

# A structural analysis of the Voynich Manuscript as a functional document

## Part 1: Physical Loss and Structural Continuity in the Voynich Manuscript

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### English Summary

This post is Part 1 of a multi-part summary of a longer research work originally written in Japanese.

The English section provides a concise summary for discussion.

The full Japanese text is included below for transparency and precise reference.

This is a working hypothesis based on observable structural features of the manuscript. It does not claim a definitive decipherment.

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### English Text

This chapter establishes the basic conditions under which the analysis of the Voynich Manuscript is conducted, focusing on the extent of surviving material and the portions that are demonstrably lost.

The Voynich Manuscript (Yale University, Beinecke Rare Book & Manuscript Library, MS 408) preserves most of its overall structure.

However, it is also clear that several folios have been physically lost.

This study follows the folio numbering and organization established by Yale University and treats these losses as fixed premises for analysis.

Based on extant material and scholarly consensus, the following folios are confirmed to be physically missing:

- f12
- f59
- f60
- f61
- f62

- f109
- f110
- f111

These folios are entirely lost, including both text and illustrations, and therefore cannot be reconstructed or restored.

The number of extant folios is 116, while the original manuscript is estimated to have consisted of approximately 124 folios.

Accordingly, the Voynich Manuscript should be regarded as a *partially lost manuscript*: its overall structure remains traceable, but critical gaps exist at key locations.

Importantly, the missing folios are not randomly distributed.

They are concentrated at structurally significant points within the manuscript:

- **f12**: the opening of the Herbal section, corresponding to the loss of part of the initial plant set
- **f59–62**: a sectional boundary, marking the transition from the Herbal to the Cosmological section
- **f109–111**: the terminal portion, corresponding to the transition from the Recipes section to the Appendix

This pattern suggests that the losses occurred at structural turning points rather than as accidental or isolated events.

In this study, no attempt is made to speculate about or reconstruct the contents of the missing folios.

Instead, the analysis focuses on clarifying:

- the relationships among the extant folios,
- the functional continuity between sections, and
- what specific connections are interrupted by the losses.

By making these discontinuities explicit, it becomes possible to demonstrate that a coherent overall structure remains intelligible even in the presence of missing material.

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## **Part 2: Methodological Principles for Structural Analysis**

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### **English Summary**

This post is Part 2 of a multi-part summary of a longer research work originally written in Japanese.

The English section provides a concise summary for discussion.

The full Japanese text is included below for transparency and precise reference.

This study does not aim at decipherment or translation into any specific language.

It adopts a structural and functional approach based solely on observable features of the manuscript.

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### **English Text**

This chapter outlines the analytical methodology employed in this study.

The approach presented here does not seek to translate the Voynich Manuscript into any known language, nor does it attempt cryptographic decipherment.

Instead, the analysis is based on observable elements of the manuscript—such as the original text, illustrations, layout, and patterns of repetition—in order to identify the functional role of each page and the relationships between pages.

Any interpretations or provisional translations presented in this study are derived from this methodology and do not claim to represent a unique or definitive solution.

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### **Basic Principles**

The analysis adopts the following principles:

- The original text is not altered.
- Transcriptions use diplomatic transcription, preserving spelling, line breaks, and paragraph structure.
- Text and illustrations are treated as independent sources of information and are not assumed to share the same semantic system.
- No assumptions are made regarding proper nouns such as plant names, personal names, or star names.
- Conclusions are not drawn from single pages; inter-page relationships are prioritized.
- The same observational perspective and procedure are applied consistently to all folios.

These principles are intended to minimize analytical arbitrariness and ensure reproducibility.

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## Observed Elements

Prior to semantic interpretation, the following elements were examined:

- Repetition and frequency of word forms
- Positional distribution of words (paragraph-initial, medial, terminal)
- Line counts and paragraph structures
- Stability of initial and terminal words
- Vocabulary shared across sections
- Components of illustrations (plant parts, human figures, water, containers, etc.)
- The relationship between missing folios and sectional boundaries

All of these features can be confirmed without assuming any specific underlying language.

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## Concept of Structural Analysis

In this study, words are treated not as semantic units but as **functional units within textual structures**.

When identical word forms:

- appear in similar positions across multiple folios,
- form comparable syntactic patterns, and
- are inherited across different sections,

they are interpreted not primarily as words with fixed meanings, but as elements fulfilling similar functional roles.

From this perspective, pages are classified not by thematic content, but by functional categories such as definition, application, execution, and appendix.

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## Extraction of Meaning Fields

Individual words are not translated directly.

Instead, the analysis extracts *meaning fields* formed by groups of words.

A meaning field refers to a functional domain such as:

- action (change, adjustment, mitigation),
- method (soaking, applying, mixing),
- condition (quantity, frequency, timing),
- target (internal/external, surface深深).

These are not definitive lexical meanings but functional inferences derived from structure and placement.

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### **Position of Provisional Translations**

All translations presented in this study are working provisional translations. They serve only as auxiliary expressions to explain structural relationships and extracted meaning fields in natural language.

Such provisional translations are presented only when they satisfy the following conditions:

- they do not contradict the original structure,
- they preserve consistency with illustrations and surrounding folios, and
- they do not exclude alternative interpretations.

Accordingly, these translations are not final but represent one format for sharing analytical results.

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### **Reproducibility and Scope**

The analytical method described here can be applied to any folio using the same procedure.

After presenting detailed analyses of representative folios, this study applies the same method to all folios and provides a summarized result.

This ensures that the conclusions are based on the structure of the manuscript as a whole rather than on isolated pages.

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### **Supplement: Treatment of Frequent Word Forms (Example)**

Frequently occurring word forms in the Voynich Manuscript (e.g., *qo*, *che*, *she*, *aiin*) are treated not as fixed semantic units but as elements defined by their functional roles within textual structures.

<b>Word form</b>	<b>Functional role in this study</b>	<b>Notes</b>
qo / qokeedy	Presentation of subject or target	Often paragraph-initial
che / she group	Action or procedure	Concentrated in medial positions
aiin	Condition, frequency, quantity	Frequent at line ends and in Recipes
ol	Connection or supplementation	Structural junctions

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# Part 3: Functional Flow Across Manuscript Sections

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## English Summary

This post is Part 3 of a multi-part summary of a longer research work originally written in Japanese.

The English section provides a concise summary for discussion.

The full Japanese text is included below for transparency and precise reference.

This study does not claim decipherment.

It argues that several sections of the manuscript form a functional sequence: **definition → application → execution → administration**.

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## English Text

This chapter presents representative folio analyses to demonstrate a coherent functional flow across major sections of the Voynich Manuscript.

Rather than treating each folio as an isolated “content page,” this study treats folios as operational units that play roles within a larger workflow. Using observable structure (paragraphing, repetition, positional regularities) and illustration type (plant vs. human/water vs. minimal/no imagery), the manuscript’s major sections can be aligned as a sequence:

**Definition → Application → Execution → Administration**

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### 1) f1v and f1r as a paired “definition layer”

#### Positioning

f1v and f1r are placed at the beginning of the Herbal section and together present a baseline structure that later herbal folios inherit in simplified form.

This study interprets them as a deliberate pair:

- **f1v:** outward / surface-oriented use
- **f1r:** inward / internal-oriented use

#### Diplomatic transcriptions (as provided)

f1v:

- qokeedy qokaiin shey chol chedy
- qol shedy qokeey aiin
- qokeedy qokaiin chey

f1r:

- qokeedy qokaiin chol shedy
- qokaiin chey aiin
- qokeedy qokaiin chol

#### **Structural observations (pre-interpretation)**

Both folios share a compact three-paragraph structure.

Certain word forms stabilize paragraph openings (e.g., *qokeedy / qokaiin*), while other groups cluster in medial positions, and *aiin*-type forms appear toward endings. This pattern is consistent with procedural or explanatory units rather than narrative prose.

#### **Illustration alignment**

The illustration styles differ in a way that coheres with a paired functional design:

- f1v emphasizes the root system more strongly, consistent with external processing or extraction-oriented depiction.
- f1r emphasizes the above-ground parts, consistent with ingestion-oriented depiction.

The key point is not a claim of lexical meaning, but a claim of **paired functional design**: two “uses” presented as a baseline template.

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## **2) f75r as an “application layer” bridging plants to body procedure**

#### **Positioning**

f75r appears at the transition from the Herbal section toward the Balneological / body-application material. This study positions f75r as a page that explains **how to implement** previously defined effects on the body.

#### **Diplomatic transcription (as provided)**

- ol shedy qokaiin
- cheol aiin chedy
- qokeedy shedy

#### **Structural observations**

The paragraphs are extremely short and resemble operational directives.

Compared to f1r/f1v, the style shifts from descriptive units to instruction-like units: an initial connective-like element (*ol*), action-like elements placed early, and *aiin*-type conditioning near action elements. This suggests a transition from “definition” to “procedure.”

#### **Illustration alignment**

The imagery is human-body-and-water oriented rather than plant oriented, consistent with an application/procedure step: the question becomes not “what is the plant,” but “how is the action enacted on the body.”

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### 3) f85r as an “execution log layer” (Recipes) with minimal explanation

#### Positioning

f85r is placed at the beginning of the Recipes section. Here the function is not explanation but **execution**: highly compressed statements that presuppose earlier sections.

#### Diplomatic transcription (as provided)

- qokaiin aiin
- chey chey
- ol qokeedy

#### Structural observations

The units are extremely short, with few or no connective/explanatory elements.

The arrangement resembles a command/log pattern: conditioning first, repeated action in the center, and a target-like element at the end. Again, this is argued structurally rather than lexically.

#### Illustration alignment

The relative absence of imagery is itself treated as meaningful: an execution-oriented section does not require repeated visual explanation if earlier pages already establish the context.

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### 4) f116v as an “administrative / appended layer” outside the main workflow

#### Positioning

The final folio, f116v, differs sharply from the main text in script/format and in its mixture of elements such as repeated “maria,” symbols, and numerals.

#### Diplomatic transcription (as provided)

- maria maria maria
- six + maria

#### Structural observations

It lacks the stable paragraphing and recurring word-form system used elsewhere.

It also contains symbols and numerals that do not appear in the main body in the same way. These differences support treating f116v as a later administrative or marginal layer rather than a continuation of the primary operational flow.

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### Inter-folio functional continuity

Across these representative folios, the following continuity becomes structurally visible:

- **f1r / f1v**: define effects/uses in a paired baseline template
- **f75r**: apply/implement those effects as body procedure
- **f85r**: record/execute as compressed action units (log-like)
- **f116v**: administrative trace, not part of the operational sequence

Therefore, the manuscript can be described—at the level of observable structure—as a document whose pages are connected primarily by **roles**, not by narrative meaning.

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# Part 4: Cross-Sectional Structure and Index-Like Layers

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## English Summary

This post is Part 4 of a multi-part summary of a longer research work originally written in Japanese.

The English section provides a concise summary for discussion.

The full Japanese text is included below for transparency and precise reference.

This chapter reorganizes the manuscript's inter-page relationships at a higher level:  
(1) paired design in early Herbal folios, (2) a linear operational flow across sections, and (3)  
a cross-sectional layer that functions like an index or metadata system.

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## English Text

This chapter summarizes the manuscript's inter-page relationships at a higher structural level.

The key claim is not about decoding words, but about how pages and sections relate by **roles**.

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### 1) f1r ↔ f1v as deliberate paired design

The early Herbal folios f1r and f1v function as a paired baseline.

They appear to present a two-sided framework—commonly interpreted here as **internal use vs. external use**—establishing a template that later Herbal pages repeat in simplified form.

The important point is the design logic: *one unit (one plant / one subject) presented with two functional orientations*.

This is treated as a structural feature rather than a lexical claim.

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### 2) Herbal → Balneological → Recipes as a one-way operational flow

Across sections, the analysis proposes a single directed workflow:

- **Herbal**: definition of effects/uses (what is being established)
- **Balneological**: application to the body (how it is performed)
- **Recipes**: execution/log-like entries (what is done, minimally stated)

In this view, the Recipes section is not an independent thematic chapter but an **execution layer**: concise, presuppositional, and optimized for use rather than explanation.

(An analogy used in the Japanese text is that this resembles a sequence of commands or log entries rather than narrative exposition.)

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### **3) Cosmological / Astronomical as a cross-sectional “index-like” layer**

This study treats the Cosmological/Astronomical material as a cross-sectional layer that does not map cleanly to a single plant page.

Instead, it is described as functioning like a *shared indexing system* across the manuscript—particularly as a way to represent **when** something is applied or executed, rather than **what** it is.

In that sense, it behaves like a “time-axis metadata layer” applied across multiple parts of the workflow.

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### **4) Flowchart as a functional map**

To communicate this structure, the research uses a flowchart that organizes sections not by semantic meaning but by functional role:

**Definition → Application → Execution → Administration/Appendix**

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Representative folios are positioned along this flow to show that the manuscript can be read as an operational system even without claiming a decipherment.

# Part 5: Female Figure Pages as Process Diagrams, Not Anatomical Illustrations

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## English Summary

This post is Part 5 of a multi-part summary of a longer research work originally written in Japanese.

The English section provides a concise summary for discussion.

The full Japanese text is included below for transparency and precise reference.

This chapter re-evaluates the so-called “female figure pages,” arguing that they function as process or state diagrams rather than anatomical illustrations.

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## English Text

The pages depicting female figures have often been approached as anatomical or symbolic representations.

This study proposes a different structural interpretation: these pages function primarily as **process diagrams** rather than as depictions of anatomy.

The figures are not arranged to explain bodily structure in a medical-anatomical sense. Instead, they visualize *conditions*, *flows*, and *states* relevant to treatment processes described elsewhere in the manuscript.

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### 1) Why these pages are not anatomical diagrams

Several observable features distinguish these pages from medieval anatomical illustrations:

- Organs are not depicted with consistent anatomical accuracy.
- Proportions vary, and internal structures are often schematic or abstract.
- Emphasis is placed on circulation, containment, and movement (e.g., water, channels, vessels) rather than on organs themselves.

These features suggest that anatomical fidelity was not the primary goal.

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### 2) Visualization of states and transitions

Across these pages, recurring visual motifs appear:

- Female figures immersed in or interacting with water

- Tubes, channels, or container-like forms
- Repeated segmentation of bodies or environments

These elements align more naturally with the visualization of **states** (e.g., accumulation, stagnation, release) and **transitions** (e.g., warming, cooling, circulation) than with static anatomy.

In this interpretation, the figures represent *what condition the body is in* rather than *what the body is made of*.

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### 3) A mediating layer between definition and execution

Within the manuscript's broader structure, the female figure pages occupy a mediating position:

- Herbal pages define effects and properties.
- Recipes record execution steps in compressed form.
- The female figure pages visually bridge these layers by showing *how processes manifest in the body*.

They function as a conceptual interface—comparable to a user-facing visualization—between abstract definition and concrete execution.

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### 4) Consistency with a functional-document framework

When treated as process diagrams, these pages integrate coherently with the manuscript's overall workflow:

**Definition → Application → Execution**

Rather than standing apart as symbolic or enigmatic imagery, the female figure pages reinforce the idea that the manuscript was designed to be *used*, not merely read.

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# Part 6: The Voynich Manuscript as an Operational Document

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## English Summary

This is Part 6, the final post in a six-part summary of a longer research work originally written in Japanese.

The English section provides a concise synthesis for discussion.

The complete Japanese text is included below in full for transparency and precise reference.

This final chapter integrates the structural findings presented so far and argues that the Voynich Manuscript is best understood as an **operational document**—not a symbolic codex or literary cipher, but a manual designed to be used.

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## English Text

When examined as a whole, the Voynich Manuscript displays a consistent functional architecture rather than a narrative or symbolic one.

Across its sections, pages do not primarily relate by semantic meaning or linguistic continuity.

Instead, they are linked by **roles within an operational workflow**.

This workflow can be summarized as:

**Definition → Application → Execution → Management**

- **Herbal pages** define properties and effects.
- **Balneological (female figure) pages** visualize bodily states during application.
- **Recipe pages** compress actions into executable logs.
- **The final folio (f116)** functions as a later-added management or ownership layer, not as part of the core content.

Importantly, meaning is not carried by individual words alone.

It emerges from **position, repetition, reduction, and omission**—all typical traits of documents designed for repeated practical use.

Under this model, the manuscript does not attempt to teach names, anatomy, or theory. It assumes prior knowledge and instead records *how to operate* within an established system.

Thus, the Voynich Manuscript is most coherently read as an **operational manual**, likely within a women's medical context, whose pages are bound together by function rather than by narrative.

# Appendix B: Functional Herbal Code Correspondence (Reconstruction Hypothesis)

*Pages × Plants × Usage × Differentiation*

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## English Introduction

This appendix presents a **reconstruction hypothesis** for a functional herbal correspondence system in the Voynich Manuscript.

The mapping preserves the current folio numbering established by the Yale Beinecke Library and reorganizes the material **not as a linguistic text**, but as an **operational log system**.

Missing folios are shown **only as inferred positions** based on structural continuity.  
No claim is made regarding the physical existence of those pages.

Plant names are **not definitive identifications**.

They are provisional hypotheses selected for **chronological, regional, and functional consistency**, intended solely to test structural coherence.

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## Assumed Code Structure (Important)

Each page is assumed to implicitly encode the following parameters:

- **P**: Primary plant (core herb)
- **S**: Plant part (root / leaf / flower / fruit)
- **U**: Usage (internal / external / bathing / warning)
- **C**: Condition (normal / prenatal / postnatal / recovery)
- **R**: Risk level (normal / caution / warning)

The written strings are interpreted here as **compressed functional tags**, rather than lexical expressions.

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## Group 1: Core Pages

Page group	Reconstructed plant	Emphasized part	Main usage	Condition	Notes
f1–f3	Mugwort	Leaves	Menstrual regulation / warming bath	Normal	High frequency, structural base
f4	Mugwort (secondary)	Root	Postnatal recovery	Postnatal	Differentiation page
f7	Fennel	Leaves / seeds	Digestion / lactation	Normal	Women / infants
f9	Fennel (secondary)	Seeds	Internal use	Recovery	Dosage-sensitive
f13	Mallow	Leaves	Inflammation relief	Normal	Mainly external
f15	Mallow (secondary)	Leaves	Bathing	Recovery	Linked to bath imagery

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## Group 2: Circulation & Recovery

Page group	Reconstructed plant	Emphasized part	Main usage	Condition	Notes
f18	Lovage	Root	Circulation support	Normal	Humoral balance
f21	Rosemary	Stem / leaves	Warming bath	Recovery	Activating

f24	Yarrow	Leaves	Hemostasis	Postnatal	Midwifery context
f27	Comfrey	Root	Injury recovery	Postnatal	Bone / muscle

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### Group 3: Sedation & Mental State

Page group	Reconstructed plant	Emphasized part	Main usage	Condition	Notes
f30	Lemon balm	Leaves	Mental calming	Postnatal	Anxiety reduction
f33	Valerian	Root	Sleep support	Recovery	Night use
f36	Mint group	Leaves	Sedation	Normal	Bath / internal

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### Group 4: Caution & Warning Pages

Page group	Reconstructed plant	Emphasized part	Main usage	Condition	Risk
f40	Tansy	Flower	Menstrual stimulation	Normal	Caution
f42	Rue	Leaves	Protective use	Normal	Caution

f45	Henbane	Whole	Analgesic	Special	▲
f47	Digitalis	Flower	Cardiac effect	Special	▲▲

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## Group 5: Symbolic / Isolated Pages

Page group	Reconstructed plant	Function	Notes
f50	Saffron	Transition / blood	Symbolic color
f52	Juniper	Purification	Fumigation
f55	Hyssop	Cleansing	Ritual use
f58	Thyme	Antimicrobial	Daily use

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## Key Observations from This Table

- A single plant appears across **multiple differentiated pages**
  - Pages correspond to **usage × condition**, not to plant identity alone
  - High-risk plants **lack procedural detail**
  - The distribution closely matches **female medical life cycles**
  - Illustrations, text, and layout divide functional responsibility
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## **Important Note**

This table is **not intended for “reading” or deciphering the manuscript.**

It is a **reconstruction model** aimed at understanding  
**how the manuscript may have been operated**, not what it “says.”

Plant names are hypothetical.

What matters is **systemic consistency**, not identification.

\* *Physically missing folio*

### ***Thread note (English)***

*This appendix is optional and supplementary.  
It is intended to clarify how the manuscript operates,  
not to close discussion on plant identification.*