

The Bashplemi Tablet as a Structured Proto-Administrative Text

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Abstract

The Bashplemi stone tablet from the Dmanisi region of Georgia bears an inscription of approximately sixty carved glyphs that do not correspond to any fully known writing system. Previous discussion has focused primarily on iconographic resemblance and possible external analogs. In this study, the tablet is examined instead as a formal system, using a structural epigraphy approach that treats all glyphs as unknown tokens and analyzes only their internal distribution, positional constraints, and co-occurrence patterns.

The analysis demonstrates that the inscription is not an undifferentiated symbol cluster but a multi-register document governed by a closed operator set, explicit segmentation, category determinatives, divider-bounded measure phrases, and a structured closure consisting of a compact dedication clause followed by an emblematic seal. These features establish the presence of grammatical infrastructure and document-level organization independent of any proposed decipherment.

A functional architecture is extracted in which a domain inventory, two quantified act clauses, and a binding declaration are framed by an authority context and ratified through symbolic closure. On this basis, the tablet is interpreted as a proto-administrative or cult-administrative record rather than a decorative or purely iconographic object.

The study further formulates a predictive model specifying grammar invariants, variation zones, and falsifiable expectations for future discoveries. The Bashplemi tablet is thus situated within the broader phenomenon of early document traditions, expanding the known landscape of structured inscriptional practices in the Caucasus region during the Late Bronze or Early Iron Age.

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1 Introduction

1.1 Discovery context

The Bashplemi stone tablet was discovered near Lake Bashplemi in the Dmanisi region of southern Georgia. The artifact bears a multi-line inscription composed of approximately sixty carved glyphs representing roughly thirty-nine distinct sign classes. Archaeological context associates the find with the Late Bronze to Early Iron Age, though precise dating remains subject to ongoing study.

The inscription is arranged in seven horizontal registers on an irregular stone surface. The glyphs are deeply incised, display consistent execution, and are organized into visually discrete lines rather than continuous ornamentation. Despite comparative references to several ancient scripts, no established writing system has yet been shown to account for the forms or their combinations.

1.2 Problem statement

To date, discussion of the Bashplemi tablet has emphasized iconographic similarity, possible external influences, and speculative decipherment attempts. While such approaches are valuable, they risk projecting external structures onto the inscription before its internal properties are fully characterized.

What has been lacking is a systematic analysis of the tablet as a self-contained formal system. Without first determining whether the inscription encodes grammatical constraints, document segmentation, or functional regularities, attempts at linguistic attribution or semantic interpretation remain premature.

1.3 Aim of this study

The present study approaches the Bashplemi tablet through structural epigraphy. All glyphs are treated as unknown tokens. No phonetic, linguistic, or semantic values are assumed. The analysis is restricted to internal evidence: distribution, repetition, positional ecology, and co-occurrence patterns.

The objectives are:

- to determine whether the inscription exhibits grammatical infrastructure,
- to extract any document-level architecture present,
- to characterize the roles of recurrent sign classes,
- to identify category, quantity, and closure systems if they exist,
- and to formulate a predictive model testable against future discoveries.

Rather than attempting decipherment, this study seeks to establish what kind of text the Bashplemi tablet is. By isolating its operator system, register functions, measure grammar, and authority architecture, the paper aims to situate the inscription within a defensible functional and cultural framework.

Only after such structural foundations are established can subsequent linguistic, comparative, or historical investigations proceed on firm ground.

2 Methodology

This study applies a structural epigraphy approach to the Bashplemi tablet. All glyphs are treated as unknown tokens without assumed phonetic, linguistic, or semantic values. Analysis is based solely on internal properties of the inscription, including distribution, repetition, positional constraints, and co-occurrence patterns. The objective is to determine whether the tablet encodes a structured text and, if so, to extract its internal grammar and document architecture without reference to external scripts or proposed decipherments.

2.1 Structural epigraphy approach

Structural epigraphy examines inscriptions as formal systems prior to linguistic interpretation. The method focuses on identifying closed classes, open classes, boundary operators, register segmentation, and slot regularities. Rather than asking what a sign means, the analysis asks where a sign appears, what it neighbors, what it excludes, and whether it participates in patterned constructions.

In this framework, glyphs are provisionally classified into functional types based on ecological behavior:

- closed-class signs (punctuation, dividers, determinatives, relational or action operators),
- open-class signs (content-bearing signs appearing in combinatorial runs),
- emblematic signs (restricted to seal or non-grammatical zones).

No phonetic or iconographic equivalences are introduced. All inferences are derived from internal regularities.

2.2 Data preparation

The inscription was first segmented into horizontal registers following the published line structure of the tablet. Each glyph position was indexed sequentially. A sign inventory was constructed by grouping visually identical glyphs into equivalence classes. Frequency counts were tabulated to distinguish singletons, double-occurrence classes, and higher-frequency forms.

All subsequent analysis refers to these indexed positions and equivalence classes rather than to descriptive or symbolic labels. This normalization step allows adjacency patterns, slot behavior, and positional constraints to be evaluated independently of iconographic interpretation.

2.3 Analytical sequence

The analysis proceeded through a fixed sequence designed to minimize interpretive leakage:

1. Register skeletonization: replacement of all glyphs by abstract tokens and provisional operator markers to reveal boundary structure.
2. Operator isolation: identification of signs with closed-class behavior based on positional restriction and non-participation in combinatorial runs.
3. Slot extraction: mapping of recurrent positional frames within registers, including header zones, list zones, and compact grammatical clauses.
4. Measure phrase isolation: identification of divider-bounded fields with sterile internal composition and limited length.
5. Category to quantity coupling: testing whether determinative-marked blocks systematically precede measure phrases.
6. Authority and seal modeling: independent analysis of the closure registers to extract dedication grammar and emblematic architecture.
7. Predictive modeling: formulation of grammar invariants and variation zones to generate falsifiable expectations for future finds.

Each step was required to remain consistent with all previous steps. No interpretive move was retained unless it preserved coherence across operator behavior, register symmetry, and closure structure.

This procedure yields a document-level grammar and functional architecture for the Bashplemi tablet prior to any attempt at linguistic decipherment.

3 Operator system

A central objective of the structural analysis was to determine whether the Bashplemi inscription contains a closed class of signs functioning as operators rather than as content-bearing glyphs. Closed-class signs are expected to exhibit restricted placement, limited combinatorial behavior, and exclusion from long runs of heterogeneous symbols.

The tablet displays a small set of glyphs whose distributional behavior differs sharply from the majority of signs. These glyphs occur in constrained environments, recur at structural boundaries, and do not participate in extended sequences. On this basis, they are provisionally classified as operators.

3.1 Identification of operator glyphs

Operator candidates were identified using the following criteria:

- appearance at consistent positional boundaries,
- limited frequency relative to total sign count,
- exclusion from long uninterrupted runs,
- adjacency to shifts in register structure,
- recurrence in parallel grammatical environments.

Using these criteria, five functional operator types were isolated:

1. punctuation signs, occurring as isolated single glyphs terminating or separating blocks,
2. divider signs, consistently preceding compact internal fields,
3. category determinatives, occurring once per major content block,
4. action operators, appearing at pivots between item zones and relational clauses,
5. relation operators, linking compact clauses to unique entity tokens.

These signs form a closed operational set distinct from the larger inventory of content glyphs.

3.2 Closed-class behavior

The identified operators exhibit the following shared properties:

- They do not appear in long combinatorial runs.
- They recur in parallel positions across multiple registers.
- They do not appear inside measure fields.
- They do not appear inside the seal cluster.
- They maintain consistent adjacency patterns.

For example, punctuation signs appear only as isolated boundary markers. Divider signs consistently introduce compact sterile fields. Category determinatives appear exactly once in each mid-register content block. Action operators recur at the transition from item clusters to relational clauses. Relation operators appear only in header and closure environments.

No operator-class sign is observed to migrate into open-class list zones or emblematic seal zones.

3.3 Implications for grammatical infrastructure

The existence of a closed-class operator set demonstrates that the Bashplemi tablet is not a random assemblage of symbols. Instead, it encodes formal constraints on sign placement and adjacency. Such behavior is characteristic of grammatical infrastructure rather than of pictorial or decorative systems.

In particular, the consistent deployment of punctuation, dividers, category determinatives, and relational operators establishes:

- explicit segmentation of the inscription into functional blocks,
- differentiation between content-bearing and structural signs,
- ordered transitions between inventory, quantified acts, and closure clauses.

This operator ecology provides the foundation for subsequent analysis of register structure, category systems, measure grammar, and authority architecture.

4 Register structure of the tablet

Following operator isolation, the inscription was analyzed at the register level to determine whether the tablet is organized as a sequence of functional blocks. The Bashplemi tablet is arranged into seven horizontal registers separated by spatial line breaks. These registers are not uniform in internal structure or operator content, indicating that they serve distinct grammatical roles within a single document.

4.1 Segmentation into registers

The tablet was segmented according to the visible horizontal rows of glyphs. Each register was treated as a discrete analytical unit while preserving cross-register adjacency relationships.

The seven registers differ in:

- glyph count,
- operator density,
- internal segmentation,
- presence or absence of compact clauses,
- participation in closure and seal functions.

This non-uniformity indicates intentional functional partitioning rather than aesthetic line filling.

4.2 Functional roles by register

Based on operator placement, internal composition, and adjacency patterns, the registers can be provisionally characterized as follows:

- Register 1 functions as a short header or authority context. It contains no long item runs and terminates in a relational environment.

- Register 2 functions as a domain inventory. It contains a category determinative followed by the longest uninterrupted list of content signs in the inscription, terminated by punctuation.
- Register 3 functions as a quantified act clause. It combines item clusters, a category block, a divider-bounded measure phrase, and a compact relational clause.
- Register 4 functions as a second quantified act clause. It mirrors Register 3 with altered ordering of item, action, and category elements, followed by a divider-bounded measure phrase.
- Register 5 functions as a binding or declarative clause. It begins with punctuation and contains a long open-class sequence without further operators.
- Register 6 functions as a final compact dedication clause. It consists of a short operator-mediated construction linking an action, a relation, and a unique entity token.
- Register 7 functions as a seal block. It contains only emblematic signs and no operators.

These functional distinctions demonstrate that the inscription is organized as a multi-part document rather than as a continuous undifferentiated text.

4.3 Register parallelism and symmetry

Registers 3 and 4 exhibit strong structural parallelism. Both contain:

- item clusters,
- category determinatives,
- divider-introduced compact fields,
- action and relational operators.

Despite differences in ordering, the shared components and their recurrence indicate that these registers encode parallel grammatical constructions. This symmetry supports their interpretation as two instances of the same document function.

Registers 2 and 5 also exhibit a secondary parallelism. Both are dominated by long open-class runs and lack internal dividers or relational operators. Register 2 presents a domain inventory under explicit category marking, while Register 5 selectively restates a subset of content signs within a declarative frame. This pairing is consistent with an inventory to binding relationship.

Register 6 and Register 7 form a closure pair. The former contains a compact grammatical dedication clause, while the latter contains a non-grammatical emblematic cluster. Their sequential placement and complementary roles establish a terminal closure structure.

Together, these register relationships define a coherent document architecture consisting of authority context, inventory, quantified acts, declaration, dedication, and seal.

5 Category and inventory system

The presence of a recurrent determinative sign functioning as a category marker indicates that the Bashplemi tablet encodes an explicit system of classification. This system organizes content glyphs into structured domains and links these domains to later quantified constructions.

5.1 Category determinatives

A specific glyph class was isolated as a category determinative based on the following behavior:

- it appears exactly once in each mid-register content block,
- it never appears inside long open-class runs,
- it never appears inside measure fields,
- it consistently precedes or introduces bounded item clusters.

This determinative occurs in Registers 2, 3, and 4, each time marking the onset of a category-scoped block. Its one-per-register distribution and stable positioning indicate that it does not represent an item, but rather establishes the classificatory domain under which subsequent signs are to be interpreted.

5.2 Domain inventory register

Register 2 contains the longest uninterrupted sequence of open-class glyphs in the inscription. This sequence is introduced by an authority-linked sign and a category determinative, and it terminates with punctuation.

The internal structure of this register exhibits:

- absence of dividers,
- absence of action or relational operators,
- high internal heterogeneity,
- maximal glyph diversity.

These properties are characteristic of inventory domains in early administrative and ritual texts. Rather than encoding transactions, this register defines the recognized classes of content that exist under the authority context established by the header.

5.3 Category to quantity coupling

In Registers 3 and 4, the category determinative is embedded within constructions that subsequently introduce divider-bounded compact fields. In both cases, the sequence conforms to the same general pattern:

- an initial item cluster,
- a category determinative introducing a class designation,
- a bounded block of one or more content signs,
- a divider introducing a compact sterile field.

The divider-bounded fields in these registers were independently shown to function as measure phrases. Their consistent adjacency to category-marked blocks establishes a category to quantity relationship: specific classes defined by the determinative are immediately followed by compact constructions encoding quantities or measures.

This coupling demonstrates that the inscription does not merely list classes of things, but records structured statements of the form: class of content followed by an associated quantified field.

5.4 Inventory and binding relationship

Register 5 contains a long open-class sequence introduced by punctuation and lacking internal operators. Unlike Register 2, this register does not present maximal heterogeneity. Instead, it selectively reintroduces a subset of glyph classes previously encountered in inventory and transactional contexts.

This selective reuse is consistent with a binding or declarative function. Rather than restating the full domain inventory, the binding register isolates specific content classes and incorporates them into a formal statement. Such behavior is typical of administrative and ritual documents in which an initial inventory defines scope, subsequent clauses perform acts upon subsets of that scope, and a later declaration formally binds the results.

Together, the domain inventory, category determinatives, and selective binding sequence define a coherent classificatory system operating across the inscription.

6 Measure grammar

A key result of the structural analysis is the isolation of compact, divider-bounded fields that function as measure phrases. These fields exhibit strong internal constraints and recur in parallel grammatical environments, indicating that the tablet encodes a formal quantity or measurement system.

6.1 Isolation of quantity fields

Two compact fields were identified in Registers 3 and 4, each introduced by a consistent divider sign. These fields are characterized by:

- fixed and short length,
- absence of operators within the field,
- restricted glyph inventory relative to the rest of the tablet,
- recurrence in parallel structural positions.

No divider-bounded field appears in the header, inventory, binding, closure, or seal registers. Their confinement to the two quantified act registers supports their interpretation as dedicated quantity or measure constructions rather than as general-purpose lists.

6.2 Slot structure of measure phrases

Internal comparison of the divider-bounded fields reveals stable positional behavior. Each field can be decomposed into a small number of ordered slots occupied by glyphs that recur across the two registers.

The minimal frame supported by the data is:

/ M1 M2 M3 (M4)

where:

- M1 is a unit or classifier candidate,

- M2 is a numeral or magnitude candidate,
- M3 is a qualifier or specification candidate,
- M4 is an optional extender or secondary qualifier.

The number of slots is strictly limited, and the ordering of the slots is conserved across both occurrences.

6.3 Numeral ecology

One slot, corresponding to M2, displays the highest degree of reuse across measure phrases. The same glyph class occupies this position in both quantified registers, and related forms appear in non-measure environments where enumeration or structuring behavior is independently indicated.

By contrast, the glyphs occupying M1 and M3 vary between registers and do not migrate into structural operator roles. This differential mobility supports the interpretation of M2 as a magnitude-bearing component, while M1 and M3 function as contextual modifiers.

No glyph appearing inside a measure phrase participates in long open-class runs elsewhere in the inscription, indicating that the measure grammar draws from a restricted sub-inventory.

6.4 Predictive measure grammar

The measure grammar extracted from the Bashplemi tablet yields the following testable predictions:

- All future occurrences of divider-bounded fields should conform to the same slot ordering.
- At least one slot should be occupied by a high-reuse magnitude glyph.
- Measure fields should appear only in association with category-marked blocks.
- Operators should remain excluded from internal measure positions.

These predictions establish the quantity system as a formal grammatical component rather than as an incidental grouping of signs.

7 Authority and seal architecture

The final registers of the Bashplemi tablet exhibit a structural shift from inventory and transactional constructions to compact grammatical closure and emblematic representation. This shift defines an explicit authority architecture linking textual declaration with symbolic validation.

7.1 Closure grammar

Register 6 consists of a short, tightly constrained sequence of glyphs exhibiting operator-mediated structure. Unlike the preceding registers, it contains:

- no long open-class runs,
- no category determinatives,
- no dividers or measure fields,

- a compact sequence linking operators and a unique content sign.

The internal arrangement of this register conforms to a stable pattern:

- an action-class operator,
- followed by a relation-class operator,
- followed by a unique entity token.

This ordered configuration occurs only at the terminal grammatical position of the inscription. Its isolation and internal consistency support its interpretation as a formal dedication or recipient clause governing the entire preceding document.

7.2 Seal block analysis

Register 7 departs entirely from the grammatical ecology of the tablet. It contains:

- no operators,
- no dividers,
- no punctuation,
- a short cluster of visually distinctive glyphs.

None of the signs in this register appear in measure fields or open-class list zones. Their confinement to the terminal register and their mutual co-occurrence indicate that this block functions as an emblematic seal rather than as a grammatical clause.

The separation of the seal from the closure grammar demonstrates a dual-channel authority system: textual declaration followed by symbolic validation.

7.3 Authority hierarchy model

Comparison of authority-linked signs across the inscription reveals a structured ecology:

- an authority domain marker appearing in header and seal environments,
- an authority identity marker appearing in both text body and seal,
- a unique recipient token confined to the closure clause,
- a seal-core sign restricted to the emblematic block.

This distribution defines a hierarchy in which institutional authority is established in the header, operationalized in the transactional registers, named in the closure, and ratified in the seal.

The recurrence of specific authority markers across grammatical and emblematic zones indicates that the seal does not merely decorate the tablet, but encodes the same authority system through non-grammatical means.

7.4 Implications for institutional context

The coordinated presence of:

- domain scoping in the header,
- classified inventories,
- quantified transactional clauses,
- a binding register,
- a formal dedication,
- and a distinct seal,

demonstrates that the Bashplemi tablet operates within an institutional framework. The inscription does not simply list objects or depict symbols, but records formal acts performed under a recognized authority and ratified through emblematic closure.

This architecture is characteristic of early administrative and ritual documents in which written declarations and seals jointly establish legitimacy.

8 Cultural interpretation

The structural properties of the Bashplemi tablet constrain the type of cultural environment in which it could have been produced. Without assuming linguistic values or specific religious identities, the document architecture permits a limited set of plausible institutional contexts.

8.1 Sanctuary economy profile

The coordinated presence of domain inventories, classified content blocks, quantified act clauses, a binding register, a formal dedication, and a distinct seal indicates that the tablet does not record an ad hoc event. Instead, it reflects an organized system of material management under ritual or institutional authority.

Such systems are characterized by:

- recognized classes of goods,
- standardized or repeatable acts,
- formal accounting of quantities,
- authority-scoped domains,
- explicit closure and validation mechanisms.

These features are typical of sanctuary-centered or cult-administrative economies, in which offerings, resources, or ritual goods are regulated by institutional structures. In such environments, inscriptions serve not as narratives but as transactional and declarative records embedded in sacred or civic frameworks.

The Bashplemi tablet exhibits the internal logic of such a system. The initial inventory establishes the domain of recognized classes. The quantified registers encode formal acts applied to selected

categories. The binding register consolidates these acts into a durable declaration. The closure clause assigns the entire document to a specific authority. The seal ratifies the declaration through emblematic means.

This profile distinguishes the inscription from decorative objects, mnemonic charms, or purely iconographic stones. Its internal constraints require an environment in which material flows, obligations, and legitimacy are institutionally mediated.

8.2 Comparison to dedicatory and proto-administrative traditions

Comparable structural patterns are observed in early dedicatory and proto-administrative traditions across the broader Near Eastern and Anatolian spheres. These traditions commonly exhibit:

- inventories or class lists defining recognized domains,
- quantified statements of transfer or offering,
- formal declarative or binding clauses,
- explicit dedication to an authority or institutional entity,
- and separation between textual declaration and emblematic validation.

While no claim is made regarding linguistic affiliation or direct derivation, the Bashplemi tablet aligns closely with these document genres at the level of functional architecture. Its grammar is that of record-keeping rather than storytelling, and of institutional procedure rather than personal expression.

The presence of such a document in the Bashplemi context therefore implies the existence of a localized tradition of formal inscription, adapted to regional cultural frameworks but fulfilling roles recognizable from early administrative and sanctuary economies elsewhere.

This interpretation remains structural rather than historical. It identifies the type of social system required by the document, not the specific historical actors involved.

9 Predictive model

A central objective of this study is not only to describe the internal structure of the Bashplemi tablet, but to formulate a predictive framework that can be tested against future discoveries. The extracted grammar permits the definition of invariant features that should persist across documents of the same tradition, as well as variation zones that should change between documents.

9.1 Grammar invariants

If the Bashplemi tablet belongs to a coherent inscriptional system, future texts from the same tradition should preserve the following structural invariants:

- multi-register organization with differentiated functional roles,
- a closed-class operator system distinct from open-class content signs,
- presence of a domain inventory register,
- presence of one or more quantified act registers,

- use of a category determinative to scope content blocks,
- divider-introduced measure phrases with fixed internal ordering,
- a compact final dedication clause,
- and a terminal emblematic seal block separated from grammatical text.

These invariants define the document architecture and grammatical infrastructure of the system. Their absence in a candidate inscription would indicate either a different genre or a different inscriptional tradition.

9.2 Variation zones

Within this invariant framework, specific components are expected to vary across documents:

- the composition and length of domain inventories,
- the identities of item glyphs appearing in transactional registers,
- the internal composition of measure phrases,
- the specific magnitude-bearing signs,
- the recipient token in closure clauses,
- the authority identity marker,
- and the configuration of seal-emblem signs.

These variation zones correspond to document-specific content. Their systematic replacement across tablets would support the existence of a generative writing system rather than a single idiosyncratic inscription.

9.3 Falsifiable predictions for future discoveries

The predictive model yields the following testable expectations:

- Newly discovered tablets of the same tradition should exhibit a small, stable operator set with comparable positional ecology.
- Divider-bounded measure phrases should recur and conform to the same slot ordering.
- Category determinatives should consistently precede blocks that are later quantified.
- A compact closure clause should precede a non-grammatical seal block.
- At least one authority-linked sign should appear in both grammatical and emblematic environments.

Failure of these expectations across multiple future finds would require revision or abandonment of the proposed structural model. Conversely, their confirmation would provide strong evidence for a localized proto-administrative inscriptional system in the Bashplemi region.

10 Structural translation

This section presents a non-lexical, role-based rendering of the Bashplemi tablet. No phonetic, linguistic, or semantic values are assigned. Glyphs are replaced by functional roles derived from operator ecology, register structure, and slot behavior. The purpose of this translation is to express what the document does, not what any sign means.

The tablet resolves into the following ordered functional sequence.

10.1 Register 1: Authority context

The opening register establishes the authority framework of the document. It contains no extended item lists and terminates in a relational environment. Structurally, it functions as a header defining the scope within which all subsequent registers operate.

AUTHORITY CONTEXT / RELATIONAL FRAME

This register constrains the institutional domain of the inscription.

10.2 Register 2: Domain inventory

The second register introduces an authority-linked marker followed by a category determinative and the longest uninterrupted open-class sequence on the tablet. It terminates in punctuation.

AUTHORITY DOMAIN + CATEGORY: ITEM A, ITEM B, ITEM C, ITEM D, ITEM E, ITEM F, ITEM G, ITEM H, ITEM I, ITEM J, ITEM K.

Functionally, this register defines the recognized classes of content operating under the authority context.

10.3 Register 3: Quantified act I

The third register combines an item cluster, a category-scoped block, a divider-bounded measure phrase, and a compact grammatical clause.

ITEM L, ITEM M, ITEM N, ITEM O CATEGORY B, ITEM P, ITEM Q / UNIT
NUMBER QUALIFIER (EXTENDER) ACTION RELATION RECIPIENT

This register encodes a formal act applied to a classified group with an associated quantified field.

10.4 Register 4: Quantified act II

The fourth register mirrors the third while reordering internal components. It again integrates item clusters, a category determinative, and a divider-bounded measure phrase.

ITEM R, ITEM S, ITEM T ACTION RELATION CATEGORY C, ITEM U, ITEM V
/ UNIT NUMBER QUALIFIER

This register encodes a second formal act governed by the same grammatical infrastructure.

10.5 Register 5: Binding declaration

The fifth register begins with punctuation and contains a long open-class sequence without internal operators.

. ITEM W, ITEM X, ITEM Y, ITEM Z, ITEM AA, ITEM AB, ITEM AC, ITEM AD

This register functions as a declarative or binding clause, selectively restating content classes in a consolidated formal statement.

10.6 Register 6: Final dedication clause

The sixth register is a compact grammatical construction composed exclusively of operators and a unique entity token.

ACTION RELATION RECIPIENT

This clause assigns the entire document to a specific authority or recipient entity.

10.7 Register 7: Seal

The final register contains only emblematic signs and no grammatical operators.

AUTHORITY DOMAIN SEAL CORE AUTHORITY IDENTITY

This register functions as a non-grammatical validation block, symbolically ratifying the textual declaration.

10.8 Summary of document function

Taken as a whole, the structural translation yields the following document logic:

Under a defined authority context, a domain of recognized classes is established. From this domain, specific classes are engaged in quantified formal acts. These acts are consolidated into a binding declaration. The document is dedicated to a named authority. The declaration is ratified through an emblematic seal.

This rendering expresses the functional architecture of the Bashplemi tablet independent of any proposed decipherment.

11 Discussion

The structural analysis presented above demonstrates that the Bashplemi tablet encodes a coherent document architecture governed by operator ecology, register differentiation, and formal closure. These properties require explanation. This section considers alternative interpretations, clarifies the limits of the present study, and discusses the implications of the proposed model.

11.1 Evaluation of alternative models

Several non-administrative interpretations can be considered a priori, including decorative, mnemonic, narrative, and purely iconographic explanations.

A decorative model is inconsistent with the closed-class behavior of operators, the constrained placement of dividers, and the systematic segmentation into functional registers. Decorative or ornamental carvings do not exhibit sterile internal fields, parallel clause structures, or exclusion rules between sign classes.

A mnemonic charm or amuletic model would not predict the presence of extended domain inventories, parallel quantified constructions, or a binding register distinct from the transactional registers. Such objects typically emphasize repetition or symmetry rather than ordered multi-part document logic.

A narrative or mythic model would be expected to produce long open-class sequences interspersed with variable operator placement. The Bashplemi tablet instead exhibits consistent clause grammar, measure isolation, and categorical coupling, all of which are characteristic of procedural or administrative records.

A construction or military ledger model could account for inventories and quantities but does not readily explain the final compact dedication clause followed by a distinct emblematic seal. The authority architecture and closure grammar favor a dedicatory or institutional record over a purely utilitarian account.

Among these alternatives, the sanctuary or cult-administrative model best accounts simultaneously for the presence of inventories, quantified acts, binding declaration, dedication clause, and symbolic seal.

11.2 Limits of the present analysis

This study does not propose a decipherment. No phonetic values, lexical identifications, or linguistic affiliations are asserted. The functional labels employed throughout are analytical conveniences derived from positional ecology, not claims of semantic content.

The number of measure phrase instances is limited to two, and the authority hierarchy is inferred from distributional constraints rather than from external corroboration. These limitations require that all interpretations remain provisional pending additional material.

The analysis also depends on the published segmentation of registers and the accuracy of the available drawings and photographs. Revision may be required if new imagery reveals additional glyphs or altered register boundaries.

11.3 Implications

Despite these limitations, the extracted grammar has significant implications. The Bashplemi tablet demonstrates that the Caucasus region hosted at least one local tradition of formal inscription employing classification, quantification, and institutional validation.

The tablet therefore represents not an isolated curiosity but evidence of a structured inscriptional practice. Whether this practice was brief or long-lived, localized or regionally networked, remains unknown. What can be established is that the tablet records formal acts under authority using a constrained symbolic system.

This places the Bashplemi inscription within the broader phenomenon of early document traditions, in which writing emerges not primarily as narrative but as a technology of administration, ritual, and institutional memory.

12 Conclusion

This study has examined the Bashplemi tablet as a formal system of signs rather than as an undeciphered pictorial artifact. Through structural epigraphic analysis, a coherent internal grammar has been extracted, consisting of a closed operator set, differentiated registers, category determinatives, divider-bounded measure phrases, a binding register, a compact dedication clause, and a terminal emblematic seal.

These features demonstrate that the inscription is organized as a multi-part document. Its architecture supports classification, quantification, declarative consolidation, and institutional validation. Such behavior is incompatible with decorative, mnemonic, or purely iconographic explanations and is most consistent with a proto-administrative or cult-administrative function.

A predictive model has been formulated specifying grammar invariants, variation zones, and falsifiable expectations for future discoveries. This model permits the Bashplemi tablet to be situated within the broader phenomenon of early document traditions, in which writing systems arise to regulate material flows, ritual obligations, and authority relations.

No linguistic decipherment has been attempted, and none is required to establish the document nature of the inscription. The present work provides a formal foundation upon which subsequent research may build, including comparative epigraphic studies, archaeological contextualization, and eventual linguistic investigation if additional material becomes available.

The Bashplemi tablet thus constitutes evidence for a localized tradition of structured inscription in the Caucasus region during the Late Bronze or Early Iron Age. Its existence expands the known landscape of early writing-related practices and invites renewed archaeological and epigraphic attention to the region.

A Register skeletons

This appendix presents abstract skeletons of each register. All glyphs are replaced by functional placeholders to display document architecture independently of sign identities.

A.1 Register 1: Header

X X X / X .

Short setup register establishing authority context and relational framing.

A.2 Register 2: Domain inventory

AUTH-DOM # X X X X X X X X X X X .

Single category-scoped inventory terminated by punctuation.

A.3 Register 3: Quantified act I

X X X X # X X / M1 M2 M3 (M4) ACT REL X

Item cluster, category block, measure phrase, and compact relational clause.

A.4 Register 4: Quantified act II

X X X ACT REL # X X / M1 M2 M3

Parallel quantified construction with reordered elements.

A.5 Register 5: Binding clause

. X X X X X X X X

Declarative consolidation of selected content classes.

A.6 Register 6: Final dedication

ACT REL X

Compact closure clause linking action, relation, and recipient.

A.7 Register 7: Seal

AUTH-DOM SEAL-CORE AUTH-ID

Non-grammatical emblematic authority block.

B Operator table

This appendix summarizes the operator classes isolated by positional ecology and distributional constraints.

Operator class	Behavioral definition	Distribution	Function
Punctuation	Isolated singletons terminating or opening blocks	R1, R2, R5	Boundary marking
Divider	Introduces compact sterile fields	R3, R4	Measure phrase introducer
Category determinative	Occurs once per content block	R2, R3, R4	Class scoping
Action operator	Precedes relational clauses	R3, R4, R6	Formal act marker
Relation operator	Links acts to entities	R1, R3, R4, R6	Dedication or relational pivot

Closed-class operators do not appear inside open-class runs, measure fields, or seal blocks.

C Measure grammar card

All measure phrases on the tablet are introduced by a divider and confined to quantified registers.

C.1 Formal slot frame

/ M1 M2 M3 (M4)

C.2 Slot constraints

- M1: limited reuse, likely unit or classifier.
- M2: highest reuse, magnitude or numeral candidate.
- M3: restricted variation, qualifier or specification.
- M4: optional, extender or secondary qualifier.

C.3 Structural rules

- No operators appear inside measure phrases.
- Measure phrases only occur after category-marked blocks.
- Slot order is invariant across occurrences.
- Measure glyphs do not participate in long open-class runs.

D Authority ecology card

Authority-linked signs form a coherent distributional system spanning grammatical and emblematic environments.

D.1 Authority components

- AUTH-DOM: scopes domain inventory and appears in seal.
- AUTH-ID: appears in transactional context and seal.
- RECIPIENT: unique entity token in final dedication.
- SEAL-CORE: emblematic sign confined to seal block.

D.2 Ecological structure

Header: AUTH-DOM
Transactions: AUTH-ID
Closure: RECIPIENT
Seal: AUTH-DOM + SEAL-CORE + AUTH-ID

This establishes a dual-channel authority system: grammatical naming and emblematic validation.

E Predictive reconstruction template

If the Bashplemi tablet belongs to a coherent inscriptional tradition, additional examples should conform to the following high-level schema.

E.1 Document architecture

[HEADER]
[DOMAIN INVENTORY]
[QUANTIFIED ACT]
[QUANTIFIED ACT] (optional repetition)
[BINDING DECLARATION]
[FINAL DEDICATION]
[SEAL]

E.2 Invariant features

- closed operator set
- category determinatives
- divider-bounded measure phrases
- compact dedication clause
- emblematic seal block

E.3 Variation zones

- inventory composition
- category membership
- measure values
- recipient identity
- seal configuration

This template provides a falsifiable framework for identifying related inscriptions and testing the proposed structural model.

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