



HAL
open science

Mathematics of the information of letters

Ion Valentin Ciocioc

► **To cite this version:**

Ion Valentin Ciocioc. Mathematics of the information of letters. Vasile Enache. Metamorphosis, 1 (1), Etnous, pp.104, 2024, Metamorphosis, 9786303131368. 10.5281/zenodo.13763262 . hal-04755065

HAL Id: hal-04755065

<https://hal.science/hal-04755065v1>

Submitted on 26 Oct 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial 4.0 International License

Mathematics of the information of letters / Matematica informațiilor literelor / Μαθηματικά των πληροφοριών των γραμμάτων
 Algorithmic operations (chromatic-grammatical-mathematical)
 Operațiile algoritmice (cromatico-gramatic-matematice)
 Οι αλγοριθμικές λειτουργίες (χρωματικά-γραμματικές-μαθηματικές)

<p>eng</p>	<p>The mathematics of information emphasizes the application of the metamorphosis formula, also known as the color algorithm, where the relevance of chromatology is highlighted, as well as the fact that each piece of information is associated with a mathematical formula. Through the use of algorithmic mathematics, an organized structure is outlined for carrying out mathematical-grammatical operations. The discussed example illustrates not only the sequence of necessary operations but also their practical application, both in the basic form of "infinitive" and in the comparison of verb persons, highlighting a distinct algorithmic approach. This generates an integrated vision of the interaction between mathematics and grammar, demonstrating how each grammatical element can be analyzed from a mathematical perspective, thereby facilitating a deeper understanding of the structure and functioning of language.</p> <p>In the first part "a", an algorithmic classification of the verb in the Romanian language is carried out, emphasizing the letters that contain essential information, which allows for a detailed analysis of the transformation of information based on person and number, underscoring the morphological complexity of verbs.</p> <p>In the second part "b", we focus on the application of the Metamorphosis Formula and its associated concepts, using a selected verb from the Romanian language. This approach provides an in-depth understanding of the structural and semantic changes of the verb as a result of applying the formula, offering a perspective on linguistic dynamics. Thus, the theoretical aspects of the study of the verb are highlighted, integrating algorithmic analysis with a practical application of linguistic concepts, emphasizing the complexity and beauty of the relationship between mathematics and language.</p> <p>These algorithmic operations can also be applied in other scientific fields that highlight metamorphosis. Through specific formulations, the method and process of transformation can be tracked.</p>
<p>rum</p>	<p>Matematica informațiilor subliniază aplicarea formulei metamorfozei, cunoscută și sub denumirea de algoritmul culorilor unde se evidențiază relevanța cromatologiei, precum și faptul că fiecare informație este asociată cu o formulă matematică. Prin utilizarea matematicii algoritmice, se conturează o structură ordonată pentru desfășurarea operațiunilor matematico-gramaticale. Exemplul discutat nu doar ilustrează secvența operațiilor necesare, ci și aplicarea lor practică, atât în cazul formei de bază „infinitiv”, cât și în comparația persoanelor verbelor, evidențiind o abordare algoritmică distinctă. Aceasta generează o viziune integrată asupra interacțiunii dintre matematică și gramatică, demonstrând cum fiecare element gramatical poate fi analizat dintr-o perspectivă matematică, facilitând astfel o înțelegere mai profundă a structurii și funcționării limbajului.</p> <p>În prima parte "a", se realizează o clasificare algoritmică a verbului în limba română, punând accent pe literele ce conțin informații esențiale, ceea ce permite o analiză detaliată a transformării informației în funcție de persoană și număr, subliniind complexitatea morfologică a verbelor.</p> <p>În a doua parte "b", ne concentrăm pe aplicarea Formulei Metamorfozei și a conceptelor asociate, utilizând un verb selectat din limba română. Această abordare oferă o înțelegere aprofundată a modificărilor structurale și semantice ale verbului ca urmare a aplicării formulei, oferind o perspectivă asupra dinamicii lingvistice. Astfel, se subliniază aspectele teoretice ale studiului verbului, integrând analiza algoritmică cu o aplicare practică a conceptelor lingvistice, evidențiind complexitatea și frumusețea relației dintre matematică și limbaj.</p> <p>Aceste operații algoritmice pot fi aplicate și în alte domenii științifice care evidențiază metamorfoza. Prin intermediul formulărilor specifice, se poate urmări modul și procesul de transformare.</p>
<p>eln</p>	<p>Η μαθηματική των πληροφοριών τονίζει την εφαρμογή του τύπου της μεταμόρφωσης, γνωστού και ως αλγόριθμος των χρωμάτων, όπου αναδεικνύεται η σημασία της χρωματολογίας, καθώς και το γεγονός ότι κάθε πληροφορία συνδέεται με έναν μαθηματικό τύπο. Μέσω της χρήσης αλγοριθμικών μαθηματικών, διαμορφώνεται μια οργανωμένη δομή για την εκτέλεση των μαθηματικών-γραμματικών λειτουργιών. Το συζητούμενο παράδειγμα όχι μόνο απεικονίζει τη σειρά των απαραίτητων λειτουργιών, αλλά και την πρακτική τους εφαρμογή, τόσο στην βασική μορφή «απαρέμφατο», όσο και στη σύγκριση των προσώπων των ρημάτων, αναδεικνύοντας μια ξεχωριστή αλγοριθμική προσέγγιση. Αυτό δημιουργεί μια ολοκληρωμένη οπτική σχετικά με την αλληλεπίδραση μεταξύ μαθηματικών και γραμματικής, αποδεικνύοντας πώς κάθε γραμματικό στοιχείο μπορεί να αναλυθεί από μια μαθηματική προοπτική, διευκολύνοντας έτσι μια βαθύτερη κατανόηση της δομής και της λειτουργίας της γλώσσας.</p> <p>Στο πρώτο μέρος "a", πραγματοποιείται μια αλγοριθμική ταξινόμηση του ρήματος στη ρουμανική γλώσσα, δίνοντας έμφαση στα γράμματα που περιέχουν ουσιώδεις πληροφορίες, γεγονός που επιτρέπει μια λεπτομερή ανάλυση της μετατροπής των πληροφοριών ανάλογα με το πρόσωπο και τον αριθμό, υπογραμμίζοντας την μορφολογική πολυπλοκότητα των ρημάτων.</p> <p>Στο δεύτερο μέρος "b", εστιάζουμε στην εφαρμογή του Τύπου της Μεταμόρφωσης και των σχετικών εννοιών, χρησιμοποιώντας ένα επιλεγμένο ρήμα από τη ρουμανική γλώσσα. Αυτή η προσέγγιση προσφέρει μια εις βάθος κατανόηση των δομικών και σημασιολογικών αλλαγών του ρήματος ως αποτέλεσμα της εφαρμογής του τύπου, προσφέροντας μια προοπτική για τη γλωσσική δυναμική. Έτσι, υπογραμμίζονται οι θεωρητικές πτυχές της μελέτης του ρήματος, ενσωματώνοντας την αλγοριθμική ανάλυση με μια πρακτική εφαρμογή των γλωσσικών εννοιών, αναδεικνύοντας την πολυπλοκότητα και την ομορφιά της σχέσης μεταξύ μαθηματικών και γλώσσας.</p> <p>Αυτές οι αλγοριθμικές διαδικασίες μπορούν να εφαρμοστούν και σε άλλους επιστημονικούς τομείς που αναδεικνύουν τη μεταμόρφωση. Μέσω συγκεκριμένων τύπων, μπορεί να παρακολουθηθεί ο τρόπος και η διαδικασία μετασχηματισμού.</p>

Index / Δείκτης

"Metamorphosis – The Metamorphosis Formula " . p. /104

∅ =	Different letters, others than those mentioned / Diferite litere, altele decât cele menționate / Διάφορα γράμματα, άλλα από αυτά που αναφέρθηκαν
+	The final form of chromatic expression of grammatical information / Forma finală de exprimare cromatică a informațiilor gramaticale / Η τελική μορφή χρωματικής έκφρασης των γραμματικών πληροφοριών
	The expression of the inner meaning of the information of the grammatical element / Explicarea sensului interior al informațiilor elementului gramatical Η έκφραση της εσωτερικής σημασίας των πληροφοριών του γραμματικού στοιχείου
	Transformation process / Proces de transformare / Διαδικασία μετασχηματισμού
If	Verb in the Romanian language in the infinitive mood / Verbul în limba română la modul infinitiv./ Ρήμα στη ρουμανική γλώσσα σε απαρέμφατο
VPr / VEv	Present tense of action / Timpul prezent de acțiune / Ενεστώτας δράσης
Σε'	Algorithmic sum of grammatical elements / Suma algoritmică a elementelor gramaticale / Αλγοριθμικό άθροισμα γραμματικών στοιχείων
Σε"	The algorithmic sum of grammatical elements / Suma algoritmică a elementelor gramaticale / Η αλγοριθμική suma γραμματικών στοιχείων
Vs	The expression, through comparison, of algorithmic operations (cromatico-gramatico-mathematical / Explicarea ,prin comparație, a operațiilor algoritmice (cromatico-gramatico matematice) Η έκφραση, μέσω της σύγκρισης, των αλγοριθμικών λειτουργιών (χρωματικό-γραμματικό-μαθηματικό)
	The visual-chromatic expression of the connections of the algorithmic operations Explicarea vizuala cromatică a conexiunilor operațiilor algoritmice Η οπτικο-χρωματική έκφραση των συνδέσεων των αλγοριθμικών λειτουργιών

a)

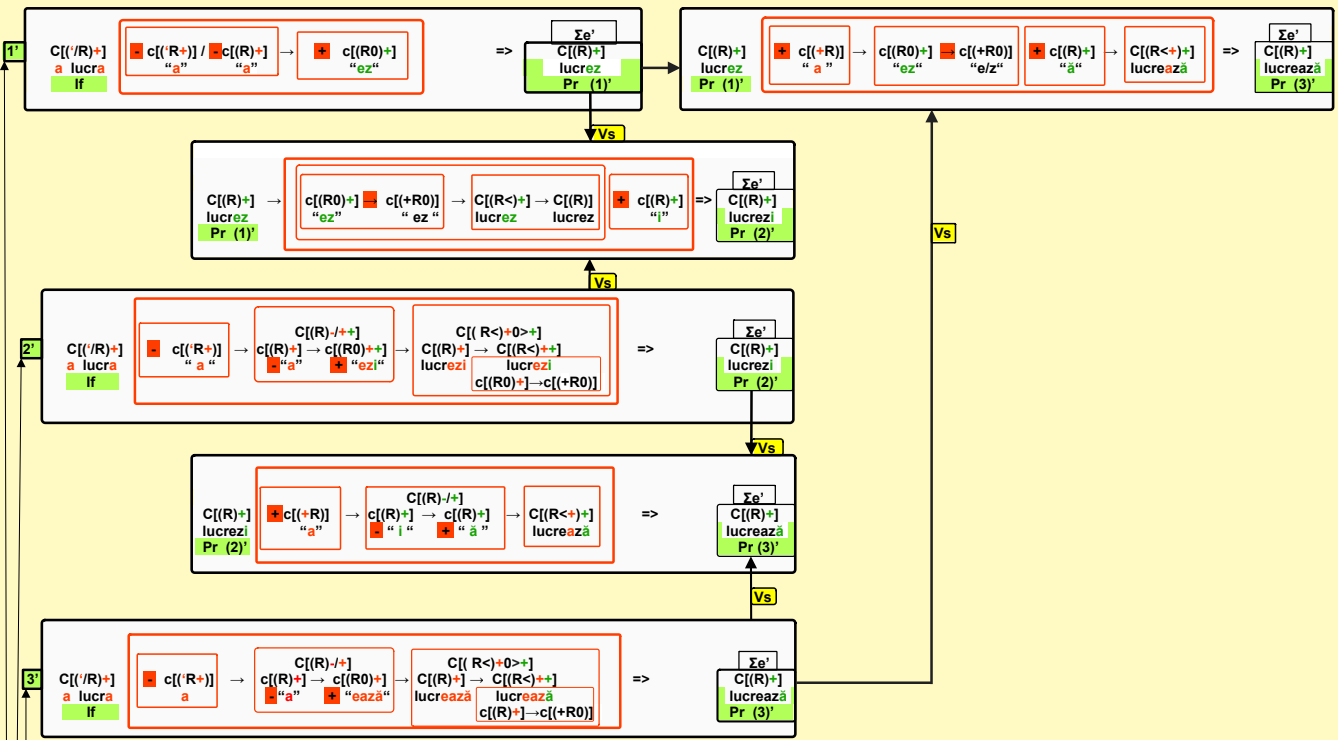
Limba Română rum (Romanian language / Ρουμανική γλώσσα)

- the categories of the lexical meaning of the present grammatical tense This is a semantic-algorithmic restructuring		- categoriile sensului lexical al timpului gramatical prezent Aceasta este o restructurare semantico-algoritmica		- οι κατηγορίες της λεξιλογικής σημασίας του ενεστώτα γραμματικού χρόνου Αυτή είναι μια σημασιολογικο-αλγοριθμική αναδιάρθρωση	
- the infinitive form preposition + verb (infinitive form)	- the group infinitive	- present form VPr (1)'	- the present group depending on the declination	- the present group + the infinitive form	- endings depending on person, number and connecting vowel (active diathesis)
- forma de infinitiv prepoziție + verb (formă infinitiv)	- grupa infinitivului	- formă de prezent VPr (1)'	- grupa prezentului in funcție de declinare	- grupa prezentului + forma infinitivului	- terminatiile în funcție de persoană, număr și vocala de legătură (diateză activă)
- ο αόριστος τύπος πρόθεση + ρήμα (αόριστος τύπος)	- η ομάδα απαρέμφατο	- παρούσα μορφή PEv (1)'	- η παρούσα ομάδα ανάλογα με την απόκλιση	- η παρούσα ομάδα + ο αόριστος τύπος	- κατάληξεις ανάλογα με το πρόσωπο, τον αριθμό και το συνδεδετικό φωνήεν (ενεργητική διάθεση)
c[(R+)]	C[(R+)]	C[(R+)]			
a	lucra	lucrez (I work) (δουλεύω)	x	x	- ez c[(R0)+]
a	invita	invit (invit) (I invite) (καλώ)	y 1	y1	- t / ∅ c[(R0)+]
a	aștepta	aștept (I wait) (περιμένω)	1	y2	- t / ∅ c[(R0)+]
a	umbla	umblu (I walk) (περπατάω)		z1	- u / ∅ c[(R0)+]
a	întârzia	întârzii (I delay) (καθυστερώ)		z2	- i / ∅ c[(R0)+]
a	plăcea	plac (I like) (αρέσει)		x	- c / ∅ c[(R0)+]
a	vrea	vreau (I want) (θέλω)	2	y	- eau c[(R0)+]
a	crește	creșc (I grow) (μεγαλώνω)		x	- esc c[(R0)+]
a	pierde	pierd (I lose) (χάνω)	3	y	- d / ∅ c[(R0)+]
a	pune	pun (I put) (βάζω)		z	- n / ∅ c[(R0)+]
a	iubi	iubesc (R- / +) (I love) (αγαπώ)		x1	- esc c[(R0)+]
a	construi	construiesc (R<+) (I build) (χτίζω)	4	x2	- esc c[(R0)+]
a	veni	vin (I come) (έρχομαι)		y	- n / ∅ c[(R0)+]
a	izvorî	izvorâsc (I spring) (πηγάζω)		x	- âsc c[(R0)+]
a	coborî	cobor (I descend) (κατεβαίνω)	5	y1	- r / ∅ c[(R0)+]
Terminatiile standard a tuturor verbelor: ce conțin persoană și numărul de referință (Standard endings for all verbs containing person and reference number.) (Τελειώσεις προτύπου για όλα τα ρήματα που περιέχουν πρόσωπο και αριθμό αναφοράς.)					
					∅
					- i / -ți
					- a / -ă (-e)
					- m
					- ți
					- ∅

The table does not include verbs that have endings only for certain persons. / Tabelul nu include verbele care au terminații doar la anumite persoane. / Ο πίνακας δεν περιλαμβάνει ρήματα που έχουν κατάληξεις μόνο σε ορισμένα πρόσωπα.

ex / π.χ Lucrez

VPPr / PEv - prezent / present / ενεστώτας categoría / category / κατηγορία 1(Ax)	persoana / person / πρόσωπο + numar / number / αριθμός	limba română (rum)	english language (eng)	ελληνική γλώσσα (ein)
	(1)' singular	- lucrez C[(R)+]	- I work C[(R0)+]	- δουλεύω C[(R)+]
	(2)' singular	- lucrezi → lucrezi C[(R)+]	- You work C[(R0)+]	- δουλεύεις C[(R)+]
	(3)' singular	- lucrează → lucrează C[(R)+]	- he / she / it works C[(R0)+]	- δουλεύει C[(R)+]
	(1)" plural	- lucrăm → lucrăm C[(R)+]	- we work C[(R0)+]	- δουλεύουμε C[(R)+]
	(2)" plural	- lucrați → lucrați C[(R)+]	- you work C[(R0)+]	- δουλεύεți C[(R)+]
(3)" plural	- lucrează → lucrează C[(R)+]	- they work C[(R0)+]	- δουλεύουν C[(R)+]	



$\Sigma e'$
 $C[(/R)+]$
 rum
 (= prepoziție + verb infinitiv) / (= preposition + infinitive verb) / (= πρόθεση + ρήμα απαρέμφατο)
 a lucră
 (να δουλεύω)
 (to work)

