

Let us then re-divorce what should never have been joined together in this opportunistic marriage-of-convenience. Throw out all the Zulu kraals, grain-elevators, hogans, lunar excursion modules, cruck-houses, Farman biplanes and so forth, and look again at "this thing called architecture" in its own right, as one of a number of thinkable modes of design which, for some reason, has come to occupy a position of cultural privilege in relation to the construction industry.¹⁵⁶

By distinguishing what it is not, he doesn't have to define what architecture is. He keeps it a secret that even he doesn't know. The architectural profession is still a black box. *Banham_ACW* distinguishes in order to abstract and relate. He is in a circle, trying to leave the generic—its machines and infrastructure—in order to think, and then come back to them.

Banham_ACW:

What then would distinguish the products of this black box from those of other thinkable modes? Functional or environmental performance? Beauty of form or deftness of space? Truth to materials or structural efficiency? These are

¹⁵⁴ "Black Box," *Wikipedia*, August 12, 2018, https://en.wikipedia.org/w/index.php?title=Black_box&oldid=854586942.

¹⁵⁵ Banham, *A Critic Writes: Selected Essays*, 293.

¹⁵⁶ Banham, *A Critic Writes: Selected Essays*, 294.

*all qualities for which the architectural profession habitually congratulates itself, but a Buckminster Fuller dome or an Eskimo igloo can usually beat architecture on all six counts, and so can a lot of other buildings, ships, air liners, inflatables and animal lairs. So why do we not admit that what distinguishes architecture is not what is done—since, on their good days, all the world and his wife can apparently do it better—but how it is done. We can distinguish that “how” in two crucial ways in the actual behaviour of architects as they perform their allotted tasks as building designers. The first is that architects—almost uniquely among modern design professionals—propose to assume responsibility for all of those six aspects of good building set out above, and to be legally answerable to the client for their proper delivery.*¹⁵⁷

After spending some time in the loop, he comes out with a beautiful articulation of architecture that is able to unite the elements that he distinguished as non-architectural under a more abstract umbrella. It is the same umbrella that Spuybroek_TST and Schumacher_AOA were using, one of bringing things together and in relation to each other, but more abstract. Architects assume responsibility for bringing different elements and qualities together and, even more, for the way they do so. Responsibility in relating is Banham_ACW's way of giving dignity to a tradition of architecture. This statement becomes more and more challenging when we see the world as a place of increasing choices, abundant in form and information. In this sense, Banham_ACW continues by putting on the table one of his favourite gadgets: *the great gizmo*. A small and sophisticated element, a point that brings potential and responsibility into space by articulating its context. It is a utilising fiction. *The great gizmo* encodes space in terms of lightweight infrastructure.

*Banham_ACW:
The great gizmo*

The man who changed the face of America had a gizmo, a gadget, a gimmick—in his hand, in his back pocket, across the saddle, on his hip, in the trailer, round his neck, on his head, deep in a hardened silo.

*[...] Like this: a characteristic class of U.S. products—perhaps the most characteristic—is a small self contained unit of high performance in relation to its size and cost, whose function is to transform some undifferentiated set of circumstances to a condition nearer human desires. The minimum of skill is required in its installation and use, and it is independent of any physical or social infrastructure beyond that by which it may be ordered from catalogue and delivered to its prospective user.*¹⁵⁸

¹⁵⁷ Banham, *A Critic Writes: Selected Essays*, 294.

¹⁵⁸ Banham, *A Critic Writes: Selected Essays*, 109.

In *Banham_ACW*'s view, architecture—when treated as a black box, and doped by the potentiality of *the great gizmo*—articulates environments that he loves and celebrates the most. Here it is, one of his great passions: Los Angeles, a city beyond categorisation, a place where paradoxes meet, and where *Banham_ACW* feels good. His eyes glow as he starts talking about LA.

Banham_ACW:
Master builders

*Los Angeles's range of environment, from the beaches to the foothills and the deserts, is without comparison in the other metropolises of the world; no local building material is good enough to establish a hegemony over the range of importables; the habits and tastes are anything you like to name. The result is a kaleidoscope (other clichés like 'spectrum' or 'mosaic' are too orderly in their implications) of styles that can produce not only the Greenes' beloved woodwork, Irving Gill's restrained Mission style and Schindler's freeassociation ad-hockery, but also the fantasies of Hollywood Baroque, the keen sobrieties of Charles Eames's steel house or the total originality of Simon Rodia's ceramic-cruled towers in troubled Watts.*¹⁵⁹

Los Angeles, in *Banham_ACW*'s terms, is a celebration of the generic condition. A place of potentials and transformations, where anything is possible. A place where the global and the local talk to each other. Generic city,¹⁶⁰ generic medicine, generic brand, drug, term, filter, infrastructure on the one hand, and on the other a gene, a genesis, a creation, being born. A place where one can simultaneously be equal to anything, and a place where the potentials tremble. Everything is similar and anything is possible. A ground for new architecture. He continues with a smile.

Banham_ACW:
*The mixture defies categorisation, but creates an open, flexible situation in which a determined client and an imaginative architect can do their thing without too much fear of what the neighbours may think. A home in Pasadena or Hollywood, or Malibu or Huntington Beach, can be (as Frank Lloyd Wright said of a different situation) "a more organic expression ... the delightful thing that imagination would have it"—which is rough on us historians, but very good for architecture.*¹⁶¹

In the same move, the generic defies categorisation, and inverts history and tradition. The history of planning becomes the planning of history. It is a continuous space of transformation. While

¹⁵⁹ Banham, *A Critic Writes: Selected Essays*, 173.

¹⁶⁰ Koolhaas, "Generic City."

¹⁶¹ Banham, *A Critic Writes: Selected Essays*, 174.

in it, as curious as he is, *Banham_ACW* starts to drift away and play with the modernist legacy, its first encodings, and its transformations on the journey to America. It is his way of planning history. Or is it?

Banham_ACW:

Why, in a word, do we have to rewrite the history of the Modern Movement?

*Not because that history is wrong; simply because it is less than life size. The official history of the Modern Movement, as laid out in the late Twenties and codified in the Thirties, is a view through the marrow-hole of a dry bone—the view is only possible because the living matter of architecture, the myths and symbols, the personalities and pressure-groups have been left out. The choice of a skeletal history of the movement with all the Futurists, Romantics, Expressionists, Elementarists and pure aesthetes omitted, though it is most fully expressed in Giedion's *Bauen in Frankreich*, is not to be laid to Giedion's charge, for it was the choice of the movement as a whole. Quite suddenly modern architects decided to cut off half their grandparents without a farthing.*¹⁶²

Moderns in a manner similar to *Schumacher_AOA* wanted a blank slate, autonomy, discipline, and a codex. All of this was a part of the programme and as *Banham_ACW* puts it, it was not that simple, since architecture and its materials have always flirted with the symbolic, with different tribes which were trying to inscribe totemic and ritualistic values into them. They went far beyond pure reason, they were still architects.

Banham_ACW:

In doing so, modern architecture became respectable and gutless; it entered on what Peter Smithson has justifiably called its Academic phase, when it became a style with books of rules, and could be exported to all parts of the Western world. But having set itself up as something more than a style, as a discipline of pure reason, it had to double-talk fast and frequently to explain its obsession with certain materials, particularly glass and that smooth white reinforced concrete that never existed outside architects' dreams and had to be faked in reality with white rendering. Clearly, these materials were symbolic, they were totemic signs of power in the tribe of architects. But while concrete has never lacked respectable medicine-men, from Auguste Perret to Pierluigi Nervi, to maintain its mana, the image of Gropius as the official witch-doctor of glass has never looked very convincing. On the other hand the

¹⁶² Banham, *A Critic Writes: Selected Essays*, 37.

*fanaticism of a Bruno Taut possessed by the spirit of Paul Scheerbart, as by a voodoo deity, has much more the air.*¹⁶³

And as he continues, by going more and more into detail, he gets lost in assigning particular roles and motives to the main protagonist of the modern movement. As time goes by, it is getting increasingly difficult to keep up the enthusiasm; somehow the words are missing and details are abundant. *Banham_ACW* is getting tired.

Banham_ACW:

*This is not to say that we now throw away the history of glass in modern architecture as it has been established so far—the position of Muthesius and Gropius among its prophets is not demolished, only diminished. We have to find some space for Scheerbart, as Giedion now clearly recognizes. The problem, which is not to be settled by a single article, is—how much space?*¹⁶⁴

As he is losing his grip in trying to rewrite history, he stops and remembers LA. His eyes suddenly regain their glow. He drops the details into the generic ocean, plays the audio guide in his car, and ends with a twist.

Banham_ACW:

*Now it is the well-known hypothesis of my California colleague David Gebhardt that what Hitchcock and Johnson did to the International Style would have happened to it anyway because “as each new style came across the Atlantic to America, its ideology fell into the ocean and was never seen or heard from again.”*¹⁶⁵

The details are gone. *The Secret Profession of Architecture* has been safely kept secret. *Banham_ACW* is again playing with the *black box* and the *great gizmo*. In his eyes, LA is flourishing as a kaleidoscope of styles and range of fantastic environments. Reyner Banham loves Los Angeles.

...

End of the Third Scene

As the Third Act ends, information through coding acquires an architectural face. There is no conclusion, but a spectrum of architectural cyphers that are trying to negotiate ways in which technology relates symbolic encodings to architectural characters. *Schumacher_AOA* and *Spuybroek_TST* in their approaches to coding went far away from the atmosphere cultivated in *Xenotheka*, while *Banham_ACW*, by treating architecture as a *black*

¹⁶³ Banham, *A Critic Writes: Selected Essays*, 37.

¹⁶⁴ Banham, *A Critic Writes: Selected Essays*, 38.

¹⁶⁵ Banham, *A Critic Writes: Selected Essays*, 285.

box, was in a way flirting with its ideas. At the end of this discussion the empty table is full of elements and thoughts:

- Code, Style, Architecture.
- Three Actors, Three Encodings, Three Manners.
- *Schumacher_AOA*, *Spuybroek_TST*, *Banham_ACW*.
- Autopoietic System, Gothic Ontology, Black Box.
- Parameters, Sympathy, The Great Gizmo.
- Design of a Theory, Ecology of Design, Kaleidoscope of Styles.

...

End of the Third Act

PLENTIFUL PLAY
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ACT IV: CIPHER

ACT IV: CIPHER

ACT IV: CIPHER

ACT IV: CIPHER

ACT IV: CIPHER

ACT IV: CIPHER

ACT IV: CIPHER

ACT IV: CIPHER

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DRAMATIS PERSONAE

The fourth turn and the last act in this unfolding of the concept of *information* is not a conclusion or an ending, but rather an opening up of space for new explorations, adventures, and conversations sparked by the concepts of *information*, *data*, *code*, and *cipher*. Act IV is a personal way of making new keys for further plays.

An indexed idea, a concept, a topic, or a foreign book is a cipher that can be unlocked when placed in *Xenotheka*. But again there is a trick. With each new key, all the locks change. The act on *cipher* is going to be different in its form to the previous acts. *Xenotheka* is expected to host and get to know alien books. There are going to be three of them. They are different in kind. Each one presents a peculiar way of posing a question to the library. For *Xenotheka*, these three foreign books are guests; it should accommodate them and make them feel comfortable. For us, as the players of the *Informational Instrument*, these three guests are three indexes that we are sending in order to continue to talk and to explore our interests in new ways. With each new question, *Xenotheka* shows a new face. In Act IV, the three guests—the new actors—will communicate implicitly without saying a word; they will be characterised in terms of their friends. The first guest is a stranger, and before starting an intimate conversation, we would like to hear his friends talk about him. The second guest is fictional, an idea, a book that has not been written and, as such, refuses to speak out loud. And lastly, it would be inappropriate for the third guest to make statements since it is composed of the sentences we are writing now. This creates a delicate situation. Instead of speaking out loud, these protagonists will be characterised by *Xenotheka*, its galaxy, by their friends, by the characters they themselves will form, index, and be a part of. Let us introduce the three guests.

The first one is a foreigner who was recommended to us by a friend as a book that might be of interest for our

work. We decided to invite it to *Xenotheka*, to get to know it, and see how the library accommodates it. In *Xenotheka* it carries a name:

*Eco_From the Tree to the Labyrinth*¹⁶⁶

The second guest is fictional, a probable but a non-existent persona, a composed provocation, a probe, a mutant, and an interest of ours. It consists of information, architecture, and drama, concepts that we care and like to talk about. It is a mutant of *Brillouin_Science and Information Theory*,¹⁶⁷ *Koolhaas_SMLXL*,¹⁶⁸ and *Shakespeare_Romeo and Juliet*.¹⁶⁹ Its body is composed of these three texts compiled together. This fictional character has decided not to express itself publicly. As a synthetic persona, it can have friends, and we hope its friends will articulate an interesting story about it. We named this probe:

B_SIT_K_SMLXL_S_RAJ

The last guest is not a guest at all; it is a curious and personal question, a contemplation about this text.¹⁷⁰ Let us formulate it in a few ways:

- Which books in *Xenotheka* are friends of a *Play Among Books*?
- With which books from the library should we develop a closer relationship while exploring topics constitutive for a *Play Among Books*?
- Which conceptual persona is indexed by our text?
- Which shelf in *Xenotheka* offers a temporary home for this alien text?

¹⁶⁶ Umberto Eco, *From the Tree to the Labyrinth: Historical Studies on the Sign and Interpretation*, trans. Anthony Oldcorn, First Edition (Cambridge, MA: Harvard University Press, 2014), ebook.

¹⁶⁷ Brillouin, *Science and Information Theory*.

¹⁶⁸ Koolhaas, Mau, *S,M,L,XL*.

¹⁶⁹ William Shakespeare, *The Tragedy of Romeo and Juliet*, 1597, ebook, <http://www.gutenberg.org/ebooks/1112>.

¹⁷⁰ PAB is composed of the text of *Plentiful Play*, and *Informational Instrument*.

We will give this text the code name:

PAB

Three alien texts are closely related to our interests: one recommended, one crafted as a probe, and one as a meditation on our writing. The scenario of the Fourth Act is to let these three alien texts enter *Xenotheka* and see how the galaxy changes and how they settle. When the guests start to feel comfortable, we will ask their friends to talk about them. To see who their friends are and how they talk and index them is the plot and the challenge of the Fourth Act.

THREE GUESTS:
THE TALK OF THEIR FRIENDS

PROLOGUE

Three guests are on their way. The Fourth Act is their entrance to the library, a journey from being an alien to becoming a guest and, we hope, a friend. Three guests are characters, conceived and conceptualised in different ways. Each actor is a cipher to be deciphered and opened up by a key articulated in *Xenotheka*'s terms. Act IV is a fast glimpse of their adventure in *Xenotheka* indexed by their friends.

SCENE I: GUESTS APPROACHING

Three guests are knocking on the door. Before they enter, let us ask *Xenotheka* and its characters to gossip and speculate about the atmosphere and the mood that the aliens might bring. Which books from the library would consider them as friends and which characters (shelves) would potentially accommodate the alien books if they were to enter?

Xenotheka replies, in its own terms, through its own *atom-letters*, its own dictionary. The foreign books have no say in it. They still have not entered. At the moment, they are being indexed by an already existing galaxy of actors.○2.35 The answer from

Xenotheka is a projection. At first glance, *B_SIT_K_SMLXL_S_RAJ* and *PAB* find themselves indexed together by *atom-letter n13e11*. These two foreigners are seemingly interested in similar topics. They both talk about architecture, information, and language. This much we know. They are indexed by the same character, which in turn is an indicator of their character.

```
n13 e11
{ B _ SIT _ K _ SMLXL _ S _ RAJ , PAB , }
{ Wiener_Cybernetics, Hofstadter_Gödel Escher Bach,
Schrodinger_What is Life, Delanda_Philosophy and Simulation,
Foucault_Archaeology of Knowledge, Popper_The Logic of
Scientific Discovery, Saussure_Course in General Linguistics,
Brillouin_Science and Information Theory, Barthes_The Language
of Fashion, Eco_How to Write a Thesis, Einstein_Relativity }
```

Character *n13e11* is excited, it provides a pleasant and challenging atmosphere for both alien texts. It is a home to actors who in this context are interested in discussing information, language, knowledge, philosophy, and physics, among other topics. The neighbouring character—*n19e6*—adds to the mood by bringing architecture to the discussion. 02.35 These two strangers are introduced and indexed through their friends and soon they are not so foreign anymore. A book is never alone.

The third alien, *Eco_From the Tree to the Labyrinth*, gets the attention of another cell where he is welcomed by a close friend, *Eco_On Literature*, and a group of his friends that gather and index a persona in love with language and literature: *n31 e13*.

```
n31 e13
{ Eco _ From the Tree to the Labyrinth }
{ Eco_On Literature, Derrida_Signature, Deleuze_Desert
Islands and Other Texts, Blanchot_The Book to Come, Serres_
Geometry, Zizek_Less Than Nothing, Lacan_The Psychoses
Seminars of JL, Derrida_Of Grammatology, Eco_Serendipities
Language & Lunacy, Blanchot_The Space of Literature,
Bachelard_The Poetics of Space, Nancy_The Ground of the Image,
Derrida_Copy Archive Signature },
```

Xenotheka's probabilities feel convincing. It is time for the strangers to enter *Xenotheka* and add to its articulation. We will open the door.

...

End of the First Scene

n1e1		n3e1	n4e6	n5e12	n6e14
Eisenman Notes on Conceptual Architecture		Eisenman The End of the Classical	Lavin Flash in the Pan, Schumacher The Autoipoiesis of Architecture Vol 2, Schumacher The Autoipoiesis of Architecture Vol 1, Vidler Histo...	Sykes Hays Architectural Theory 1993 2009, Rakatansky Tectonic Acts of Desire and Doubt, Bo Bardi Stones Against Diamo...	Banham A Critic Writes, Sudjic The Edifice Complex, Rogers A Place for All People, Jencks The Story of Post Modernism, Be...
n7e2	n8e1			n11e1	n12e12
Chomsky Language and Mind, Chomsky Aspects of the Theory of Syntax	Chomsky On Language			Aureli Less Is Enough	Sorkin All Over the Map, Mumford The Culture of Cities, Koolhaas SMLXL, Hollis Cities Are Good for You, Le Corbusier The ...
n19e1		n19e1			n19e8
Wiener Cybernetics, Hofstadter Godel Escher Bach, Schrodinger What Is Life, Delanda... PAB, B_SIT_K_SMLXL_S_RAJ		Haraway Cyborg Manifesto			Ponte The House of Light and Entropy, West Scale The Universal Laws of Growth, Easterling Extrastatecraft, Castells et al Another Econom...
n19e9	n28e1		n22e2	n29e1	n36e4
Cache Projectiles, Spuybroek The Sympathy of Things, Carpo The Second Digital Turn, Deleuze Guattari A Thousand Plate...	Latour Reassembling the Social		Lefebvre Critique of Everyday Life, Auge The Future	Marx Engels The Communist Manifesto	Castells The Power of Identity, Castells The Rise of the Network Society, Castells Networks of Outrage and Hope, Marx Cap...
n26e5	n26e2	n27e1		n29e1	n38e5
Serres Latour Conversations on Science, Culture, and Time, Baudrillard The Vital Illusion, Freud Beyond the Plea...	Latour We Have Never Been Modern, Foucault The History of Sexuality Vol 1	Latour Facing Gaia		Fukuyama The End of History and the Last Man	Hayek The Constitution of Liberty, Hayek The Road to Serfdom, Herman Chomsky Manufacturing Consent, Weizman The Least of...
n31e13	n32e2	n33e1		n35e2	n36e21
Eco On Literature, Derrida Signature, Deleuze Desert Islands and Other Texts, Blanchot The Book to Come... Eco From Tree to the Labyrinth	Girard Violence and the Sacred, Girard Sacrifice	Foucault History of Madness		Sedlacek Economics of Good and Evil, Arendt On Revolution	Kittler The Truth of the Technological World, Taleb The Black Swan, Hofstadter I Am a Strange Loop, Graeber D...
n37e8	n38e1		n48e1	n41e3	n42e16
Harman Bells and Whistles, Delanda Harman The Rise of Realism, Harman Towards Speculative Realism, Buehlmann Mathematics...	Barthes Mythologies		Arendt The Human Condition	Jung Archetypes and the Collective Unconscious, Jung Two Essays in Analytical Psychology, Jung Alchemical Studies	Serres The Five Senses, Ruskin The Seven Lamps of Architecture, Serres Statues, Vitruvius The Ten Books of Architect...
n43e2		n45e1		n47e2	n48e12
Meillassoux After Finitude, Badiou In Praise of Mathematics		Descartes Discourse on the Method		Nietzsche Beyond Good and Evil, Bacon Novum Organum	Borges Collected Fictions, Hugo Les Misérables, Shelley Frankenstein or the Modern Prometheus, Serres Biogea, Musil...
n49e6	n58e3	n51e1	n52e4	n53e5	n54e28
Russell The Problems of Philosophy, Kant Critique of Pure Reason, Badiou Mathematics of the Transcendent, Badiou Number...	Spinoza The Essential Spinoza Ethics, Spinoza The Ethics, Descartes Meditations	Leibniz Theodicy	Cicero Tusculan Disputations, Hobbes Leviathan, Aristotle Ethics, Aristotle Poetics	Rousseau The Social Contract, Aristotle Politics, Machiavelli The Prince, Plato Timaeus, Plato The Republic	Joyce Ulysses, Dickens A Tale of Two Cities, Tolstoy War and Peace, Eco The Name of the Rose, Eco Baudolino, Tolstoy...



○2.35
 Xenotheka looking at its guests. Black cells: books from Xenotheka, white highlights: guests,
 rendering_229_25_RB_0609_r_50it21d_guests_2.

SCENE II: GRANTING HOSPITALITY

By entering *Xenotheka*, the aliens become guests. The library shifts; the galaxy changes; it is spelt out in new *atom-letters*. Its dictionary is different now; it is modified and influenced by the new arrivals who are starting to feel at home. Each one has found a shelf and become a constitutive part and an index of a new character. One could say that the guests have been granted hospitality by their new friends. Here is how they settled, how the new galaxy accommodates them, and how they have become part of its new articulation.○2.36

The new actors have found their temporary homes in the same part of the galaxy○2.36—actually in the neighbouring cells. This is promising, it implies that this neighbourhood is the one that accommodates concepts close to our interests. Let us continue and explore the atmosphere of this neighbourhood for a moment (*atom-letters* n12e6, n18e7, n24e37 and their friends).

n12e6

B _ SIT _ K _ SMLXL _ S _ RAJ], Wiener_Cybernetics, Delanda_Philosophy and Simulation, Brillouin_Science and Information Theory, Popper_The Logic of Scientific Discovery, Foucault_Archaeology of Knowledge

n18e7

Eco_From the Tree to the Labyrinth], Eco_Serendipities Language & Lunacy, Foucault_The Order of Things, Derrida_Of Grammatology, Lacan_The Psychoses Seminars of JL, Hofstadter_Gödel Escher Bach, Saussure_Course in General Linguistics

n24e37

Kittler_The Truth of the Technological World, Eco_On Literature, Serres_The Five Senses, Serres_Geometry, Derrida_Signature, McLuhan_The Gutenberg Galaxy, Serres_Statues, Blanchot_The Book to Come, Benjamin_The Work of Art in the Age of M, Serres_Biogea, Hofstadter_I Am a Strange Loop, Serres_Latour_Conversations on Science, Culture, and Time, McLuhan_Understanding Media, Cache_Projectiles, Ponte_The House of Light and Entropy, Ranciere_Aisthesis, Virilio_A Landscape of Events, Barthes_Mythologies, Deleuze Guattari_A Thousand Plateaus, Serres_Thumbelina, Serres_Rome, Spuybroek_The Sympathy of Things, Freud_The Psychopathology of Everyday, Bachelard_The Poetics of Space, Abbott_Flatland, Blanchot_The Space of Literature, Max Bill_Form, Function, Beauty, Worringer_Abstraction and Empathy, Lefebvre_Rhythmanalysis, Nancy_The Ground of the Image, Schlemmer Nagy_The Theater of the Bauhaus, Derrida_Copy Archive Signature, Barthes_The Language of Fashion, Eco_How to Write a Thesis, PAB, Nancy_Intoxication, Ayache_The Blank Swan, Plato_The Republic, Plato_Symposium, Aristotle_Ethics, Confucian Analects

The three actors index a myriad of different topics. They again form a spectrum going from knowledge and philosophy via language, communication, and information, to technology and architecture. This is a vast, challenging, and open space, but also

n1e3	Russell The Problems of Philosophy, Kant Critique of Pure Reason, Wittgenstein Tractatus Logico Philosophicus	n2e1	Meilloux After Finitude	n3e1	Badiou Number and Numbers	n4e2	Badiou In Praise of Mathematics, Badiou Mathematics of the Transcendent	n5e1	Deleuze Guattari What Is Philosophy	n6e5	Chomsky On Language, Chomsky Language and Mind, Chomsky Aspects of the Theory of Syntax, Feynman QED The Strange Theory of Li...
n7e1	Descartes Meditations							n11e1	Deleuze Difference and Repetition	n12e6	Wiener Cybernetics, B_SIT_K_SMLXL_S_RAJ
n13e2	Spinoza The Essential Spinoza Ethics, Spinoza The Ethics					n16e3	Harman Bells and Whistles, Harman Towards Speculative Realism, Delanda Harman The Rise of Realism	n17e2	Deleuze Desert Islands and Other Texts, Buehlmann Mathematics and Information Serres	n18e7	Eco From the Tree to the Labyrinth, Eco Serendipities Language & Lunacy, Foucault The Order of Things, Derrida Of Grammatology, Lacan...
n19e1	Leibniz Theodicy	n20e1	Descartes Discourse on the Method	n21e1	Einstein Relativity	n22e1	Schrodinger What is Life	n23e3	Zizek Less Than Nothing, Freud Beyond the Pleasure Principle, Harman Immaterialism Objects and Social Th...	n24e37	Kittler The Truth of the Technological World, PAB, Eco On Literature, Serres The Five Senses, Serres Geometry, Derrida Signature, McLuhan The Gu...
n26e4	Plato The Republic, Plato Symposium, Aristotle Ethics, Confucian Analects	n26e3	Plato Timaeus, Lucretius On the Nature of Things, Bacon Novum Organum	n27e1	Newton The Mathematical Principles of Natural Philosophy	n28e1	Darwin On the Origin of Species	n29e11	Jung Archetypes and the Collective Unconscious, Latour Facing Gaia, Jung Alchemical Studies, Jung Two Essay...	n30e28	Sykes Hays Architectural Theory 1993 2009, Banham A Critic Writes, Sudjic The Edifice Complex, Lavin Flash in the Pan, Bo B...
n31e1	Hobbes Leviathan	n32e1	Cicero Tusculan Disputations			n34e3	Nietzsche Beyond Good and Evil, Arendt The Human Condition, Foucault The History of Sexuality Vol 1	n35e4	Auge The Future, Sedlacek Economics of Good and Evil, Latour We Have Never Been Modern, Latour Reassembling the Social	n36e3	Lefebvre Critique of Everyday Life, Aureli Less Is Enough, Haraway Cyborg Manifesto
n37e1	Galilei Discourse on Floating Bodies	n38e1	Aristotle Politics	n39e1	Rousseau The Social Contract	n40e1	Arendt On Revolution	n41e1	Fukuyama The End of History and the Last Man	n42e2	Marx Engels The Communist Manifesto, Marx Capital Volume 1
		n44e1	Machiavelli The Prince	n45e1	Aristotle The Athenian Constitution	n46e1	Hayek The Constitution of Liberty	n47e1	Hayek The Road to Serfdom	n48e4	Castells The Power of Identity, Castells et al Another Economy Is Possible, Castells The Rise of the Network Society, Castells Netw...
n49e35	Joyce Ulysses, Borges Collected Fictions, Hugo Les Misérables, Dickens A Tale of Two Cities, Eco The Name of the Rose, Tolstoy ...	n50e19	Ruskin The Seven Lamps of Architecture, Vitruvius The Ten Books of Architecture, Alberti Ten Books on Architect...	n51e2	Devlin The Unfinished Game, Smith Wealth of Nations	n52e7	Taleb The Black Swan, Graeber Debt, Negroponte Being Digital, Zizek Demanding the Impossible, Devlin Finding Fibonacci, Ar...	n53e4	Alexander A Pattern Language, Weizman The Least of All Possible Evils, Herman Chomsky Manufacturing Consent, Alexa...	n54e28	Sorkin All Over the Map, Mumford The Culture of Cities, Koolhaas SMLXL, Hollis Cities Are Good for You, Rogers A Place for...



02.36
Xenotheka, white highlights: characters of interest, rendering_232_18_RB_0609_r_50it22d.

one filled with particular flavours and unusual atmospheres. The friends of the three new actors have gathered and are starting to talk. They are telling stories about their new friends, their concepts, characters, and interests. Let us host this gathering, listen to how books talk about their friends and enjoy the unfolding of the story in the next three scenes.

...

End of the Second Scene

SCENE III: INVITING A STRANGER

First Guest:

Eco_From the Tree to the Labyrinth

say → 665, mean → 587, thing → 567, language → 543, word → 505, fact → 418, know → 404, speak → 389, case → 385, animal → 380, use → 367, sense → 363, point → 361, term → 356, like → 348, text → 348, way → 344, think → 321, form → 311, world → 305, name → 304, concept → 300, give → 295, object → 292, make → 291, knowledge → 291, example → 290, est → 287, time → 286, sign → 276, aristotle → 270, appear → 263, metaphor → 262, thomas → 260, idea → 259, century → 244, different → 242, call → 241, man → 240, work → 238, understand → 236, see → 231, god → 228, encyclopedia → 227, dog → 224, art → 224, figure → 223, come → 220, nature → 219, medieval → 214¹⁷¹

The first guest to enter *Xenotheka* is a collection of essays by Umberto Eco titled *From the Tree to the Labyrinth, Historical Studies on the Sign and Interpretation*. He has found his home in character *n12e6* among friends. He looks comfortable.^{○2.36} Let us hear and imagine what he might be about by letting his friends talk and index him.

n12e6

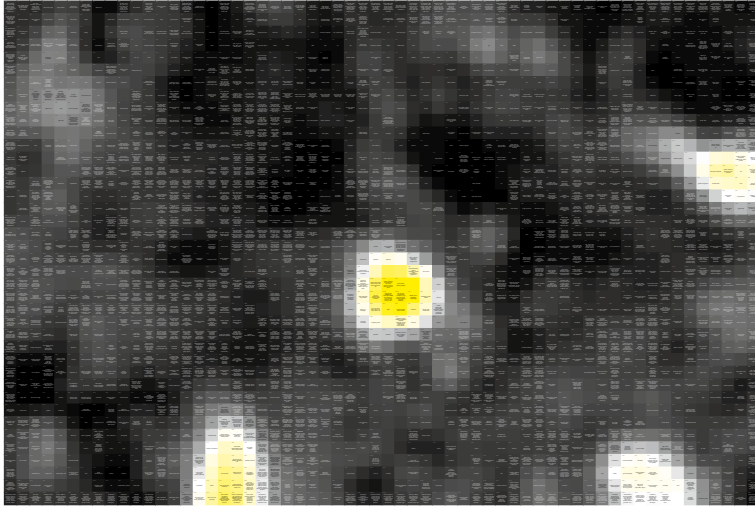
Eco_From the Tree to the Labyrinth
Eco_Serendipities Language & Lunacy
Foucault_The Order of Things
Derrida_Of Grammatology
Lacan_The Psychoses Seminars of JL
Hofstadter_Gödel Escher Bach
Saussure_Course in General Linguistics

While listening to what his friends are saying and by looking at their names and titles, it seems that *Eco_From the Tree to the Labyrinth* is greatly concerned with language (*Eco_Serendipities Language & Lunacy*, *Derrida_Of Grammatology*, *Saussure_Course in General*

¹⁷¹ *Eco_From the Tree to the Labyrinth's* dictionary of the most frequent terms.

Linguistics) and with the ways in which we create, organise, and think about knowledge (*Foucault_The Order of Things*, *Lacan_The Psychoses Seminars of JL*, *Hofstadter_Gödel Escher Bach*). For him, it is a journey from the tree to the labyrinth, from a dictionary to an encyclopaedia and back.

When seen in the context of *Xenotheka*, the face of *Eco_From the Tree to the Labyrinth* lights up the galaxy and his most prominent concepts start to shine. This is him articulated in terms of *Xenotheka* of which he is now a constitutive part, and no longer a stranger to it. 0.237 His interests give the galaxy four strong glimmers, all concerned with language, each one with a different flavour. Here they are, four glimmers, four fictions.



0.237

0 1

Face of *Eco_From the Tree to the Labyrinth*,
rendering_232_14_RW_4060_r_50it22d.

Glimmer 1. The strongest highlight, the biggest passion of *Eco_From the Tree to the Labyrinth* is language in its encyclopaedic labyrinth, its different meanings, and ways of dealing and organising knowledge within it.

n1412 e140 {duo, arte, turin, compendium, combinatory, luigi, sive, **philological**, hermann, petrarch, **allegorical**, cosmography, philosophie, miscellany, tra, forgery, **semiotics**, geoffrey, mnemonic, chez, ludovico, **cratylus**, dionysius, **libri**, umberto, scriptural, lille, **analytics**, albin, nella, **lingua**, scholasticism, dante, **isidore**, predication, magna, **semantics**, historiographical, **synecdoche**, vulgate, mersenne, greimas, differentia, intensional, studi, eco, peirce, forma, rei, arbor, **rebus**, speculum, wilkins, summa, nel, paradiso, moyen, einaudi, synonymy, **encyclopedia**, rorty, denotation, vulgari, porphyry, extensional, **eloquentia**, vero, maistre, inferential, **encyclopedic**, nomen, seq, **mnemotechnics**, secundum, bompiani, austral, thomist, sensus, ars, nam,

[...]

[...]

tesauro, **translatio**, quae, enim, **semiosis**,
estetica, abulafia, manzoni, croce, propter, autem, vattimo,
authentication, bari, vel, laterza, vox, locutio, locutionis,
doctrina, bede, foigny, sicut, nota, averroes, aliud,
boethius, abelard, sententia, canis, naturaliter, kabbalistic,
intellectus, **signum**, **dicitur**, theologiae, suppositio,
priscian, pico, interpretatione, kabbalah, thomistic,
placitum, moerbeke, ockham, **logica**, signa, beatus, maritain,
platypus, marmo, significativa, voces, llull, bruyne, dve,
latratus, porphyrian, **significare**, **significatio**}
n1352 e4 {della, median, humain, quintilian}
n1411 e103 {**dictionary**, dei, aristotle, sic, aristotelian,
thomas, hoc, allegory, re, cum, nova, est, posterior, ergo,
purveyor, simile, **scholastic**, gerard, natura, vegetative,
rosa, hugh, erat, bacon, alia, sacrum, hellenistic, mille,
ita, apocalypse, mendacious, hebrew, chartres, cui,
facta, constriction, zoology, **philo**, voce, canterbury,
anselm, seville, modo, ultima, kern, caro, alighieri, dun,
canine, essais, nisi, moody, interchangeability, quem,
allegorically, augustin, coleridge, stallion, **dictionnaire**,
potentia, parler, forte, quam, gil, alembert, nell, hanc,
novum, johnston, christie, leiden, vere, bestiary, aeneid,
apocryphal, ezeziel, philosophia, liturgical, primum, quibus,
albertus, **universalis**, torah, **hjelmslev**, tantum, rerum,
naturalis, salisbury, aquinas, sed, habet, goff, nobis,
scotus, themistocles, sunt, tamen, quod, quia, ideo, aliquid,
etiam, kircher}

Glimmer 2. Slightly weaker in its intensity, it articulates language through ways and figures of talking. A talk about talking, or thinking about talking, so to speak.

n2359 e37 {**rhetoric**, **commentary**, cite, **metaphorical**,
metaphor, **rhetorical**, **figurative**, pseudo, permutation,
nonexistent, qualm, canonical, trope, **grammarian**, terminus,
maximal, roland, adverb, modus, attribution, roger, sander,
penury, medieval, facsimile, revelatory, nouveaux, republish,
visa, connote, oeil, visualization, latency, mouton,
unidirectional, **polyphonic**, lakoff}
n2299 e6 {edgar, headway, commensurate, para, choses,
vico}
n2358 e27 {paolo, citation, dell, andrea, **alphabetical**,
panofsky, guido, **topic**, **prolegomena**, atlantis, emilio,
cusa, italia, richards, alessandro, thesis, plagiarism,
poetics, abbreviation, curtius, storia, typewrite, advisor,
bibliography, subsection, bibliographical, barocco}
n2239 e4 {morale, doctrinal, knower, cosa}
n2300 e17 {**literal**, pro, **polemic**, **dictum**,
comprehensible, **classification**, **unequivocal**, **unequivocally**,
inexact, indices, michelangelo, **harmoniously**, **poetically**,
vernacular, communicable, oxymoron, comprehensibility}
n2360 e12 {revise, **verbal**, **schema**, perceptual,
abbreviate, interpretive, parenthesis, hypothesize,
classificatory, interpretable, schematism, fodor}

Glimmer 3. This glimmer is different from the other three. It is an interest and passion for literary articulations, and an implicit way of telling stories about language. For us it evokes examples of beautiful characters and stories.

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n838 e6 {horace, repertory, ingenuous, feline, matt,
boa}
n839 e1 {nos}
n837 e3 {bark, biped, beauvais}
n899 e1 {ecce}
n897 e2 {lull, whitewash}
n779 e6 {bucolic, iniquitous, inauspicious, academician,
quarto, laertius}
n958 e3 {marie, fatally, senility}
n840 e5 {elector, jacobin, potestas, revolutionist,
robespierre}
n900 e3 {beau, fez, superannuate}
n959 e2 {cat, appellation}
n960 e3 {lethargy, bien, chaplain}
n780 e5 {parisian, pun, pallid, folio, paternity}
n1018 e3 {retrace, ladder, spider}
n1019 e1 {ingenuously}
n896 e3 {garland, slough, dike}
n1020 e5 {pendant, connivance, providential, nous,
curdle}
n718 e3 {decidedly, blackness, chisel}
n775 e1 {oblong}
n1017 e5 {lightning, shipwreck, gratuitously, clamor,
jug}
n719 e12 {paris, notre, obscurity, nineteen, riot,
malicious, odor, barrack, titanic, orchard, springtime,
indemnity}
n1078 e6 {transfigure, harshness, petrify, enormity,
sorbonne, transfiguration}
n1079 e4 {accomplice, penal, police, culpable}
n1080 e6 {claw, scoff, effusion, pique, populace,
pardonable}

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The last strong highlight in the galaxy is Glimmer 4. It shines with the richness of different ways in which a story can be told. It is about forms of writing.

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n2331 e5 {text, occult, imprecise, impeccable, elegiac}
n2391 e10 {allusion, literary, literature, narrator,
unquestionable, labyrinthine, debatable, mal, pseudonym,
reread}
n2271 e3 {biblical, unnamed, magnum}
n2330 e8 {reader, comedy, chronicler, babel, devotee,
preamble, ptolemy, gourmet}
n2332 e3 {corpus, stratagem, erroneously}
n2270 e2 {greco, storytelling}
n2272 e5 {mystic, fable, mystical, synonym, dreamlike}
n2211 e1 {alexandria}
n2212 e8 {opus, matthew, hermetic, astrology, abstruse,
outgrow, sol, aquarium}
n2390 e31 {novel, narration, textual, timetable, poe,
francesca, virgil, invective, eliot, joyce, aphorism, actress,
gli, roberto, borges, finnegans, mythos, archery, catharsis,
wilde, nerval, longinus, rosicrucians, kells, hypotyposis,
adrienne, stopgap, intertextual, sylvie, jerard, lois}
n2392 e65 {translation, paragraph, gift, gloss,
archive, verdict, mot, equivocation, enthrone, underscore,
autobiography, notoriety, nom, elliptical, foucault,
forgiveness, alice, aujourd, nudity, lapidary, epigraph,
guerre, unpardonable, interiorize, obligate, watchword,
[...]}

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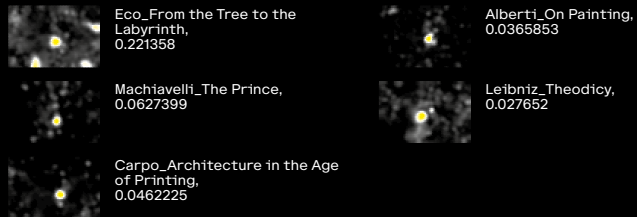
[...]

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floodgate, belgium, apologia, translatable, frontally, bio,
autobiographical, belgian, spiritualize, unforgivable,
specular, deconstruction, emmanuel, genre, racism, donne,
flemish, sein, alumnus, idiomatic, passim, untranslatable,
zeit, hedgehog, jour, avoir, lira, deconstructive, geist,
ish, gibr, soir, donner, folie, portia, shylock, marin,
apartheid, biodegradable}
n2269 e1 {narrate}
n2213 e5 {emblem, bible, procreate, congruence,
accordion}
n2210 e2 {erudite, alexandrian}
n2329 e3 {narrative, notebook, cinematographic}
```

Eco_From the Tree to the Labyrinth loves language and tries to play with it in many different ways. Each of its focuses can trigger an interesting discussion in *Xenotheka*. We will centre our attention on his first glimmer and see who the actors are from *Xenotheka* who have the greatest passion for, and the highest probability to discuss, it. Here they are, already involved in the conversation: *Machiavelli_The Prince*, *Carpo_Architecture in the Age of Printing*, *Alberti_On Painting*, *Leibniz_Theodicy*. ○2.38 When around their new friend, they are talking about ways of organising knowledge. We will join and listen just for a moment to get the flavours, tempers, and an atmosphere of what might be at stake. The hypothesis is that this dialogue offers indexes to *Eco_From the Tree to the Labyrinth*, his understanding of language, and ways of how we can organise knowledge. Let us ask them a question by evoking *Eco_From the Tree to the Labyrinth*:



Main protagonists of *atom-letter n1412 e140*



○2.38

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A tree or a labyrinth, a dictionary or an encyclopedia, in which proportion?

Leibniz_Theodicy has the word at the moment:

I begin with the preliminary question of the conformity of faith with reason, and the use of philosophy in theology, because it has much influence on the main subject of my treatise, and because M. Bayle introduces it everywhere. I assume that two truths cannot contradict each other; that the object of

*faith is the truth God has revealed in an extraordinary way; and that reason is the linking together of truths, but especially (when it is compared with faith) of those whereto the human mind can attain naturally without being aided by the light of faith. This definition of reason (that is to say of strict and true reason) has surprised some persons accustomed to inveigh against reason taken in a vague sense.*¹⁷²

Faith and reason, philosophy and theology: how to navigate between them. Two truths, *Leibniz_Theodicy* assumes, cannot contradict each other. Reason links them together in opening up a new space. *Leibniz_Theodicy* says it is a labyrinth of dictionaries. The key lies in their relations.

In this short indexing, *Machiavelli_The Prince* offers a different perspective of handling knowledge and information. He enjoys, and is a master of operating within, the real by materialising the imaginary. *Machiavelli_The Prince* takes faith into his own hands, inverts *Leibniz_Theodicy* and provides a dictionary for the labyrinth—exactly what a prince needs.

Machiavelli_The Prince

*It is not unknown to me how many men have had, and still have, the opinion that the affairs of the world are in such wise governed by fortune and by God that men with their wisdom cannot direct them and that no one can even help them; and because of this they would have us believe that it is not necessary to labour much in affairs, but to let chance govern them. This opinion has been more credited in our times because of the great changes in affairs which have been seen, and may still be seen, every day, beyond all human conjecture. Sometimes pondering over this, I am in some degree inclined to their opinion. Nevertheless, not to extinguish our free will, I hold it to be true that Fortune is the arbiter of one-half of our actions, but that she still leaves us to direct the other half, or perhaps a little less.*¹⁷³

His friend *Alberti_On Painting* deliberately changes the tone and proceeds with an abstract way of telling a very similar story from another perspective. In his speech, the prince becomes a point, picks up speed, dematerialises, and starts articulating his abstract environment. *Alberti_On Painting* handles knowledge in a geometrical formal way; he is building a perspective and a map to navigate and inhabit the labyrinth. He takes both the tree and the labyrinth and puts them in proportion: 1/3. A ground for projects, an abstract map of any labyrinth.

¹⁷² Gottfried Wilhelm Leibniz and Austin Farrer, *Theodicy, Essays on the Goodness of God, the Freedom of Man and the Origin of Evil*, trans. E. M. Huggard, 2005, <https://www.gutenberg.org/ebooks/17147>.

¹⁷³ Nicoló Machiavelli, *The Prince*, trans. W. K. Marriot, 2016, <https://www.gutenberg.org/ebooks/1232>.

Alberti_On Painting

*The first thing to know is that a point is a sign which one might say is not divisible into parts. I call a sign anything which exists on a surface so that it is visible to the eye. No one will deny that things which are not visible do not concern the painter, for he strives to represent only the things that are seen. Points joined together continuously in a row constitute a line. So for us a line will be a sign whose length can be divided into parts, but it will be so slender in width that it cannot be split. Some lines are called straight, others curved. A straight line is a sign extended lengthways directly from one point to another. A curved line is one which runs from point to point not along a direct path but making a bend. If many lines are joined closely together like threads in cloth, they will create a surface.*¹⁷⁴

And lastly, Carpo_Architecture in the Age of Printing, excited by the words of his friend and master, interrupts him and starts to mediate his thoughts. He catches Alberti_On Painting's point and gives it purpose. He mediates knowledge, brings clarity to complicated matters, untangles the messy threads, and builds a new dictionary of necessities.

Carpo_Architecture in the Age of Printing

*[...] Alberti invented a mechanism (in the literal sense of a mechanical device or piece of hardware) and a method (the software) for translating images into text. The Descriptio transforms a survey map of Rome into a system of points designated only by polar coordinates, without any other form of graphic documentation. In De statua, Alberti expands the same system for use in three dimensions, as a tool for transcribing in alphanumeric format the measurements of the human body. Alberti boasts of the precision and trustworthiness of his method, which would even, so he says, make it possible to produce identical copies of the same statue in locations separated by hundreds of miles or by centuries, or else to carry out simultaneously the production of various parts of a statue in different workshops.*¹⁷⁵

When seen in terms of Eco_From the Tree to the Labyrinth, this discussion can be conceived as a double articulation of, on the one hand, a tree or a dictionary and, on the other hand, of a labyrinth or an encyclopaedia. While Carpo_Architecture in the Age of Printing is clearly embodied in the character of a dictionary, Machiavelli_The Prince, Leibniz_Theodicy and Alberti_On Painting are characterised by a difference in proportion of

¹⁷⁴ Leon Battista Alberti, *On Painting*, Ed. Martin Kemp, Reprint Edition (London: Penguin Classics, 1991), ebook, loc 82.0/211.

¹⁷⁵ Mario Carpo, *Architecture in the Age of Printing: Orality, Writing, Typography, and Printed Images in the History of Architectural Theory*, trans. Sarah Benson, Reprint Edition (Cambridge, MA: The MIT Press, 2017), 122.

relating a dictionary to an encyclopedia. For Eco in simplest terms a semiotic dictionary takes into account properties necessary to distinguish a particular concept from others, and articulates an ontology of language, while various encyclopaedias collect knowledge of the world in different labyrinths; from Pliny to the present day. There is no clear border between the two. The dictionary dissolves out of necessity of its breadth into an encyclopedia, which in its attempt to structure articulates a dictionary. This is just a brief speculation that we hope could be further developed into one of the keys to enter *Eco_From the Tree to the Labyrinth* labyrinths. This is how friends talk about him without mentioning his name. A Cipher.

...

End of the Third Scene

SCENE IV: ASKING A QUESTION

Second Guest:

B_SIT_K_SMLXL_S_RAJ, aka the Mutant

information → 726, use → 486, **problem** → 361, **energy** → 350, obtain → 309, value → 305, **system** → 302, time → 296, give → 296, **entropy** → 292, **case** → 287, **numb** → 285, thou → 278, **condition** → 270, **city** → 263, **function** → 254, new → 247, let → 246, small → 240, **frequency** → 238, result → 234, point → 233, discuss → 231, correspond → 228, large → 227, shall → 211, fig → 208, average → 205, **probability** → 204, increase → 202, consider → 200, example → 196, **observation** → 196, chapter → 195, discussion → 192, section → 188, error → 186, come → 185, represent → 181, code → 179, good → 175, high → 175, letter → 174, define → 171, **make** → 170, require → 169, **symbol** → 167, certain → 165, **thy** → 164, **love** → 164¹⁷⁶

Second to enter *Xenotheka* is a question in form of a mutant composed of three books. It is a dramatic character interested in architecture and information, very similar in its interests to the text that we are writing, but created from the terms put forward by three different actors. It is a fiction, an avatar, an alien book in the library. It has a form but doesn't have meaningful content. It is a fiction we can communicate with, but we can not read it. *B_SIT_K_SMLXL_S_RAJ* is an encoding of a hypothetical book.¹⁷⁷ The moment we pose this question—that is, introduce the mutant to the library—the whole library rearranges itself in order to accommodate it. So what is the new milieu? How have

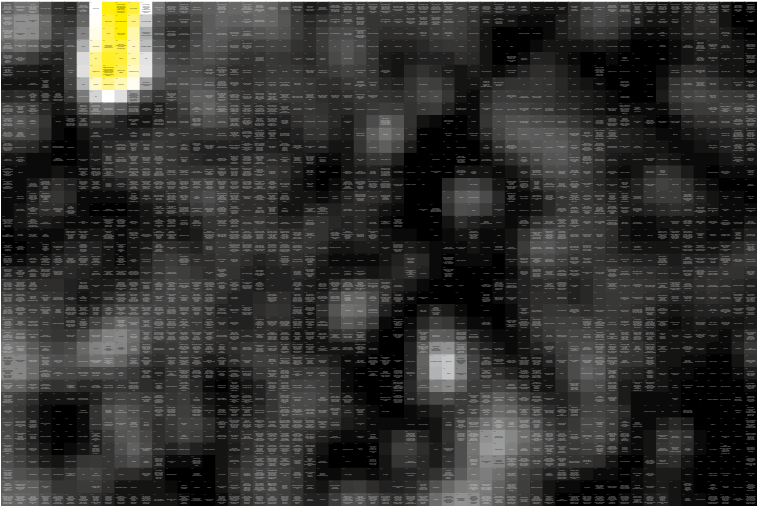
¹⁷⁶ *B_SIT_K_SMLXL_S_RAJ*'s dictionary of most frequent terms.

¹⁷⁷ The synthesising of fictitious texts we can work with, but which are not explicitly there, is one of the beauties of working with data.

our actors arranged themselves? Who are its friends and how do they express themselves? Its friends form a character, *atom-letter n18e7*.○2.36

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n18e7
[B _ SIT _ K _ SMLXL _ S _ RAJ]
Wiener_Cybernetics
Delanda_Philosophy and Simulation
Brillouin_Science and Information Theory
Popper_The Logic of Scientific Discovery
Foucault_Archaeology of Knowledge
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At first glance, it seems that this character is devoid of drama and architectural discussions. The notion of information is present; *Brillouin_Science and Information Theory* is there with his friends. *Koolhaas_SMLXL* and *Shakespeare_Romeo and Juliet* and their friends are still quite far away (*n54e20, n49e35, ○2.36*).










○2.39
Face of *B_SIT_K_SMLXL_S_RAJ*,
rendering_232_14_RW_4060_r_50it22d.

Let us make an inversion and look at *B_SIT_K_SMLXL_S_RAJ*'s face and its concepts for a moment. A different story emerges. *B_SIT_K_SMLXL_S_RAJ* lights up the galaxy in a way that brings together information, architecture, and drama. Unlike our first guest who had four distinct focuses, *B_SIT_K_SMLXL_S_RAJ* has one strong interest. It brings together literary Shakespearean characters and terms with concepts of information and communication. That is our interest as well. *B_SIT_K_SMLXL_S_RAJ* is a question, a provocation, intended to spark a discussion among its friends who are interested in discussing the same concepts it finds interesting.○2.40

Main protagonists of *atom-letter n309 e102*



	B_SIT_K_SM LXL_S_RAJ, 0.137778		Saussure_Course in General Linguistics, 0.0290935
	Brillouin_Science and Information Theory, 0.0800875		Real Estates, 0.0263551
	Shakespeare_Romeo and Juliet, 0.035266		Koolhaas_SMLXL, 0.0224244
	Joyce_Ulysses, 0.0330781		

02.40

Rendering_232_14_RW_4060_r_50it22d.

```

n10 e24 {hie, hoar, quoth, shrift, friar, clos, woful,
alack, juliet, mer, laurence, exeunt, rom, mu, montague,
serv, romeo, mercutio, capulet, benvolio, jul, samp, tyb,
tybalt}
n70 e3 {nurse, mantua, verona}
n130 e4 {chide, rosemary, scurvy, visor}
n9 e0 {}
n11 e2 {lusty, kinsman}
n69 e2 {knave, wench}
n129 e1 {cupid}
n190 e8 {villain, anon, minstrel, churchyard, choler,
stint, doomsday, rais}
n71 e1 {thievish}
n189 e7 {farewell, goose, writ, thursday, madam, ben, woo}
n131 e0 {}
n250 e1 {mutiny}
n249 e0 {}
n191 e1 {fickle}
n251 e2 {exit, cull}
n248 e1 {yew}
n188 e1 {immoderately}
n310 e3 {channel, circuit, energy}
n309 e102 {obtain, experimental, maximum, efficiency,
negligible, signal, absorption, accuracy, sample, interval,
complexion, demon, microscope, information, rectify,
receiver, radiation, fluctuation, reversible, irreversible,
perturb, compute, maxwell, filament, viscous, lattice,
unrealistic, spectrum, piston, binary, sci, parity,
asymptotic, emission, mag, molecule, unperturbed, reliability,
fig, thermodynamics, simpson, phil, glaringly, ternary,
codings, rasa, amplifier, coefficient, atypical, telegraphic,
kelvin, kinetic, mcgraw, periodicity, pulse, cos, digit,
urbana, ricochet, planck, frequency, voltage, indigestible,
logarithm, lagrange, carnot, thermostat, deflection,
multilevel, entropy, hillel, bigness, photoelectric, thermal,
ref, boltzmann, fourier, wavelength, oscillator, hyperspace,
quantized, shannon, inst, singapore, photocell, cosine,
rectifier, lim, gabor, rosenfeld, resistor, thermodynamical,
maki, negentropy, phys, szilard, emf, resonator, nyquist,
eqs, liouville, salzer}

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These are not its closest friends but characters interested in discussing a particular *atom-letter*: *n309 e102*. *Brillouin_Science and Information Theory*, *Koolhaas_SMLXL*, and *Shakespeare_Romeo*

and *Juliet* now have a common reason—a posed question—to come closer together. They are accompanied by their friends. *Brillouin_Science and Information Theory* brings *Saussure_Course in General Linguistics*, a book with disguised authorship, written not directly by Saussure but posthumously by his students and friends. *Saussure_Course in General Linguistics* is actually a code name for a specific set of circumstances that articulated the book. *Koolhaas_SMLXL* brings *Real Estates*, another collection of voices gathered around architecture. And lastly, *Shakespeare_Romeo and Juliet* brings *Joyce_Ulysses* as his friend. *Joyce_Ulysses* is a stream of consciousness, a form that accommodates a continuous and abundant body of thoughts. Thus, a provocation: If we would like to explore and play an informational play that gives a voice to a city in a dramatic setup, we should make friends with the books interested in the concept n309 e102. Let us hear how they will index the topics important to *B_SIT_K_SMLXL_S_RAJ*.

We are in the midst of a monologue. *Joyce_Ulysses* is presenting us with a personal torrent of thoughts while wandering through Dublin.

Joyce_Ulysses:

[...] squatting in the mens place meadero I tried to draw a picture of it before I tore it up like a sausage or something I wonder theyre not afraid going about of getting a kick or a bang of something there the woman is beauty of course thats admitted when he said I could pose for a picture naked to some rich fellow in Holles street when he lost the job in Helys and I was selling the clothes and strumming in the coffee palace would I be like that bath of the nymph with my hair down yes only shes younger or Im a little like that dirty bitch in that Spanish photo he has nymphs used they go about like that I asked him about her and that word met something with hoses in it and he came out with some jawbreakers about the incarnation he never can explain a thing simply the way a body can understand then he goes and burns the bottom out of the pan all for his Kidney this one not so much theres the mark of his teeth still where he tried to bite the nipple I had to scream out arent they fearful trying to hurt you I had a great breast of milk with Milly enough for two what was the reason of that he said I could have got a pound a week as a wet nurse all swelled out the morning that delicate looking student that stopped in no 28 with [...] ¹⁷⁸

As *Joyce_Ulysses* is fading into the background another voice coming from the nearby speaker takes over: *Real Estates*, a book which is, in itself, a collection of various viewpoints, continues in the same direction with another, more economic, stream. It celebrates multiple points of view and their eternal transformability in

178 James Joyce, *Ulysses*, 1922, <http://www.gutenberg.org/ebooks/4300>.

the generic condition. It is digital, immediate, rich and thick, a celebration of strange colleagues. The inner voice of *Joyce_Ulysses* is drowned out by the common megaphone of *Real Estates*.

Real Estates:

The human space-time continuum has been riddled with wormholes created by money's own energy. Fashion cycles might be explained by Klein bottle-shaped rifts, in which time is a loop through which particular aesthetics endlessly circle.

As any trip to hipster locales reveals, history has not exactly ended but has become amplified and overlaid. A handlebar mustache sits alongside space-age retroness. Cold War chic dresses as though it were the landed gentry. Low-fi implements, such as fixed-gear bikes and ukuleles, are produced with digital technologies. The texture of time itself has been worked over by the energies of financialisation, whipped into something overly rich and super thick, a landscape through which we can traverse. It is capital's accumulation of time, just as cities are accumulations of capital compressed in space.

Cities and architecture are fully subject to this financialised space-time continuum. Fuelled by debt, the manifestation of tomorrow's money today, secured by value created in the past, architects—often subconsciously—manifest this aesthetically. Neo-modern, minimalist-Georgian, vernacular-techno, eco-spaceage, digital-constructivist are just some of the debt-enabled time-shifting energy forms that we commonly describe as contemporary architecture.¹⁷⁹

Together these two, one local, one global, one coming from inside, the other from outside, are forming a noisy cloud of a city. Being puzzled and unable to stop the streams of *Joyce_Ulysses* and *Real Estates*, *Saussure_Course in General Linguistics* starts to think how to approach his friends. Is there a metrics, a matrix, or a pattern? How to deal with the stream of thoughts, text, and language; how to look at it, how to think of it? Depending on the viewpoint, phenomena change, context changes; but what is invariant, where to find stabilities? How to talk?

Saussure_Course in General Linguistics:

What is it that linguistics sets out to analyse? What is the actual object of study in its entirety? The question is a particularly difficult one. We shall see why later. First, let us simply try to grasp the nature of the difficulty.

Other sciences are provided with objects of study given in advance, which are then examined from different points of view. Nothing like that is the case in linguistics. Suppose someone pronounces the French word

¹⁷⁹ Sam Jacob, "MONEY : TIME : SPACE," in *Real Estates: Life without Debt*, Eds. Jack Self and Shumi Bose, First Edition (London: Bedford Press, 2014), ebook, loc 96.3/201.

nu ('naked'). At first sight, one might think this would be an example of an independently given linguistic object. But more careful consideration reveals a series of three or four quite different things, depending on the viewpoint adopted. There is a sound, there is the expression of an idea, there is a derivative of Latin nūdum, and so on. The object is not given in advance of the viewpoint: far from it. Rather, one might say that it is the viewpoint adopted which creates the object. Furthermore, there is nothing to tell us in advance whether one of these ways of looking at it is prior to or superior to any of the others.

Whichever viewpoint is adopted, moreover, linguistic phenomena always present two complementary facets, each depending on the other.¹⁸⁰

By listening to its friends, it feels like multiple streams of information and ways to navigate them could characterise *B_SIT_K_SMLXL_S_RAJ* if it existed as a book. Even though it is just a probe it is not determined by the streams or its current path, it rather enjoys performing different tricks on various streams at multiple speeds.

Let us think of it as a seed for this book. These are the same questions *Play Among Books* deals with. As concepts are unfolding, the play is getting more and more consistent. There is no conclusion, there are just more flavours adding to the discussion.

...

End of the Fourth Scene

SCENE V: LOOKING FOR FRIENDS

Third Guest:

PAB

book → 556, information → 508, library → 328, index → 264, xenotheka → 246, new → 229, different → 210, fig → 204, way → 204, architecture → 204, face → 203, concept → 199, play → 198, actor → 162, instrument → 153, datum → 152, code → 149, word → 144, theory → 137, machine → 128, form → 127, articulate → 118, letter → 117, time → 115, talk → 115, generic → 110, encode → 106, context → 102, brillouin → 100, mean → 99, galaxy → 99, atom → 97, hofstadter → 94, start → 90, look → 85, question → 85, think → 84, com → 83, world → 83, serres → 82, specific → 82, articulation → 81, cloud → 80, flow → 80, www → 78, communication → 78, like → 76, science → 76, intelligence → 76¹⁸¹

¹⁸⁰ Ferdinand de Saussure, *Course in General Linguistics*, trans. Roy Harris, Reprint Edition (London, New York: Bloomsbury Academic, 2013), ebook, loc 87.0/642.

¹⁸¹ PAB's dictionary of most frequent terms.

Third to enter *Xenotheka* is this text *Play Among Books*—not the whole text but its plays and its instrument. The dictionary of the most prominent terms provides a good atmosphere to start with. Not too strict, not too loose, with a direction towards information, books, architecture, and coding. *PAB* is a self-referential probe sent in a search for friends. By listening to their conversations and observing how *PAB* lights up the galaxy, we are trying to get a subtle feeling of what the atmosphere of this play is. How does our text feel in the library? How does the library feel about the play? After all, it is written by playing an *Informational Instrument*, by thinking and communicating with *Xenotheka*. A self-referential process—I am a *Strange Loop*.¹⁸² An awkward and interesting moment. Let us grant this text its own intelligence and see what happens.

PAB finds itself surrounded by a big group of friends—*n24e37*. It feels good. *PAB* likes it (we like it as well). In this *Xenotheka*, it is part of a complex and open character. Some of the books are its old friends (*Serres_Geometry*, *McLuhan_The Gutenberg Galaxy*, *Ayache_The Blank Swan*); some might be interesting to talk to and get to know better. Both the persona and its neighbours look familiar and intriguing. This constellation is, by all means, both a comfortable and challenging one.

```
n24e37
Kittler_The Truth of the Technological World
Eco_On Literature
Serres_The Five Senses
Serres_Geometry
Derrida_Signature
McLuhan_The Gutenberg Galaxy
Serres_Statues
Blanchot_The Book to Come
Benjamin_The Work of Art in the Age of M
Serres_Biogea
Hofstadter_I Am a Strange Loop
Serres Latour_Conversations on Science, Culture, and Time
McLuhan_Understanding Media
Cache_Projectiles
Ponte_The House of Light and Entropy
Ranciere_Aisthesis
Virilio_A Landscape of Events
Barthes_Mythologies
Deleuze Guattari_A Thousand Plateaus
Serres_Thumbelina
Serres_Rome
Spuybroek_The Sympathy of Things
Freud_The Psychopathology of Everyday
Bachelard_The Poetics of Space
Abbott_Flatland
Blanchot_The Space of Literature
Max Bill_Form, Function, Beauty
Worringer_Abstraction and Empathy
Lefebvre_Rhythmanalysis
Nancy_The Ground of the Image
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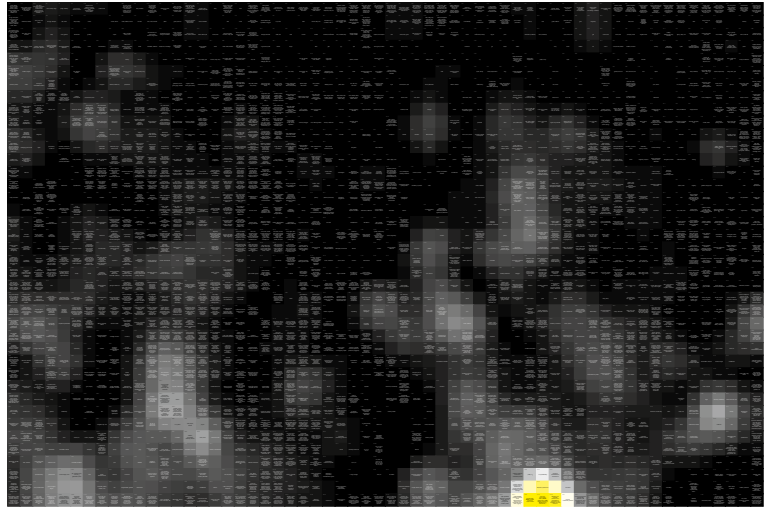
[...]

¹⁸² See *Scene I: Information and Self-Reference*, 93.

[...]

Schlemmer_Nagy_The Theater of the Bauhaus
Derrida_Copy Archive Signature
Barthes_The Language of Fashion
PAB
Nancy_Intoxication
Ayache_ The Blank Swan

Let us invert the view and look for an inner atmosphere of the text, its most prominent concepts, and the main highlights. The way PAB lights up the galaxy feels consistent with the text. Its concepts index main topics discussed in the text so far: *index, galaxy, encode, spectra, dimensionality, alphabet, polyphony*. O2.41



O2.41

0 1

Face of PAB, rendering_232_14_RW_4060_r_50it22d.

```
n2383 e32 {performer, topologically, shelve, library,
kaleidoscope, index, galaxy, cybernetics, encode, wiener,
schumacher, som, wolfram, spuybroek, https, brillouin, pdf,
hofstadter, negroponte, carpo, spectrums, geb, tst, encodings,
itd, ACW, aoa, bibliotheka, lecorbusier, romanvlahovic, sdt,
xenotheke}
n2323 e2 {snapshot, synchronous}
n2382 e5 {dimensionality, generic, ambient, reconnect,
capriciousness}
n2384 e41 {alphabet, print, interplay, recitation, livre,
quantification, numeration, oral, repeatable, africans, aural,
liturgy, polyphony, electro, tactile, declamation, visibility,
itemize, homogenize, interiorization, blake, elizabethan,
rabelais, tactility, repeatability, lear, dictation, huizinga,
typography, ong, gutenberg, hayes, lineal, literate, scribal,
eliade, grammatica, ramus, febvre, ivins, audile}
n2322 e0 {}
n2324 e0 {}

[...]
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[...]

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n2263 e2 {tool, parasitically}
n2381 e28 {speed, machine, periphery, smooth, facial,
experimentation, territory, pack, amorphous, vector, deter,
aggregate, segment, penultimate, zigzag, redundancy, plane,
segmentation, misconstrue, wasp, instrumentation, timbre,
stratification, amalgamation, transformer, courtship, orchid,
virilio}
n2321 e11 {variation, indirect, cosmos, contour, dualism,
fixity, pivotal, inaccurate, oversimplify, monism, upsurge}
n2262 e2 {james, rift}
```

There are three actors that distinguish themselves by their interest in this constellation, in particular, *atom-letter n2383 e32*. Each one comes with its own attitude. Let us ask each of them to send a message to *PAB*, and listen without much comment. ○2.42

Main protagonists of *atom-letter n2383 e32*



PAB,
0.157729



Deleuze Guattari_A Thousand
Plateaus,
0.0557006



McLuhan_The Gutenberg Galaxy,
0.0892446



Ayache_The Blank Swan,
0.0544967

○2.42

Rendering_232_14_RW_4060_r_50it22d.



McLuhan_The Gutenberg Galaxy indexes his galaxy in a similar manner to *Xenotheka*. It suggests boldly that “a mosaic image of numerous data and quotations in evidence offers the only practical means of revealing causal operations in history.”¹⁸³ With another face of the galaxy, *Ayache_The Blank Swan* appears. He is captivated by the idea of derivatives, different speeds, times of writing, and literacy. Third and last to appear is *Deleuze Guattari_A Thousand Plateaus*. Professor Challenger poses a question of a book.

As a message to *PAB*, *McLuhan_The Gutenberg Galaxy* decides to talk about its galaxy, challenges and the beauties of it.

McLuhan_The Gutenberg Galaxy:

[...] *The interiorization of the technology of the phonetic alphabet translates man from the magical world of the ear to the neutral visual world.*

Schizophrenia may be a necessary consequence of literacy.

Does the interiorization of media such as LETTERS alter the ratio among our senses and change mental processes?

¹⁸³ Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man* (Toronto: University of Toronto Press, 1962), ebook, loc 136.8/1012.

Civilization gives the barbarian or tribal man an eye for an ear and is now at odds with the electronic world.

The modern physicist is at home with oriental field theory.

The new electronic interdependence recreates the world in the image of a global village.

Literacy affects the physiology as well as the psychic life of the African.

Why non-literate societies cannot see films or photos without much training.[...]

When technology extends ONE of our senses, a new translation of culture occurs as swiftly as the new technology is interiorized.[...]

The alphabet is an aggressive and militant absorber and transformer of cultures, as Harold Innis was the first to show.[...]

The Greeks invented both their artistic and scientific novelties after the interiorization of the alphabet.

The divorce of poetry and music was first reflected by the printed page.[...] ¹⁸⁴

The second message comes from *Ayache_The Blank Swan*, who goes beyond predicting, beyond the original and the copy, and beyond possibilities while writing an original text that already exists. He is doing so with his friend Pierre Menard who made an identical copy of Don Quixote which is not a copy but an infinitely richer text than the original one. They discuss writing beyond probability. While *Ayache_The Blank Swan* is talking, *Alice_ch3n81* is falling in love with Pierre Menard.

Ayache_The Blank Swan:

I do not consider Pierre Menard to be an allegory of reading but the very definition of writing. It is the differential definition of writing. The idea, here, is to take Borges' novel literally—to really think what makes it so original and so credible.

...

I am not saying that Menard wrote his Quixote linearly, as if the words of the original Quixote were revealed to him one after the other. The Quixote was not revealed to him, because he knew it existed and even had knowledge of the whole work beforehand. Yet it was not present to his mind either, when engaging in his writing process. The relation between Pierre Menard and the original Quixote has nothing to do with knowledge or revelation or expectation or chronological time. There is no interiority and no reciprocity to their relation: it is a nonrelation. It has nothing to do with possibility either, as the Quixote is the only available

¹⁸⁴ McLuhan, *The Gutenberg Galaxy*, ebook, loc 891.0/1012.

possibility. In this sense, Pierre Menard's Quixote is truly unexpected and truly im-possible. It lies beyond, or rather outside, possibility or expectation. I wish to argue that the Quixote is history to Pierre Menard and that his relation to it is one of writing, not of knowing or predicting.¹⁸⁵

And lastly, Deleuze Guattari *A Thousand Plateaus* poses a question to PAB: "What is the body without organs of a book?"¹⁸⁶ By asking a question, he tells a story and ends the first play.

Deleuze Guattari_A Thousand Plateaus:

A book has neither object nor subject; it is made of variously formed matters, and very different dates and speeds. To attribute the book to a subject is to overlook this working of matters, and the exteriority of their relations. It is to fabricate a beneficent God to explain geological movements. In a book, as in all things, there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or, on the contrary, of acceleration and rupture. All this, lines and measurable speeds, constitutes an assemblage. A book is an assemblage of this kind, and as such is unattributable. It is a multiplicity—but we don't know yet what the multiple entails when it is no longer attributed, that is, after it has been elevated to the status of a substantive. One side of a machinic assemblage faces the strata, which doubtless make it a kind of organism, or signifying totality, or determination attributable to a subject; it also has a side facing a body without organs, which is continually dismantling the organism, causing asignifying particles or pure intensities to pass or circulate, and attributing to itself subjects that it leaves with nothing more than a name as the trace of an intensity. What is the body without organs of a book? There are several, depending on the nature of the lines considered, their particular grade or density, and the possibility of their converging on a "plane of consistency" assuring their selection. Here, as elsewhere, the units of measure are what is essential: quantify writing. There is no difference between what a book talks about and how it is made. Therefore a book also has no object. As an assemblage, a book has only itself, in connection with other assemblages and in relation to other bodies without organs. We will never ask what a book means, as signified or signifier; we will not look for anything to understand in it. We will ask what it functions with, in connection with what other things it does

¹⁸⁵ Elie Ayache, *The Blank Swan: The End of Probability*, First Edition (Chichester: Wiley, 2010), ebook, loc 337.5/1793.

¹⁸⁶ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus* (London: Bloomsbury Academic, 1980), 24.

*or does not transmit intensities, in which other multiplicities its own are inserted and metamorphosed, and with what bodies without organs it makes its own converge. A book exists only through the outside and on the outside.*¹⁸⁷

The curtain falls. Books applaud.

...

End of the Fifth Scene

End of the Fourth Act

End of the First Play

¹⁸⁷ Deleuze and Guattari, *A Thousand Plateaus*, 24.

