
Paracosms of the Strange

*Archives, Address, and the Externalized Mind
in Luhmann, Swedenborg, and Philip K. Dick*

FLYXION

Independent Researcher

July 2026

$$x_{n+1} = \rho(x_n, A)$$

1 Introduction — The Problem of the Outgrown Mind

Niklas Luhmann, Emanuel Swedenborg, and Philip K. Dick have almost nothing in common on the level of belief. A sociologist building a card index for scholarly composition, a natural philosopher recording decades of visionary experience, and a science fiction novelist trying to make sense of a single anomalous event share no doctrine, no historical period, and no obvious intellectual lineage. What they share is a situation rather than a conviction: each accumulated more than an unaided mind could hold in view at once, and each responded not by attempting to remember better but by building an external structure whose function was to make the excess reachable again from wherever thought happened to stand later.

This essay treats that shared situation, rather than the content of what any of the three believed, as the proper object of comparison. The point is not to ask whether Swedenborg's cosmology or Dick's revelation was true, nor to catalogue the eccentricities of visionary writers alongside a methodologically respectable sociologist for contrast. The point is to ask what an archive does, structurally, when it is built to hold material that exceeds direct recollection, and to show that the same underlying operation, examined closely, can produce three qualitatively different outcomes depending on what is fed into it.

The central claim can be stated in advance, though its full weight will only become visible once the mechanism is established and applied to all three cases. Private experience becomes intellectually durable, capable of being returned to, extended, and revised rather than merely remembered as a fading impression, only when it acquires an external architecture of recurrence: a system of addresses that lets a later state of mind encounter an earlier inscription under conditions that did not exist when the inscription was made. The archive, on this view, is not a passive record standing downstream of thought. It participates in producing further thought, because what is retrieved from it is never simply recovered as it was, but recontextualized by a present that the original inscription could not have anticipated.

Section 3 develops this mechanism through Luhmann's Zettelkasten, chosen deliberately as the least metaphysically loaded case: an archive built from ordinary scholarly notes, with no anomalous experience and no cosmological stake in its own coherence. Establishing the operation there, on material no one would call visionary, makes it possible to ask a sharper question of the two cases that follow. Sections 4 and 5 turn to Swedenborg and Dick respectively, treating each not as an independently strange writer but as a transformation of the same operation already defined, applied to material that does carry an anomalous charge. Section 6 draws the three cases together into an explicit taxonomy. Section 7 then introduces three further cases, Jeanne Guyon, Cecilia Payne-Gaposchkin, and Ursula K. Le Guin, chosen not to balance the first three for the sake of symmetry but because each varies a degree of freedom the initial taxonomy quietly held fixed, with consequences, in each case, that reach well past archival theory: Guyon's discipline anticipates a strategy for reliability that reappears in Boole and the logical positivists, Payne-Gaposchkin's result underlies the modern understanding of stellar energy, and Le Guin's constructed worlds argue that identity, gender, and cultural knowledge are built rather than given. Section 8 generalizes the result, now informed by all six cases, into a claim about what an archive is for that owes nothing to the extraordinary character of any single case. A brief coda, and

a genealogy situating Luhmann's innovation within a much older history of commonplace books, concordances, and associative image-archives, complete the frame.

The wager of the essay is that this comparison, kept strictly to the level of mechanism, tells us something true and somewhat unsettling about all three figures at once: that the vividness and apparent coherence of an inhabited private world may depend less on the nature of what was experienced than on the architecture built to keep returning to it.

It is worth being explicit, before the argument begins, about what this framing deliberately sets aside. Nothing in what follows depends on adjudicating whether Swedenborg genuinely conversed with the dead, whether Dick's 1974 experience was contact, illness, or something else entirely, or whether either man's testimony should be read as sincere report, elaborate confabulation, or some condition in between. Those questions are real and have been argued elsewhere at length. This essay asks a narrower and, in a sense, a prior question: given that each man produced an enormous, self-referential textual apparatus around his experience, what does the apparatus itself do, independent of whatever judgment one reaches about the experience it surrounds? The same question can be asked of Luhmann without any of the surrounding controversy, which is exactly why his case is examined first.

2 Before Luhmann — A Genealogy of Externalized Association

It would be a mistake to treat the Zettelkasten as an isolated invention, as though externalized associative cognition began in the mid-twentieth century with one sociologist's index cards. The practice of building an apparatus to hold more than a single mind can retain at once has a long prior history, and situating Luhmann within it clarifies what was actually new about his system: not the impulse to externalize, which is old, but the particular addressing logic examined in Section 3.

The commonplace book is the most direct ancestor. From antiquity through the early modern period, readers kept notebooks in which passages, observations, and quotations were copied out under headings chosen in advance, to be drawn on later in composition or argument. The florilegium, literally a gathering of flowers, served a related function for compiling excerpts from patristic and classical sources into thematically organized collections, and the scholarly concordance did the same for scripture, indexing every occurrence of a word or phrase across a text too large to hold in memory. Each of these is already an archive built for retrieval from a later state, in the sense established in Section 3: a reader consulting a concordance is reaching back to material set down by someone else, or by an earlier version of themselves, under an addressing scheme designed to make it findable again.

What these earlier forms share, and what distinguishes them from Luhmann's system, is that their addressing is categorical rather than combinatorial. A commonplace book organizes its entries under topics decided before the entries accumulate; a concordance organizes by the fixed structure of the text it indexes. Retrieval in these systems returns material relevant to a category the reader already had in mind. Luhmann's numbering scheme, by contrast, allows any card to stand in relation to any other regardless of topic, which is what permits the operator ρ to generate encounters the reader did not anticipate, since no prior

category constrains which cards can meet. The distinction is not a matter of scale. A concordance can be enormous and a Zettelkasten modest; the difference is structural, in what kind of retrieval the addressing scheme makes possible.

Aby Warburg's *Mnemosyne Atlas* belongs to this genealogy as well, and closer to Luhmann than the commonplace book tradition, though it worked in images rather than text. Panels of photographs and reproductions, arranged and rearranged on black cloth boards, were used to trace the persistence and transformation of expressive gesture across widely separated periods and cultures. The arrangement was deliberately non-narrative and revisable, permitting new adjacencies to suggest new relations that no fixed caption or category had predicted. This is recombination in something close to Luhmann's sense, applied to visual rather than textual material, and it suggests that the operation identified in Section 3 is not peculiar to note-taking but belongs to a broader class of externalized associative practice that includes visual and material archives as well.

A final figure worth placing in this line, briefly rather than as a developed case, is Leibniz, whose filing practices and unrealized plans for a universal characteristic and a general science of combinations anticipate the ambition behind Luhmann's system without ever being realized as a working archive on the same scale. He is mentioned here rather than treated as a fourth case study because the essay's taxonomy in Section 6 depends on having exactly three developed examples of ρ applied to accumulating material with observable long-run behavior, and Leibniz's project remained, for the relevant purposes, an ambition rather than a completed archive.

This genealogy is not offered for completeness alone. It establishes that the impulse to build an external structure for holding more than memory can retain is old and widespread, which is precisely what licenses treating Luhmann's case, in Section 3, as a control rather than an oddity. The Zettelkasten is not a strange twentieth-century invention standing apart from ordinary intellectual practice. It is a late and unusually explicit instance of something scholars, compilers, and archivists had been doing for centuries, distinguished chiefly by the combinatorial rather than categorical logic of its addressing.

The manuscript tradition offers one further precedent worth naming, less for its architecture than for what it shows about the durability of externalized association once it exists. Medieval scriptoria produced marginalia, glosses, and interlinear commentary that accumulated across successive readers and centuries, so that a heavily annotated manuscript became, over time, a layered record of many minds encountering the same text from many different later positions. No single annotator planned this outcome, and no annotator's marginal note was addressed in Luhmann's combinatorial sense; each gloss simply attached itself to the passage it concerned. But the cumulative result, a text thick with commentary that later readers read alongside and against, shows that the recontextualization this essay is concerned with does not require a single author deliberately engineering it. It can also accrete, unplanned, across a community of readers extended in time, which suggests the mechanism examined here in three individual cases may have a social analogue worth a separate treatment of its own.

3 Luhmann — The Control Case

Niklas Luhmann's Zettelkasten is best approached not as a compensation for the limits of memory but as a deliberately constructed generator of relations that no act of unaided recollection needed to have contained in advance. This distinction matters because it determines what kind of claim the essay is entitled to make later. If the archive were merely a prosthetic for a finite mind, its interest would be practical rather than philosophical: a better filing cabinet. What Luhmann's system demonstrates instead is that an archive built on sufficiently dense addressing can produce encounters between ideas that the author, at the moment of inscription, had no occasion to anticipate.

The mechanism can be stated with minimal apparatus. An inscription is an event in which some transient cognitive content receives a persistent address:

$$x_t \xrightarrow{a} a(x_t).$$

Nothing here is yet interesting; every notebook does this much. What makes an archive productive rather than merely preservative is retrieval from a later state, in which a subsequent moment of thought reaches back to an address it did not create:

$$x_{t+n} \xrightarrow{r} a(x_t).$$

The decisive step, however, is neither inscription nor retrieval but what follows retrieval. The retrieved inscription is not simply recalled; it is recontextualized, brought into contact with a present state that did not exist when the inscription was made:

$$(x_{t+n}, a(x_t)) \xrightarrow{\rho} x_{t+n+1}.$$

The operator ρ is not memory in any ordinary sense. Memory would return x_t more or less as it was. ρ instead produces something new: a state that could only arise from the collision between an old inscription and a new interpretive position. This is the operation Luhmann's numbering and cross-referencing system was built to exploit. Each card carries an address that places it in relation to others regardless of when they were written, so that the archive's structure continually offers up recombinations the author did not plan and could not have planned, since planning them would have required already knowing the relation before the address made it available.

It is important to resist a natural but distorting move at this point, which is to treat Luhmann as the sober baseline against which Swedenborg and Dick will appear as elaborations or distortions. The Zettelkasten is not offered here as the normal case with two eccentric variants to follow. It is a control case in the stricter sense: a demonstration that the operation ρ can generate genuine cognitive surprise from material that is, by any ordinary standard, unremarkable. Scholarly notes on sociology and systems theory carry no anomalous charge. If an archive built from such material can still behave as an interlocutor, generating relations its author did not foresee, then whatever additional generativity appears in Swedenborg's or Dick's archives cannot be attributed simply to the extraordinary character of what they were archiving. The burden of explanation shifts from the content of the revelation to the architecture built around it, which is precisely the shift the essay's introduction promises and the coda will return to by name.

A concrete instance clarifies why this matters more than it might first appear to. A note on the sociology of trust, filed under an address determined only by its position relative to whatever card preceded it into the box, might later be reached from a branch line concerned with contract law, or with the sociology of intimate relationships, or with systems theory's treatment of double contingency, depending on which later concern happens to lead a reader back to it. None of these later encounters was written into the card at the time of filing. Each is a genuine product of ρ , dependent on which state x_{t+n} the reader occupies when retrieval occurs, and none of them could have been anticipated by an author working only from x_t forward. This is the sense in which the archive is not merely storing Luhmann's thought but generating thought he had not yet had.

Two further features of Luhmann's system are worth fixing before moving to the visionary cases. First, the system was designed never to converge, and this is a virtue rather than a limitation. Its purpose was recombination, not resolution; a finished Zettelkasten would be a failed one, since the value of the address lies precisely in its openness to being reached from interpretive positions not yet reached. Second, the addresses themselves carry no privileged hierarchy. Unlike a subject index, which organizes material under categories decided in advance, Luhmann's addressing scheme allows a card to sit in relation to any other card the author later finds relevant, which is what permits ρ to keep producing states x_{t+n+1} that were not implicit in any single prior inscription. These two features, non-convergence and non-hierarchical addressing, are what Sections 4 and 5 will find transformed rather than repeated. Swedenborg's apparatus will be shown to bend the same operation toward stabilization. Dick's will be shown to iterate it without ever letting it settle.

4 Swedenborg — Stabilization of a Cosmology

Emanuel Swedenborg presents a case in which the same operation identified in Luhmann is bent toward a different outcome. The material he was working with was not scholarly excerpting but decades of recorded visionary experience: the *Spiritual Diary*, kept privately over years, and the vastly larger *Arcana Coelestia*, in which that experience was progressively cross-referenced against scriptural exegesis. The source material here is emphatically not neutral in the way Luhmann's was. Each inscription x_t is not a scholarly note but a report of an episode that arrived without warning and without guarantee of internal consistency with what had already been recorded. The question this section has to answer is what happens when the recontextualization operator ρ is applied, repeatedly and over a very long span, to material of this kind.

The answer visible in the finished apparatus is that repeated application of ρ tends toward a fixed point rather than away from one. Consider the iteration

$$x_{n+1} = \rho(x_n, A)$$

where A is the accumulating archive itself. In Luhmann's case this iteration was designed to keep producing new, unanticipated states indefinitely, since convergence would have defeated the archive's purpose. In Swedenborg's case the iteration instead appears to approach a stable cosmology: a state of the archive in which further recontextualization confirms and extends the existing structure rather than displacing it. Later visionary episodes

are absorbed into the same interpretive scheme that earlier episodes established, and the cross-referencing apparatus of the *Arcana Coelestia* is the visible record of that absorption. What began as a sequence of discrete and potentially incommensurable episodes becomes, through the archive's operation on itself, a single traversable world in which any region can in principle be reached from any other under a shared interpretive key.

It is worth being precise about what "stabilization" means here, since the word could easily be mistaken for mere repetition or dogmatic closure. The fixed point Swedenborg's archive approaches is not a cessation of activity. New material continues to arrive and continues to be inscribed. What stabilizes is not the content but the relation between content and interpretive scheme: later inscriptions are absorbed under the same operative categories that earlier ones established, so that ρ applied to any new x_t yields a state consistent with, rather than disruptive of, the existing archive. This is stabilization in the sense that a dynamical system has a fixed point, not in the sense that a person has stopped thinking. The distinction matters because it is exactly the feature that will fail to hold in Dick's case, where each application of ρ alters the very categories under which the next application will operate.

A further feature of Swedenborg's archive bears directly on how convincing its fixed point becomes to a reader, and it is worth separating two different sources of that persuasiveness. Many of the interlocutors populating the *Spiritual Diary*, historical and biblical figures Swedenborg reports conversing with, were not novel content in the relevant sense. They arrived already carrying a bundle of traits assembled from what he had read or heard of them; the archive was not generating these figures from nothing but recombining an existing, independently checkable store of association. Call this a primed sheath: a pre-formed set of characteristics that gives an apparition its recognizable shape and, not incidentally, its plausibility, since a reader can independently confirm that the figure behaves consistently with the historical record already available. This is one mechanism by which the fixed point stabilizes: agreement with material the archive did not itself produce.

The account of conversations with inhabitants of other planets, developed at length in *Earths in the Universe*, is a different case entirely, because there was no comparable external record to recombine against and no instrument available at the time capable of checking the description. A description of living conditions on another world could not be verified or falsified by any means then available, which means the same interpretive confidence that in the historical cases rested on independent confirmation here rests on nothing but the internal consistency of the archive itself. The two cases look identical from inside the finished cosmology; both are absorbed by the same operation ρ into the same stabilized world, and the archive offers no internal marker distinguishing an entity checked against outside record from an entity checked against nothing at all. This is worth stating plainly, since it is precisely the vulnerability that a convergent archive of this kind carries: the very consistency that makes it persuasive is generated by the same mechanism regardless of whether anything external stands behind a given piece of content. The reader encountering the finished apparatus has no reliable way to tell, from the text alone, where the primed material ends and the unverifiable material begins.

The comparison to Luhmann can now be made precise rather than merely evocative. Both figures build an addressing structure that allows later states to encounter earlier inscriptions under conditions that did not exist at the time of writing. Luhmann's addressing

scheme is built so that this encounter keeps generating divergence, since the archive has no cosmological content to protect and every recombination is equally welcome. Swedenborg's addressing scheme, applied to material that arrives already carrying the threat of incoherence, is built so that the encounter generates convergence, since the entire project depends on showing that visionary material forms a single interpretable order rather than a series of unrelated episodes. The mechanism, ρ operating on an accumulating archive, is identical in form. What differs is the character of the fixed point the iteration is pushed toward, and that difference cannot be read off the mechanism itself. It has to be read off the archive's actual behavior over time, which is why the essay needs both cases side by side rather than either one alone.

This is also the point at which Swedenborg's case does real argumentative work for the essay as a whole, beyond its intrinsic interest. It demonstrates that the same architecture responsible for Luhmann's productive non-convergence can, under different material and different aims, produce the opposite outcome: not an engine of continued surprise but an engine of closure. The archive is therefore not intrinsically generative or intrinsically stabilizing. It is a structure whose long-run behavior depends on what is fed into ρ and what the iteration is being asked to do, a point Section 5 will press further by showing a third possibility that the taxonomy so far has not yet admitted: an archive whose iteration neither converges nor productively diverges, but instead continually reconstructs the object it was supposed to be interpreting.

5 Philip K. Dick — Reconstruction Without Closure

The *Exegesis* presents a third configuration of the same operation, and it is the one that resists assimilation to either of the two already established. Where Luhmann's archive was designed to keep producing divergence from material with no privileged center, and Swedenborg's archive converged toward a stable interpretive scheme that absorbed new material without disturbing it, Dick's archive does neither. It takes as its recurring object a single anomalous event, the experience he dated to February and March of 1974, and subjects that event to an unbroken sequence of reinterpretations across some eight thousand pages, without ever settling on a final reading and without ever discarding the event as uninterpretable.

The mechanism is again ρ , and again the interesting question is what the iteration

$$x_{n+1} = \rho(x_n, A)$$

approaches as A accumulates. In Luhmann's case the iteration was built to keep generating new states indefinitely because the archive had no single object it was trying to interpret; recombination was the entire point, and any resulting state was as acceptable as any other. In Swedenborg's case the iteration approached a fixed point at which further application of ρ confirmed the existing structure rather than disturbing it. Dick's case is neither. Each application of ρ to the founding event does not leave that event's own status untouched. The reinterpretation does not simply add a new entry alongside earlier ones; it recodes what the earlier entries were entries about, so that the object under interpretation at step $n + 1$ is not identical to the object that was being interpreted at step n . The archive is not

converging toward a stable reading of a fixed event, nor is it freely recombining unrelated material. It is repeatedly altering the very thing it takes itself to be explaining.

This is worth making precise, because it is easy to describe the *Exegesis* loosely as simply “indecisive” or “unable to reach a conclusion,” which understates what is actually happening. Indecision would imply a menu of stable candidate interpretations among which no choice is made. What the text instead exhibits is that each candidate interpretation, once entertained, changes the evidential context against which the next interpretation is evaluated. A hypothesis that the 1974 experience was a contact with a benevolent transtemporal intelligence generates, once written down, new material (dreams, coincidences, further recollection of the original event reframed in its light) that then requires its own interpretation, which in turn revises what the original experience is taken to have been. The founding event is therefore not a fixed input being progressively better understood. It is itself a function of the archive’s history up to that point, a moving target constituted anew by every attempt to fix it.

This gives the essay a third distinct behavior of the iteration $\rho(x_n, A)$, one the taxonomy so far had not admitted: neither convergence to a fixed point nor open, object-free divergence, but a kind of reconstruction in which the object of interpretation is continually regenerated by the interpretive act itself. The archive remains fully reachable in Luhmann’s sense; nothing in the *Exegesis* is ever discarded, and the sheer bulk of cross-reference means any later entry can in principle reach back to any earlier one. But reachability here does not serve recombination for its own sake, as in Luhmann, nor does it serve the stabilization of a traversable cosmology, as in Swedenborg. It serves the perpetuation of a problem that the archive’s own operation prevents from ever being settled, since settling it would require the founding event to hold still long enough to be matched against a final interpretation, and no application of ρ leaves it holding still.

The three cases can now be stated together with some precision. Luhmann exploits ρ to generate difference from material with no privileged object, and non-convergence is the intended outcome. Swedenborg applies ρ to anomalous material and the iteration converges, stabilizing a cosmology whose regions become mutually interpretable, at the cost of a certain vulnerability discussed above: the mechanism cannot distinguish checked content from unverifiable content once stabilization is achieved. Dick applies the same operation to a single anomalous event and gets neither outcome; the iteration is trapped in a mode where the interpretive act and the object of interpretation continually reconstitute one another, which is a third genuine possibility for what an addressable archive can do to the material it is built to hold, not a failure of the other two.

6 The Three-Way Taxonomy

The three cases now stand ready to be compared directly, and the comparison is best made in terms of a single question applied uniformly to each: what happens under repeated application of the recontextualization operator ρ to an accumulating archive A ? Formally, given

$$x_{n+1} = \rho(x_n, A),$$

three distinct long-run behaviors have appeared, and it is worth stating clearly that these are not three degrees of the same outcome but three qualitatively different things an archive can do to the material it holds.

Luhmann's archive exhibits sustained non-convergence by design. There is no privileged x_0 whose eventual interpretation the system is working toward, so the absence of a fixed point is not a failure of the mechanism but the condition under which it does its intended work. Every new retrieval produces a state that differs from what preceded it, and the value of the system lies entirely in the continued production of such difference. An archive of this kind could in principle run forever without ever needing to settle anything, because settling was never the point.

Swedenborg's archive exhibits convergence to a fixed point, in the sense that repeated application of ρ to new material eventually yields states that confirm rather than disturb the established interpretive scheme. This is convergence in a structural sense, not a psychological one: the man continued to write and to report new experience for decades, but the categories under which that experience was absorbed had, by a certain point, stabilized to the degree that new inscriptions no longer altered them. The vulnerability identified earlier, that the same stabilizing operation treats independently checkable material and unverifiable material identically, is a direct consequence of convergence: once a fixed point is reached, the archive retains no internal record of which inputs were confirmed from outside and which were not.

Dick's archive exhibits neither of the two preceding behaviors, and this is the taxonomy's third and most difficult case. The iteration does not converge, since no reading of the founding event is ever retained as final. But neither is it open non-convergence of Luhmann's kind, since the archive is not indifferent to its own object; it is organized entirely around a single anomalous event and returns to that event obsessively rather than moving freely across an unstructured field of material. What actually happens is that the object itself, x_0 , is not held fixed across the iteration. Each application of ρ alters what the founding event is taken to have been, so that the sequence x_n is not a sequence of interpretations converging on or diverging from a stable target but a sequence in which the target is redefined at every step by the act of interpreting it. This is a genuinely distinct behavior from the other two, not a mixture of them, and it is the reason the *Exegesis* resists being read either as a failed Swedenborgian cosmology or as a Luhmann-style productive miscellany. It is doing something the other two archives cannot do, because in both of those cases the object under interpretation, whether scholarly note or visionary episode, remains identifiable as itself across the iteration in a way that Dick's founding event does not.

Stated together, the taxonomy reads as follows. An addressable archive built from an accumulating store of inscriptions, subjected to repeated recontextualization, can generate sustained difference from a field with no privileged object, can stabilize a fixed interpretive scheme around anomalous material, or can continually reconstitute the very object it takes itself to be interpreting. These are not points on a spectrum from mundane to extraordinary. They are three independent outcomes of the same underlying operation, and no feature of the archive's mechanism alone determines which of the three will occur; that depends on what is fed into it and, in Dick's case, on whether the object of interpretation is permitted to hold still.

Nothing here claims these three exhaust every long-run behavior an archive of this kind

could exhibit; they are the three that these three cases happen to display, chosen because each is well documented and because together they cover a natural range from the least to the most anomalous source material. A fourth or fifth behavior is not ruled out in principle, and a reader who knows of another sustained archival project, kept over years against material that resists easy closure, might reasonably ask which of these three patterns it falls under, or whether it requires a category the present taxonomy has not yet named. That the question can be asked at all, of an archive the essay has not examined, is itself a sign that the taxonomy is doing real classificatory work rather than merely redescribing three cases chosen to fit it.

The question just raised has a sharper answer than a fourth or fifth pattern of the same kind. There are at least three cases that the taxonomy cannot classify at all, because each one varies something the taxonomy quietly held constant across Luhmann, Swedenborg, and Dick alike. That constancy is worth naming before proceeding. All three men take for granted that the interpreter's prior state feeds forward into the next one, that the archive's own internal coherence is the only standard it answers to, and that the world in which interpretation occurs is simply given rather than chosen. Three further cases, examined next, show that none of these three assumptions is necessary.

7 Three Foundations — Silence, Evidence, and the Carrier Bag

Jeanne Guyon, a French mystic writing in the late seventeenth century, developed a practice and a theology centered on what she called prayer of quiet: a discipline of interior silence in which discursive elaboration, the continual production of thought about one's experience, is treated not as a resource but as an obstacle. Her major work, the *Moyen Court*, describes a movement away from active meditation, in which the soul reasons and constructs images and arguments about God, toward passive receptivity, in which such construction is deliberately relinquished. This should not be overstated into a claim about what quietism metaphysically achieves, which is not this essay's concern. What matters here is narrower and fully secular: Guyon's discipline is a sustained, articulated program for reducing the degree to which one's own prior interpretive activity conditions what happens next, and it is worth taking seriously as a rival strategy to the one Luhmann, Swedenborg, and Dick all pursue without exception.

Every case examined so far assumes that the interpreter's previous state x_n feeds forward as an active ingredient in x_{n+1} . Luhmann exploits this fact deliberately, using the accumulated interpretive history to generate ever more surprising recombinations. Dick cannot escape it: each interpretation becomes further material for the next, which is exactly why the founding event never holds still. Swedenborg eventually damps this feedback into a fixed regime, but only after long accumulation, not by refusing the feedback from the outset. Guyon's discipline asks a different question. What happens if one deliberately attenuates the contribution of x_n itself, rather than accumulating, stabilizing, or recursively amplifying it? This is not silence in place of an archive, which would simply be an absence of the phenomenon under study. It is a disciplined reduction of one specific term in the mechanism already established, applied to the same kind of anomalous private experience that drove Swedenborg toward proliferation. Where Swedenborg responds to something

that exceeds ordinary categories by constructing an ever more elaborate apparatus to hold it, Guyon's practice responds to comparable excess by withdrawing the very activity that would elaborate it. She therefore supplies something the taxonomy needed and did not have: a case in which the response to anomalous experience is not to increase addressability but to reduce it, testing whether durability truly requires the filing this essay has so far taken as its premise.

It is worth resisting the temptation to inflate this into a direct historical lineage, since none is being claimed here, but the structural kinship is real and worth naming. A discipline built around distrusting one's own accumulated interpretive elaboration, insisting that the reliable result is the one least contaminated by the interpreter's prior discursive activity, is recognizably the same move that appears, two centuries later and in an entirely different register, in George Boole's project of representing the laws of thought as an algebra whose operations do not depend on any individual reasoner's discretion, and again in the logical positivists' insistence that a statement earns standing only by exposing itself to a check that does not run through the interpreter's own prior elaboration of it. None of this makes Guyon their forerunner in any sense a historian of logic would recognize. What it shows is that attenuating the interpreter's own carryover, treated here as one term among several in a formal dynamical system, is not a minor variation on the three-way taxonomy but a recognizable and recurring strategy for achieving reliability, one that later reappears in domains with no interest whatsoever in mysticism.

Cecilia Payne-Gaposchkin supplies a different kind of case, and it does not depend on her having had a private paracosm at all. Her 1925 doctoral dissertation, based on the analysis of stellar spectra using the physics of thermal ionization, concluded that hydrogen and helium are enormously more abundant in stars than the then-standard model of stellar composition assumed. Confronted with prevailing astronomical opinion, articulated forcefully by Henry Norris Russell, that this conclusion could not be correct, Payne-Gaposchkin included in her published dissertation a now-famous qualification describing the abundances her own data implied as almost certainly not real. Russell reversed his position within a few years, on the basis of further evidence, and the result she had derived became the foundation of modern stellar astrophysics: the recognition that stars are overwhelmingly hydrogen underlies the subsequent understanding of stellar nucleosynthesis, the physics of the reactions that power stars, and a large part of the twentieth century's observational and spectroscopic astrophysics that grew from it. What makes this case valuable here is not only the scale of what followed from it but the structure that produced it. Payne-Gaposchkin's archive, her spectral measurements, her application of Meghnad Saha's ionization theory, her calculations of relative abundance, was answerable to something Luhmann's, Swedenborg's, and Dick's archives were not: a body of independent evidence that did not originate with her and could not be reorganized by any recontextualization she might perform. Appendix E states this possibility formally, as the distinction between internal coherence and external identifiability. Payne-Gaposchkin's case gives that distinction its sharpest instance, and an unexpectedly complicating one, since the pressure she yielded to, at first, was not the evidence itself but an authoritative reading of adjacent evidence, which is a different thing and worth keeping distinct. Her case therefore shows both the theory's power and a wrinkle in it: an archive can be externally corrigible in principle while its author still defers, in practice, to socially authoritative interpretation rather

than to the independent constraint underneath it, and the eventual triumph of her result over that deference is itself part of what the case has to teach. What her case adds to the taxonomy is that recontextualization need not be free. Some interpretations become inadmissible, or in her case eventually vindicated, not because the archive fails or succeeds at accommodating them but because a world external to the archive will not indefinitely tolerate the wrong answer.

Ursula K. Le Guin supplies a third case, and it is the least like the other two, because she is neither withdrawing from archival elaboration nor submitting to an external check. She is deliberately constructing the space within which interpretation occurs. Her Carrier Bag Theory of fiction proposes narrative as a container for heterogeneous experience rather than a weapon aimed at a single climactic resolution, rejecting the assumption that a story's value lies in a linear trajectory toward victory or revelation. This is directly relevant to an essay about archives, because a container built to hold plurality without demanding that it resolve is itself an alternative to the very metaphor, the archive as a machine for sorting propositions toward an answer, that has organized every case examined so far. Le Guin does not simply theorize this; she builds it, repeatedly, and to a specific end: showing that categories usually treated as given, natural, or fixed are instead artifacts of whichever constructed world happens to hold them in place. In *The Dispossessed*, the protagonist Shevek moves between two societies, an anarchist collective and a propertied capitalist state, each constituted by a distinct and deliberately incompatible set of social constraints. The novel does not ask which society is correct. It uses the contrast between the two constraint systems to produce, and make visible, two different modes of subjectivity, neither of which is available without the other as a foil, which is itself an argument that a society's economic and social structure is not background but a determining condition of what kind of person becomes possible within it. *The Left Hand of Darkness* performs the same operation on gender rather than economy, constructing a human society whose members are physiologically without fixed sex for most of each reproductive cycle, which forces the categories a reader brings to the novel, categories usually treated as biologically self-evident, to appear instead as one contingent arrangement among others. *Always Coming Home* extends the same technique into an entire constructed culture, presented through invented documents, songs, and artifacts rather than a single narrative line, itself a carrier bag in form as well as content, and treats cultural knowledge itself, what a people takes to be simply how things are, as something built rather than discovered. Where Swedenborg discovers a world he takes to be given and Dick reconstructs a world around an event he cannot make hold still, Le Guin knowingly constructs worlds whose constraints are chosen precisely in order to show that identity, gender, and cultural knowledge, everywhere else in this essay treated as fixed background, are themselves imposed and could have been built otherwise.

These three cases do not merely add three more biographies to sit alongside the first three in a tidy symmetry of three men and three women. Read that way, the comparison would be decorative. Read correctly, each shows that a variable the original taxonomy held fixed can be deliberately manipulated, and that manipulating it produces a genuinely new archival behavior rather than a variant of the first three, with consequences that in each case reach well beyond the archive itself. Guyon shows that the interpreter's own contribution to the iteration is itself a free parameter, one that can be driven down rather than merely accumulated, exploited, or stabilized, a move whose descendants appear wherever a disci-

pline insists that reliable results must be checkable independently of the interpreter's own elaboration. Payne-Gaposchkin shows that the archive's material can be made answerable to a source of constraint that does not originate within the archive at all, and her specific result, that stars are made overwhelmingly of hydrogen, is part of the physical foundation on which the subsequent understanding of stellar energy and much of modern astrophysical instrumentation was built. Le Guin shows that the space within which interpretation occurs, the constraint-structure this essay has so far treated as a background condition rather than an object of choice, can itself be constructed and varied as a deliberate instrument, and uses that capacity specifically to show that identity, gender, and cultural knowledge are contingent arrangements rather than fixed givens. None of the first three cases, however different from one another, ever varies the interpreter's own contribution, submits to a source of constraint outside the archive, or treats the surrounding world as something built rather than found. These three cases are not corrections to the taxonomy in the sense of fixing an error in it. They are foundations the taxonomy was standing on without knowing it, degrees of freedom the first three cases held constant and therefore could never have revealed on their own.

8 What the Archive Is Doing

The six cases can now be pulled back from their differences toward the single claim the essay has been assembling all along, but that claim has to be broader than the one available after only three cases, because Guyon, Payne-Gaposchkin, and Le Guin each show that the archive is not, by itself, the fundamental object. What is fundamental is a coupled system: an accumulating record, an interpreter whose own prior state feeds into what comes next, a source of constraint that need not originate within the record, and a surrounding space of possibility within which interpretation occurs at all. The archive, as examined in the first three cases, is only one component of this system, the component that varies while the other three are held fixed. Once that is visible, the earlier claim can be restated more precisely rather than abandoned.

The operation examined throughout can be written as a single update,

$$x_{n+1} = \rho(\alpha_n x_n, A_n, E_n, W_n),$$

where A_n is the accumulated archive examined in the first three cases, E_n is constraint supplied independently of that archive, W_n is the constructed space of possibility within which interpretation occurs, and α_n governs how strongly the interpreter's own prior state is permitted to condition the next one. Luhmann, Swedenborg, and Dick each hold α_n , E_n , and W_n fixed at their default values and vary only A_n : Luhmann exploits it to maximize divergence, Swedenborg lets it converge to a stable regime, and Dick lets it act on an endogenous object that the archive itself keeps redefining. The three foundational cases of Section 7 each vary one of the remaining terms instead. Guyon drives α_n toward zero, attenuating the interpreter's own contribution rather than accumulating, stabilizing, or recursively amplifying it. Payne-Gaposchkin gives E_n unusual authority, subordinating the archive's internal coherence to a body of evidence that does not originate within it. Le Guin varies W_n directly, constructing the very space of constraint within which an archive's in-

interpretive positions are generated, which is why her case looks least like an archive at all: she is manipulating the term the other five cases treat as simply given.

This reframing changes what it means to say the earlier claim holds across all six cases. An archive, on this account, does not primarily solve a storage problem; storage would be satisfied by any durable medium, and a locked drawer stores as reliably as a Zettelkasten. What all six systems share is that each solves a problem in this larger coupled space rather than a merely spatial one, making it possible for a later interpretive state to encounter earlier material, external constraint, or an alternate constructed world under conditions that did not exist when that material, constraint, or world was first made available. Preservation is not the operative concept in any of the six cases. Retrieval, whether of an inscription, an independent measurement, or a deliberately constructed alternative society, is never mere recovery; ρ does not return its inputs unchanged, it produces a new state from their encounter.

The three original cases can now be seen as differing only in how A_n behaves while α_n , E_n , and W_n sit at whatever value is typical of ordinary interpretive practice: full carry-over of the prior state, no privileged external check, and a single given world. Luhmann's non-hierarchical addressing maximizes the range of later interpretive positions reachable from any given card, and the resulting non-convergence is what a system optimized for that purpose should produce. Swedenborg's cross-referencing, applied to material with a cosmological stake in coherence, converges because the positions it generates are constrained to remain compatible with an accumulating shared scheme. Dick's *Exegesis* generates positions that feed back into the identity of the event they interpret, which is why neither convergence nor open divergence describes it. The three foundational cases show that none of α_n , E_n , or W_n needs to sit at its default. Guyon shows the interpreter's own carryover can be suppressed rather than exploited. Payne-Gaposchkin shows the archive can be made to answer to a constraint it did not generate, with the further complication that social authority about evidence is not the same thing as the evidence itself. Le Guin shows the surrounding world can be built rather than found, turning the constraint-space itself into an experimental variable.

There is a further consequence worth drawing out before the coda, concerning what this fuller account implies about the relationship between a builder and the system they build. Across all six cases, whether the varied term is the archive, the interpreter's own contribution, the source of external constraint, or the surrounding world, the builder is not simply managing an overflow of material that a better memory would have handled directly. They are constructing, attenuating, subordinating to, or fabricating one term in a coupled dynamical system whose behavior could not have been fully anticipated at the moment the system was first set in motion. This is what licenses treating Luhmann's ordinary scholarly archive, Swedenborg's and Dick's extraordinary ones, Guyon's disciplined withdrawal from elaboration, Payne-Gaposchkin's evidentially answerable dataset, and Le Guin's deliberately constructed societies under a single description. None of the six is generative because of the extraordinariness of its content. Each is generative because it manipulates, in a different way, one term of the same underlying coupled system, and something new is produced by that manipulation that no single term, held fixed, could have produced alone.

9 Coda — The Filed Paracosm

Return, at the end, to the situation the essay opened with, stripped now of everything but its bare structure. Someone accumulates more than an unaided mind can hold in view at once. This alone is not yet interesting; it happens to any sufficiently long-lived intellectual project. What is interesting is the moment such a person discovers that the material has become not merely large but unreachable by direct recollection, and responds by building a system whose entire function is to make that unreachable material reachable again from wherever thought happens to stand later. The system is not a container. It is an address, in the fullest sense the word has carried throughout this essay: a way of reaching something from a position that did not exist when the thing was first written down.

Luhmann, Swedenborg, and Dick did not agree on what they were archiving, and it has been the burden of this essay to show that they did not need to. A sociologist's reading notes, a visionary's decades of reported experience, and a single unresolved event obsessively revisited are three radically different kinds of material subjected to the same operation, with three radically different results. But in each case the underlying discovery is identical: a private intellectual world had outgrown the capacity of memory to inhabit it directly, and only an external architecture, addressed, cross-referenced, and repeatedly returned to, could keep that world available to a mind that was no longer the mind that had first encountered it.

This is the sense in which each of them filed a paracosm rather than simply lived in one. The phrase names the moment this essay has circled from the start: not the content of an invented or revealed world, but the apparatus built to keep returning to it, and the strange fact that such an apparatus does not merely store what was found there. It keeps producing, from the encounter between an old inscription and a new position from which to read it, worlds that no single act of memory, however vivid, could have held still long enough to see whole.

A A Minimal Dynamics of the Addressable Archive

The informal operator ρ used throughout the essay can be made more precise by distinguishing the archive, the cognitive state of its reader, and the object, if any, around which interpretation is organized. Let an archive at time n be a finite directed labelled graph

$$A_n = (V_n, L_n, a_n, \lambda_n),$$

where V_n is the set of inscriptions presently available, $L_n \subseteq V_n \times V_n$ is a set of explicit or implicit cross-references, $a_n : V_n \rightarrow \Sigma^*$ assigns each inscription an address, and $\lambda_n : V_n \rightarrow \mathcal{C}$ assigns its recoverable content. The address space Σ^* need not be spatial or hierarchical. It is required only to support sufficiently stable re-identification that an inscription deposited at one time remains reachable at another.

Let X denote a space of interpretive states. At time n , a reader occupies some

$$x_n \in X.$$

Retrieval is represented by a state-dependent map

$$R : X \times A_n \longrightarrow \mathcal{P}(V_n),$$

so that $R(x_n, A_n)$ is the set of inscriptions made salient or reachable from the present interpretive position. Recontextualization can then be written

$$\rho : X \times \mathcal{P}(V_n) \times A_n \longrightarrow X,$$

with

$$x_{n+1} = \rho(x_n, R(x_n, A_n), A_n).$$

The essential claim of the essay is now visible formally. In general,

$$x_{n+1} \neq x_n \quad \text{and} \quad x_{n+1} \neq \lambda(v) \quad \text{for every } v \in R(x_n, A_n).$$

The result of archival retrieval is therefore reducible neither to the prior cognitive state nor to the retrieved inscription. It is relationally generated by their encounter.

The archive itself also changes:

$$A_{n+1} = U(A_n, x_{n+1}),$$

where U is an update operator capable of adding inscriptions, links, addresses, annotations, or indices. The complete archival dynamics are consequently recursive:

$$\boxed{\begin{aligned} S_n &= R(x_n, A_n), \\ x_{n+1} &= \rho(x_n, S_n, A_n), \\ A_{n+1} &= U(A_n, x_{n+1}). \end{aligned}}$$

The archive changes the reader, whose changed state changes the archive, which changes the space of possible future retrievals.

This formulation explains why an addressable archive is categorically different from inert storage. If $R(x, A) = R(y, A)$ for all $x, y \in X$, and if ρ merely reproduces retrieved content, then the system collapses toward a conventional database. The phenomenon considered in this essay requires state-dependent retrieval or state-dependent reinterpretation, and normally both.

B Reachability, Addressability, and Associative Distance

The existence of an inscription in an archive does not imply its practical availability. It is useful therefore to distinguish preservation from reachability.

For $u, v \in V_n$, write $u \rightsquigarrow v$ when there exists a directed path

$$u = v_0 \rightarrow v_1 \rightarrow \cdots \rightarrow v_k = v$$

through the archive's reference structure. Define the directed archival distance

$$d_{A_n}(u, v) = \inf \{ k : u = v_0 \rightarrow \cdots \rightarrow v_k = v \},$$

with $d_{A_n}(u, v) = \infty$ when no such path exists.

A preserved inscription v may therefore be materially present while functionally absent:

$$v \in V_n \quad \text{but} \quad d_{A_n}(u, v) = \infty$$

from every currently reachable starting point u . Preservation without a retrieval path is archival survival without cognitive availability.

For a present interpretive state x , let $B(x) \subseteq V_n$ denote the inscriptions directly retrievable from that state. Its reachable archival region is

$$\mathcal{R}_{A_n}(x) = \{ v \in V_n : \exists u \in B(x) \text{ such that } u \rightsquigarrow v \}.$$

An archive can then grow in at least two mathematically distinct ways. It may increase its volume, $|V_{n+1}| > |V_n|$, or increase its effective reachability, $|\mathcal{R}_{A_{n+1}}(x)| > |\mathcal{R}_{A_n}(x)|$. These need not coincide. An enormous poorly indexed archive can have greater cardinality but lower practical reachability than a much smaller densely referenced one.

This supplies a more exact interpretation of the claim that the systems considered in the essay solve a temporal rather than merely a storage problem. Their relevant achievement is not simply $V_n \subseteq V_{n+1}$, but the preservation, creation, and shortening of paths by which earlier inscriptions can become inputs to later cognition.

One can accordingly define a crude archival reachability functional

$$\Gamma(A_n, x) = \sum_{v \in V_n} w(v) \exp[-\beta d_{A_n}(B(x), v)],$$

where $w(v) \geq 0$ represents the significance of inscription v , $\beta > 0$ penalizes associative distance, and

$$d_{A_n}(B(x), v) = \inf_{u \in B(x)} d_{A_n}(u, v).$$

Material at infinite distance contributes zero. An effective archival intervention is then one for which

$$\Delta\Gamma = \Gamma(A_{n+1}, x) - \Gamma(A_n, x) > 0.$$

On this account, a useful cross-reference does not add information to the archive at all. It changes the geometry of what can be reached.

C Attractors, Exploration, and Endogenous Objects

The taxonomy developed in Section 6 can be represented more carefully by distinguishing three dynamical regimes.

Let

$$F_{A_n}(x) = \rho(x, R(x, A_n), A_n).$$

If the archive changes sufficiently slowly over some interval, its short-run interpretive dynamics may be approximated by

$$x_{n+1} = F_A(x_n).$$

Swedenborg's case was described in the body as convergent. Strictly speaking, the relevant mathematical object need not be a fixed point $F_A(x^*) = x^*$. The stronger and more appropriate concept is an attracting set $\mathcal{A} \subseteq X$ such that, for states in some basin $B(\mathcal{A})$,

$$d(F_A^n(x), \mathcal{A}) \longrightarrow 0 \quad (n \rightarrow \infty).$$

Individual interpretations may continue changing indefinitely while remaining confined to an increasingly stable interpretive regime. The cosmology therefore need not stop developing in order to stabilize.

Luhmann's archive is better represented as deliberately preserving exploratory dispersion. For an appropriate distance or divergence D on interpretive states, define $\Delta_n = D(x_{n+1}, x_n)$. Productive non-convergence requires neither that Δ_n increase nor that trajectories become chaotic. It requires only that the system not be organized around forcing $\Delta_n \rightarrow 0$ toward a privileged interpretive state. Novelty remains admissible output.

Dick's case requires an additional variable. Let $o_n \in O$ represent the current construction of the anomalous event that the archive is attempting to explain. Then

$$x_{n+1} = \rho(x_n, A_n, o_n),$$

while interpretation itself updates the object:

$$o_{n+1} = g(o_n, x_{n+1}, A_n).$$

The resulting coupled system is

$$\begin{aligned} x_{n+1} &= \rho(x_n, A_n, o_n), \\ o_{n+1} &= g(o_n, x_{n+1}, A_n), \\ A_{n+1} &= U(A_n, x_{n+1}, o_{n+1}). \end{aligned}$$

A conventional interpretive problem treats o as exogenous and seeks an x^* adequate to it. Dick's archival problem makes o_n endogenous. Consequently, convergence of interpretation cannot be assessed independently of convergence of the interpreted object.

If $D_O(o_{n+1}, o_n) \not\rightarrow 0$, then failure of x_n to converge need not indicate inadequate search over a stable hypothesis space. The target itself is moving. This distinguishes recursive reconstruction from ordinary indecision.

D A Measure of Archival Surprise

The claim that an archive can behave as an interlocutor can also be given an information-theoretic interpretation. Suppose a reader in state x_n has a probability distribution $P_n(v) = P(v \mid x_n, A_n)$ over inscriptions likely to become relevant next. Retrieval of v carries self-information

$$I_n(v) = -\log P_n(v).$$

A retrieval is surprising when an inscription judged improbable from the present state nevertheless becomes reachable through the archive.

This suggests defining expected archival surprise as

$$\mathcal{S}(x_n, A_n) = \sum_{v \in V_n} Q(v \mid x_n, A_n) [-\log P_n(v)],$$

where Q describes the archive's actual retrieval process.

If $Q = P$, the archive merely reproduces the reader's existing expectations. Its average surprise reduces to the entropy

$$H(P_n) = -\sum_v P_n(v) \log P_n(v).$$

More interesting is the divergence

$$D_{\text{KL}}(Q \parallel P) = \sum_v Q(v) \log \frac{Q(v)}{P(v)},$$

which measures how strongly the archive's retrieval behavior departs from what the reader would have selected unaided.

This gives a possible formal interpretation of Luhmann's description of the Zettelkasten as a communication partner. Its otherness need not be mystical or anthropomorphic. It is sufficient that $D_{\text{KL}}(Q \parallel P) > 0$: the externally organized archive systematically returns material with a distribution different from the distribution generated by immediate expectation.

Too little divergence produces redundancy. Too much divergence produces noise. One can therefore conjecture that productive associative archives occupy an intermediate regime,

$$0 < D_{\text{KL}}(Q \parallel P) < \infty,$$

in which retrieval remains intelligible from the current state while retaining enough independence to alter it. The archive is productive precisely because it is neither a perfect mirror nor a randomizer.

E External Constraint and Epistemic Identifiability

The Swedenborg case introduces a problem not present in purely generative archives: internal coherence does not identify external truth. This can be stated independently of any judgment about the particular claims involved.

Let $h \in \mathcal{H}$ be an interpretive hypothesis and let A denote the internal archive. Suppose two hypotheses h_1 and h_2 generate indistinguishable internal archival predictions:

$$P(A \mid h_1) = P(A \mid h_2).$$

Then no amount of reasoning over A alone can identify which hypothesis is correct. The hypotheses are observationally equivalent relative to the archive.

Introduce independent evidence E . Identification becomes possible only if $P(E \mid h_1) \neq P(E \mid h_2)$. Thus internal convergence, $x_n \rightarrow \mathcal{A}$, does not entail external identification, $h_n \rightarrow h_{\text{true}}$. An archive may become maximally self-consistent while remaining underdetermined with respect to competing explanations of its own contents.

This distinction clarifies the difference between material constrained by independent records and material for which no contemporary external test was available. Let $C(v) \in [0, 1]$ denote the degree to which an inscription v is constrained by evidence independent of the archive that contains it. Two inscriptions can have equal internal coherence, $K_A(v_1) = K_A(v_2)$, while differing radically in external constraint, $C(v_1) \gg C(v_2)$. If the archive's update rule responds only to K_A , then this distinction disappears internally.

One may therefore define an epistemically augmented update rule

$$\rho^*(x, v, A, E) = \rho(x, v, A) + \eta \Phi(E, v),$$

where Φ represents independent evidential constraint and η its effective weight. Setting $\eta = 0$ produces a system capable of arbitrarily strong internal stabilization without external correction. The mathematical possibility is general and does not depend on visionary material: any sufficiently self-referential theoretical, ideological, bureaucratic, or computational archive can exhibit it.

F Path Dependence and the Irreversibility of Interpretation

Finally, the archival process is generally path-dependent. Let a sequence of retrieved inscriptions be $\pi = (v_1, v_2, \dots, v_k)$. Successive recontextualization produces

$$x_k = \rho_{v_k} \circ \rho_{v_{k-1}} \circ \dots \circ \rho_{v_1}(x_0).$$

For another ordering $\pi' = (v_{\sigma(1)}, \dots, v_{\sigma(k)})$, there is no reason in general to expect

$$\rho_{v_k} \circ \dots \circ \rho_{v_1} = \rho_{v_{\sigma(k)}} \circ \dots \circ \rho_{v_{\sigma(1)}}.$$

Indeed, the interesting case is

$$[\rho_u, \rho_v] = \rho_u \rho_v - \rho_v \rho_u \neq 0.$$

Interpretation is then non-commutative: encountering u before v produces a different state from encountering v before u .

This supplies a final reason why the archive cannot be understood as a static collection of propositions. Two archives containing exactly the same inscriptions, $V(A) = V(B)$,

need not produce the same intellectual trajectory if their addressing, linking, or retrieval structures induce different paths through those inscriptions:

$$L(A) \neq L(B) \implies \mathcal{T}(A, x_0) \neq \mathcal{T}(B, x_0)$$

in general.

The intellectual object is therefore not exhausted by its contents. It includes a topology of return and a history of traversal. An archive is not merely what has been written. It is the structured space of ways in which what has been written can become present again.

G The Generalized Model: Attenuation, External Constraint, and Constructed Worlds

The dynamics developed in Appendices A through F treat A_n , the archive, as the only term subject to variation, with the interpreter's carryover, the source of constraint, and the surrounding space of possibility all held at implicit default values. Sections 7 and 8 argued informally that three further cases, Guyon, Payne-Gaposchkin, and Le Guin, are best understood as varying exactly these other terms. This appendix states that generalization precisely.

Let the single-term update of Appendix A,

$$x_{n+1} = \rho(x_n, S_n, A_n), \quad S_n = R(x_n, A_n),$$

be extended to

$$x_{n+1} = \rho(\alpha_n x_n, A_n, E_n, W_n),$$

where A_n retains its meaning from Appendix A, E_n is a constraint process supplied independently of A_n , W_n is a constructed constraint-space or world in which interpretation occurs, and $\alpha_n \in [0, 1]$ is a scalar or operator governing the degree to which the prior interpretive state x_n is carried forward into the encounter that produces x_{n+1} . The three-way taxonomy of Appendix C is recovered as the special case in which $\alpha_n \equiv 1$, E_n exerts no independent authority over the update, and W_n is held fixed at a single default world W^* throughout. Luhmann, Swedenborg, and Dick differ from one another only in the behavior of A_n under that restriction.

Attenuation

Guyon's discipline can be represented as a program for driving α_n toward zero. Write the update, restricted to this one term, as

$$x_{n+1} = \rho(\varepsilon_n x_n, e_n), \quad \varepsilon_n \rightarrow 0,$$

where e_n denotes whatever is encountered at step n , independent of prior interpretive elaboration. As $\varepsilon_n \rightarrow 0$, the interpreter's own prior state ceases to be an active ingredient in the next state, and x_{n+1} depends increasingly on e_n alone rather than on the accumulated history of interpretation. This is the precise sense in which Guyon's practice is a regularization

of recursive self-conditioning rather than an absence of process. It is also, formally, close to Dick's opposite extreme. In the *Exegesis*, each interpretation becomes further material for the archive that generates the next interpretation,

$$x_n \longrightarrow A_{n+1} \longrightarrow x_{n+1} \longrightarrow A_{n+2} \longrightarrow \cdots,$$

so that the system's own outputs increasingly dominate its future inputs. Where Dick's dynamics amplify the carryover of prior interpretation into an ever more self-referential archive, Guyon's discipline attempts to suppress that same carryover at its source. The two cases occupy opposite ends of what α_n is free to do, and neither is visible as a distinct possibility until α_n is separated out from A_n .

External Constraint

Payne-Gaposchkin's case sharpens the identifiability problem of Appendix E rather than replacing it. There, an archive's internal coherence was shown to leave a class of hypotheses $h_1, h_2 \in \mathcal{H}$ observationally equivalent whenever $P(A \mid h_1) = P(A \mid h_2)$, with identification possible only given independent evidence E such that $P(E \mid h_1) \neq P(E \mid h_2)$. The augmented update rule introduced there,

$$\rho^*(x, v, A, E) = \rho(x, v, A) + \eta \Phi(E, v),$$

can now be read as the special case of the generalized model in which E_n is granted a nonzero weight η rather than the $\eta = 0$ regime that leaves internal stabilization unchecked. Payne-Gaposchkin's spectroscopic data, read through Saha's ionization theory, constitutes an E_n that is answerable to measurement and calculation performed independently of any single archive's internal bookkeeping. The complication her case introduces is that η can be suppressed not only by the archive's own design but by deference to an authoritative reading of E_n that is itself mistaken; a nonzero η formally guarantees only that external constraint is weighted, not that it is weighted correctly or acted upon promptly. Her case therefore shows both that $\eta > 0$ is achievable in practice, and that achieving it is not sufficient on its own to guarantee that x_{n+1} tracks E_n rather than a socially mediated proxy for it.

Constructed Worlds

Le Guin's case requires the term with no analogue in Appendices A through F: the space W_n itself. Where the other five cases interpret within a single given world, Le Guin's narrative practice constructs a family of distinct constraint-spaces $\{W^{(1)}, W^{(2)}, \dots\}$ and traces trajectories of a single subject across more than one of them. Let a trajectory under a fixed world be written $x_n^{(i)}$, generated by

$$x_{n+1}^{(i)} = \rho\left(x_n^{(i)}, A_n, W^{(i)}\right).$$

The Dispossessed realizes two such trajectories for a single protagonist, one generated under the anarchist collective's constraint-space $W^{(1)}$ and one under the propertied state's $W^{(2)}$,

and its argument is carried by the divergence between them:

$$x_n^{(1)} \neq x_n^{(2)}$$

for the same underlying n , despite a shared point of origin. Varying W_n is therefore not a variant of varying A_n ; it changes the space within which any archive's interpretive positions are generated in the first place, which is why holding W_n fixed at a single default, as Appendices A through F implicitly do, is a substantive restriction rather than a neutral simplification.

The General Case

Stated together, the six cases occupy six distinct regions of the same four-term model. Luhmann varies A_n to maximize divergence. Swedenborg varies A_n toward a fixed point. Dick lets A_n act recursively on an endogenous object o_n , as in Appendix C. Guyon drives α_n toward zero. Payne-Gaposchkin raises η , the effective weight on E_n . Le Guin varies W_n directly, generating divergent trajectories under a shared archive and a shared interpreter. No one of these six operations is reducible to any other, and the taxonomy of Appendix C, restricted as it was to variation in A_n alone, could not in principle have distinguished them. The archive, on this fuller account, is one adjustable term in a coupled system of interpreter, evidence, and world, not the system itself.

References

- [1] Niklas Luhmann, "Kommunikation mit Zettelkästen: Ein Erfahrungsbericht," in André Kieserling (ed.), *Universität als Milieu: Kleine Schriften*, Haux, Bielefeld, 1992.
- [2] Niklas Luhmann, *Social Systems*, trans. John Bednarz Jr. and Dirk Baecker, Stanford University Press, Stanford, 1995.
- [3] Johannes F. K. Schmidt, "Niklas Luhmann's Card Index: Thinking Tool, Communication Partner, Publication Machine," in Alberto Cevolini (ed.), *Forgetting Machines: Knowledge Management Evolution in Early Modern Europe*, Brill, Leiden, 2016.
- [4] Alberto Cevolini (ed.), *Forgetting Machines: Knowledge Management Evolution in Early Modern Europe*, Brill, Leiden, 2016.
- [5] Ann M. Blair, *Too Much to Know: Managing Scholarly Information before the Modern Age*, Yale University Press, New Haven, 2010.
- [6] Markus Krajewski, *Paper Machines: About Cards & Catalogs, 1548–1929*, trans. Peter Krapp, MIT Press, Cambridge, MA, 2011.
- [7] Aby Warburg, *Der Bilderatlas Mnemosyne*, ed. Martin Warnke and Claudia Brink, Akademie Verlag, Berlin, 2010.
- [8] Emanuel Swedenborg, *Arcana Coelestia*, 8 vols., London, 1749–1756.
- [9] Emanuel Swedenborg, *De Telluribus in Mundo Nostro Solari, quæ Vocantur Planetæ, et de Telluribus in Cælo Astrifero*, London, 1758.
- [10] Emanuel Swedenborg, *Spiritual Experiences*, commonly known as the *Spiritual Diary*, written 1747–1765.
- [11] Ernst Benz, *Emanuel Swedenborg: Visionary Savant in the Age of Reason*, Swedenborg Foundation, West Chester, PA, 2002.
- [12] Philip K. Dick, *The Exegesis of Philip K. Dick*, ed. Pamela Jackson and Jonathan Lethem, Houghton Mifflin Harcourt, Boston, 2011.
- [13] Lawrence Sutin, *Divine Invasions: A Life of Philip K. Dick*, Harmony Books, New York, 1989.
- [14] Paolo Rossi, *Logic and the Art of Memory: The Quest for a Universal Language*, trans. Stephen Clucas, University of Chicago Press, Chicago, 2000.
- [15] Jeanne-Marie Bouvier de la Motte Guyon, *Moyen Court et Très Facile de Faire Oraison*, Lyon, 1685; trans. as *A Short and Easy Method of Prayer*.
- [16] Jeanne-Marie Bouvier de la Motte Guyon, *The Autobiography of Madame Guyon*, trans. Thomas Taylor Allen, Chapman and Hall, London, 1897.

- [17] Thomas C. Upham, *Life, Religious Opinions, and Experience of Madame de la Mothe Guyon*, Harper & Brothers, New York, 1877.
- [18] Cecilia H. Payne, *Stellar Atmospheres: A Contribution to the Observational Study of High Temperature in the Reversing Layers of Stars*, Ph.D. dissertation, Radcliffe College, Cambridge, MA, 1925.
- [19] Cecilia Payne-Gaposchkin, *Cecilia Payne-Gaposchkin: An Autobiography and Other Recollections*, ed. Katherine Haramundanis, 2nd ed., Cambridge University Press, Cambridge, 1996.
- [20] Katherine Haramundanis (ed.), *Cecilia Payne-Gaposchkin: An Autobiography and Other Recollections*, Cambridge University Press, Cambridge, 1996.
- [21] Ursula K. Le Guin, *The Dispossessed: An Ambiguous Utopia*, Harper & Row, New York, 1974.
- [22] Ursula K. Le Guin, *The Left Hand of Darkness*, Ace Books, New York, 1969.
- [23] Ursula K. Le Guin, *Always Coming Home*, Harper & Row, New York, 1985.
- [24] Ursula K. Le Guin, "The Carrier Bag Theory of Fiction," in *Dancing at the Edge of the World: Thoughts on Words, Women, Places*, Grove Press, New York, 1989.