

ENTERING THE THICK FOREST OF INTERCULTURAL TRANSMISSION OF MOTIFS

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University of Geneva, January 2016





Kinder- und Hausmärchen

1812, 1819, 1837, 1840, 1843, 1850, 1857

Deutsches Wörterbuch

1854

37,000 letters

Marburg Staatsarchiv & Humboldt-Universität zu Berlin





7 editions

of the Kinder- und Hausmärchen

from 1812 to 1857

Why the fairy tales of the Brothers Grimm?



Impact on society



Big Data



Global scope needs an international team (8 nationalities, 13 languages spoken)



Interdisciplinary







What are we working on?

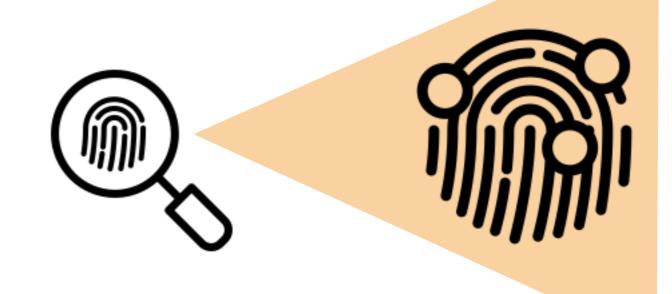
Investigating measurable primitives



Literature: tracing MOTIFS

Linguistics: tracing PATTERNS

Computer Science: tracing MINUTIAE

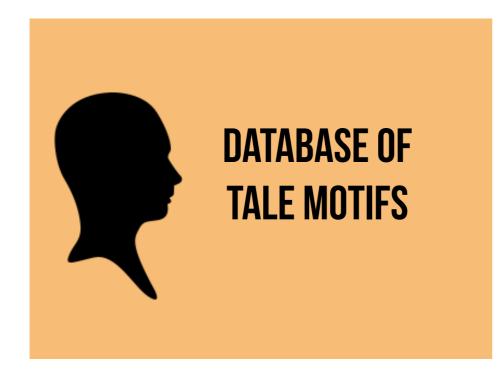






Our Projects















Motif = "...minimal thematic unit[s]"
(Prince's Dictionary of Narratology)

Objective = build a database + interface of the motifs of tales, crossing the language barrier

Why?

Investigate&record primitives and their changes

Nothing like it exists

Humanities: research in folklore

Computer Science: algorithmic improvements

- sharpening the understanding of why and how a text is reused











Which tales?

Snow White
Puss in Boots
The Fisherman and his Wife

Italian German Russian **French** Iranian **English** Rumanian Spanish







Motif =

"...minimal thematic unit[s]" (Prince's Dictionary of Narratology)

Aarne-Thompson (AT) Motif-*Index*

- A. Mythological Motifs
- B. Animal Motifs
- C. Motifs of Tabu
- D. Magic
- E. the Dead
- F. Marvels
- G. Ogres
- H. Tests
- J. the Wise and the Foolish
- K. Deceptions
- · L. Reversals of Fortune
- M. Ordaining the Future
- N. Chance and Fate
- P. Society
- Q. Rewards and Punishments
- R. Captives and Fugitives
- S. Unnatural Cruelty
- T. Sex
- U. the Nature of Life
- V. Religion
- · W. Traits of Character
- X. Humor
- Z. Miscellaneous Groups of Motifs



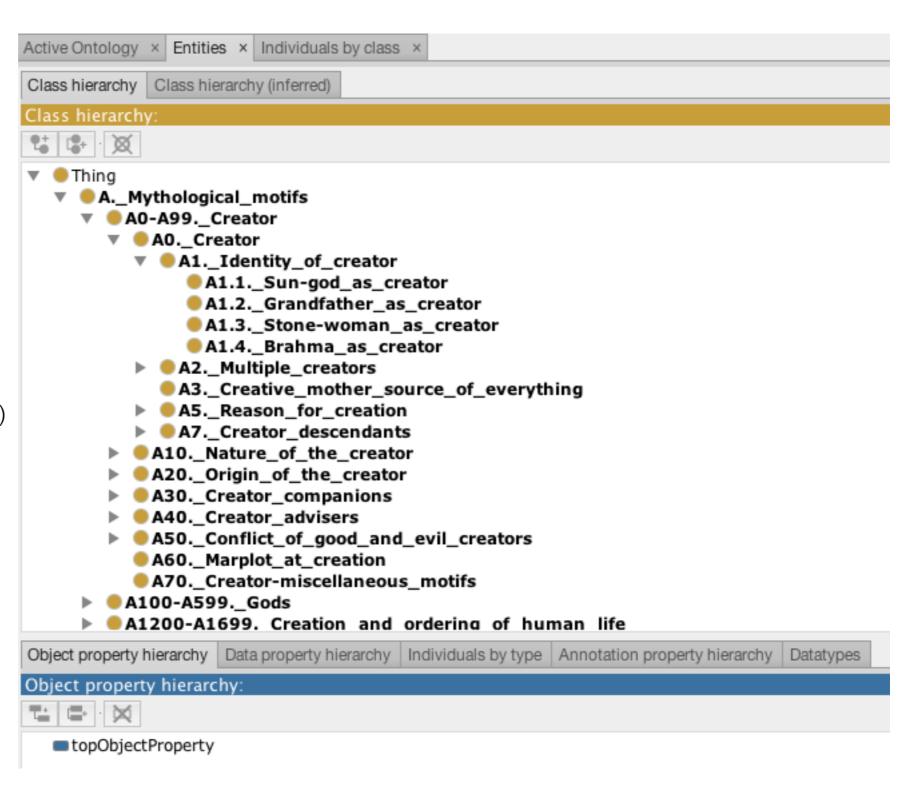






Motif =

"...minimal thematic unit[s]" (Prince's Dictionary of Narratology)









1 2	1	A B C D E	F	G	Н	DEU	J	K	L	M Rl	N JS	O ITA			
	2	Aarne-Thompson	Grimm_1812 VIAF: 187449723	Grimm_1819 VIAF: 187449723	Grimm_1837 VIAF: 187449723	Grimm_1840 VIAF: 187449723	Grimm_1843 VIAF: 187449723	Grimm_1850 VIAF: 187449723	Grimm_1857 VIAF: 187449723	Pushkin_1833 VIAF: 312344013	Cvetaeva_1906-12 VIAF: 185088476	Calvino_1956 VIAF: 181208131			
=	94	S. UNNATURAL CRUELTY													
[·	95	S0-S99. Cruel relatives													
	96	S10. Cruel parents	X	X	X	X	X	X	X	null	null	X			
	97	S12. Cruel mother	X	null	null	X									
	98	S12.2. Cruel mother kills child	X	null	null	null									
	99	S12.2.1. Cruel mother plans death of daughter	X	null	null	X									
	100	S30. Cruel step- and foster relatives	null	X	X	X	X	X	X	X	null	null			
	101	S31. Cruel stepmother	null	X	X	X	X	X	X	X	null	null			
	102	S31.1. Cruel stepmother kills child	null	null	null										
	103	S31.1.1. Cruel stepmother plans death of stepdaughter	null	X	X	X	X	X	X	X	Х	null			
	104	S100-S199. Revolting murders or mutilations													
	105	S111. Murder by poisoning	X	X	X	X	X	X	X	X	null	null			
	106	S111.3. Murder with poisoned comb	X	X	X	X	X	X	X	null	null	null			
	107	S111.4. Murder with poisoned apple	X	X	X	X	X	X	X	X	null	null			
	108	S111.4.1. The poisoned apple was rosy-cheeked	Х	X	X	X	X	X	X	X	null	null			
	109	S111.4.2. The poisoned apple was thrown to the princess	null	X	null	null									
	110	S111.4.3. The princess eats a piece of the poisoned apple	X	X	X	X	X	X	X	Х	null	null			
	111	S115. Murder by stabbing	null	null	X										
1.	112	S115.2. Murder by sticking needle through head	null	null	X										
	113	S119. Murder				8			6	~		6		12	-
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		S322. D1311. Magic object used for divination				х	х	Х	х	х	х	Х	X	null	null
	119	D1311.2 Mirror answers questions				x	x	x	x	x	x	x	x	null	null
	120	5322.4. Evil ottopinouror odoto boy total	- Hum	Hum		^		^		^	Hull	nun	^	Hull	Hull
	121	S322.4.2. Evil stepmother orders stepdaughter to be killed	null	X	X	X	X	X	X	X	null	null			
	122	S222 1 1 The cruel stopmother kills her stondaughter	pull	v	~	v	v	v	v	v	null	null			
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		Normal View Ready								Sum=0	,				









GRAPH DATABASE (RDF) = VIRTUOSO QUERY LANGUAGE = SPARQL







DIGITAL BREADCRUMBS of BROTHERS GRIMM

DATABASE OF MOTIFS

Open Search Search by: Title of tale Motif n.1 Stepmother Motif n.2 **Author VIAF** number Language **Date**

Results: 7 Results

Tale: Bella Venezia

Author: Calvino, Italo

Collection: Fiabe Italiane

Date: 1956

VIAF: 181208131

Motif: **Stepmother** (P282)

Url: www.text.....

Tale: Schneewittchen

Author: Gebrüder Grimm Collection: Kinder- und

Hausmärchen

Date: 1819

VIAF: 187449723

Motif: **Stepmother** (P282)

Url: www.text.....

Tale: Schneewittchen

Author: Gebrüder Grimm

Collection: Kinder- und

Hausmärchen

Date: 1837

VIAF: 187449723

Motif: **Stepmother** (P282)

Url: www.text.....



What are we working on?

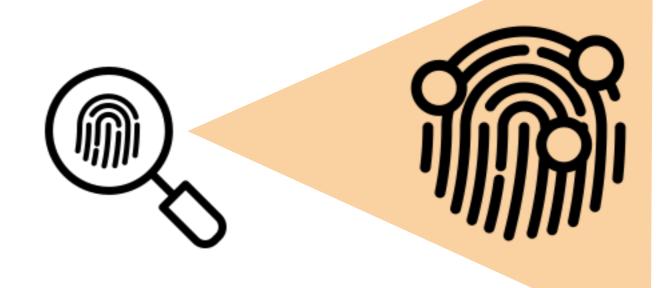
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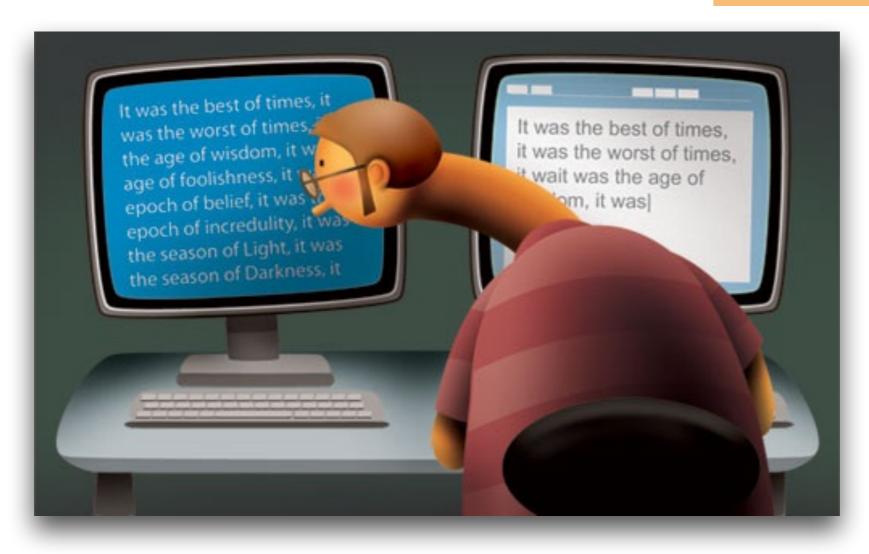






Typical computer scientists' expectation: **plagiarism**











Humanists' expectation: oversimplification













ACID for the Digital Humanities:

Acceptance

Complexity

Interoperability

Diversity

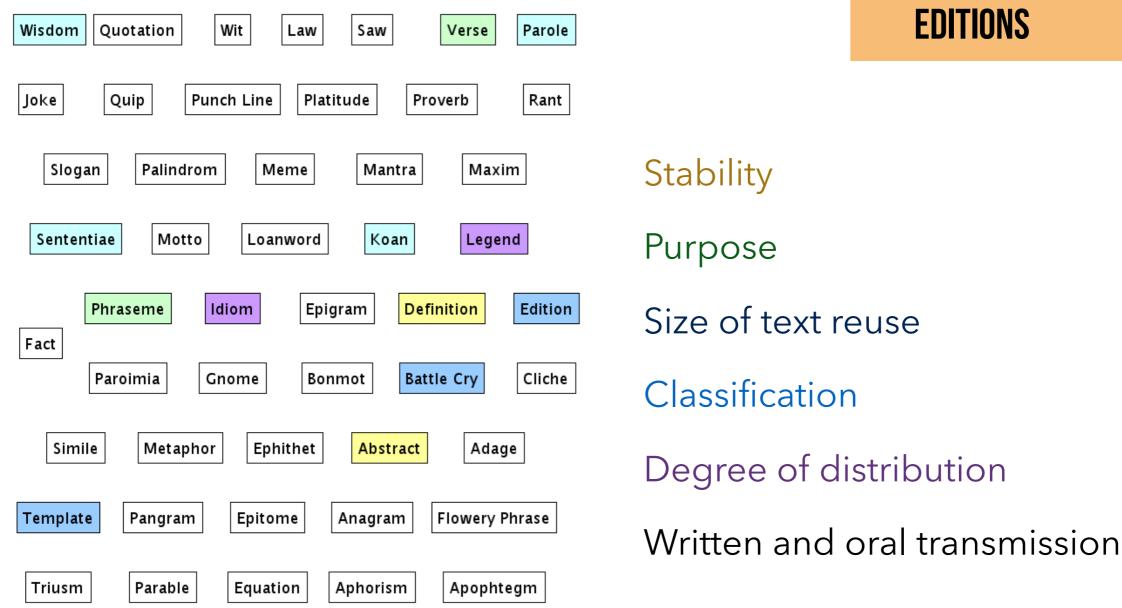






ACID for the Digital Humanities - Diversity (Reuse Types)

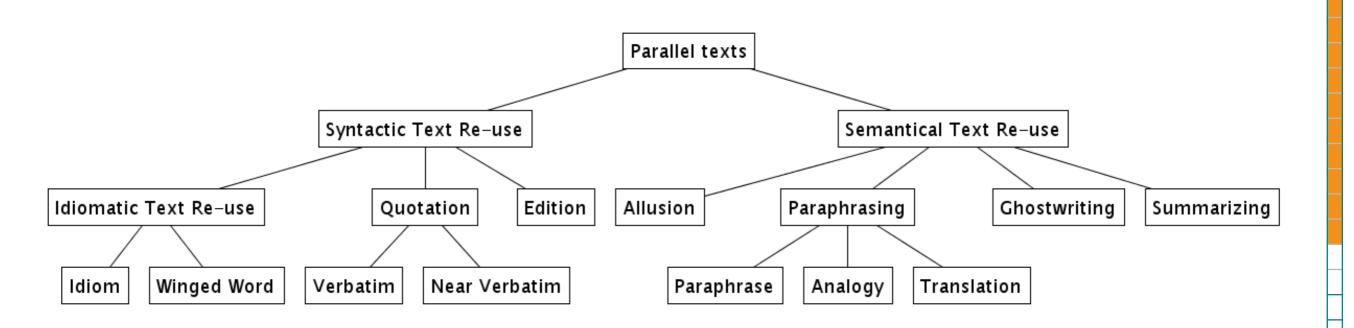






ACID for the Digital Humanities - Diversity (Reuse Types)





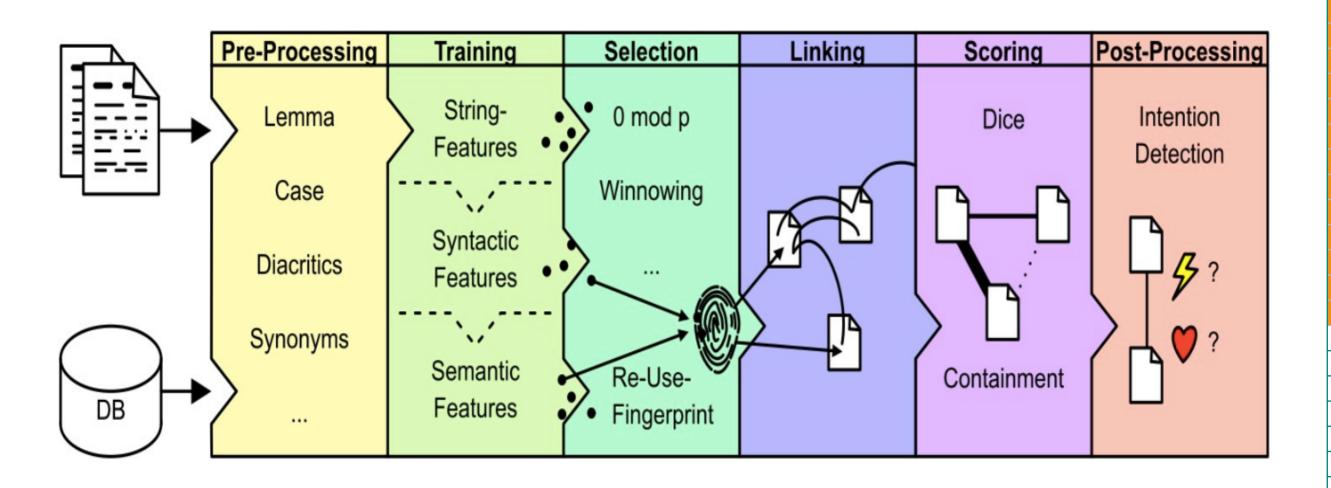




TRACER

6 steps



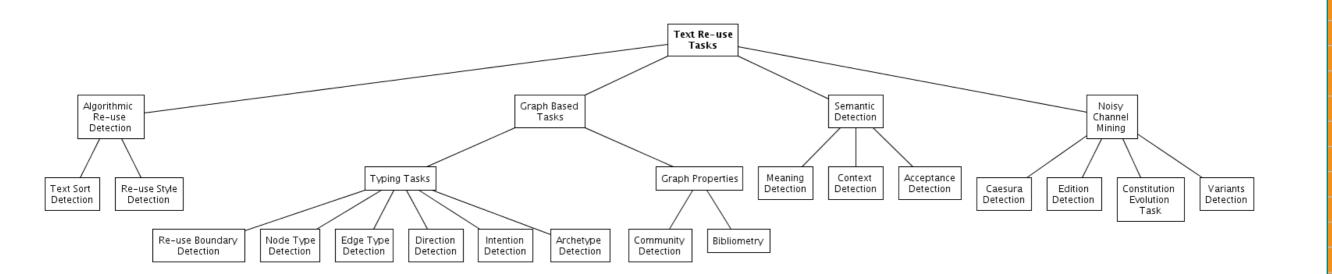






ACID for the Digital Humanities - Complexity









ACID for the Digital Humanities - Interoperability



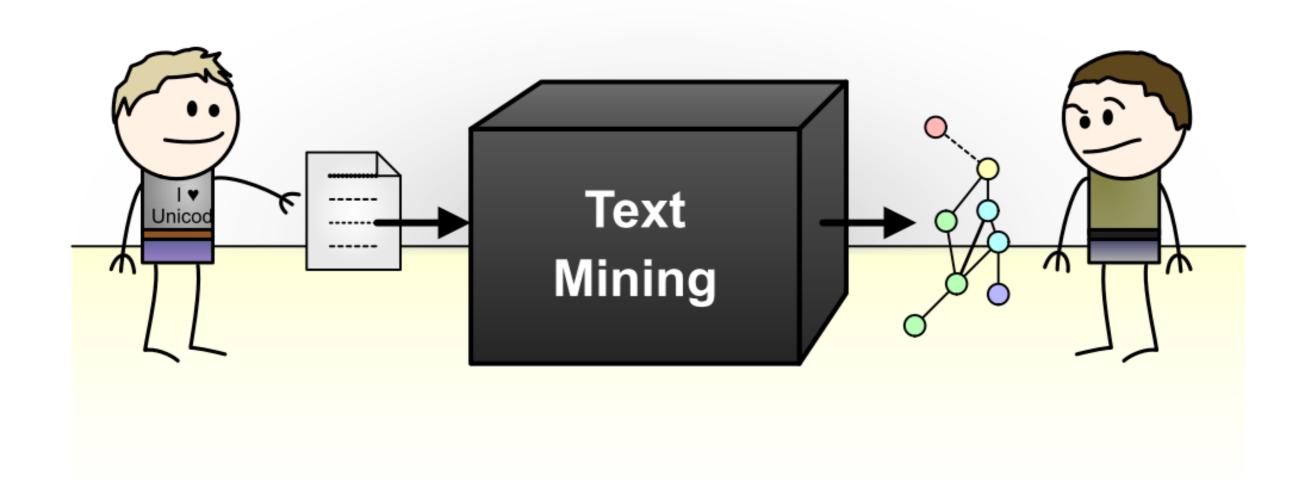
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ACID for the Digital Humanities - Acceptance I









ACID for the Digital Humanities - Acceptance II





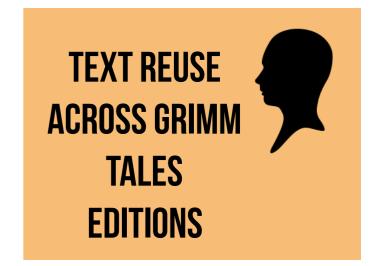
How to be accepted by humanists if text mining is a black box, that can't be looked into?

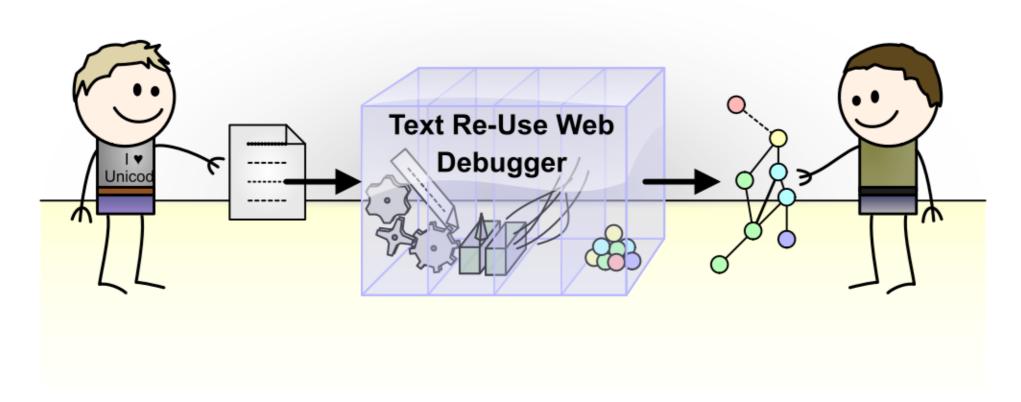






ACID for the Digital Humanities - Acceptance III





Transparency: How to provide user-friendly insights into complex mining techniques and machine learning?





ACID for the Digital Humanities - Acceptance IV

And God said, Let the earth bring forth living creatures after their kind, cattle, and creeping things, and beasts of the earth after their kind: and it was so.



Trace

	_		
- Ston	n -	Searchin	
- Step	U.	Scar Cilli	ч

Please select a Corpus:*

Please select the number of displayed sentences: 20 | \$\circ\$

Input the Word you are searching for:*

God

Input the Word you are searching for:* God	
Fields with * are necessary	
Trace	
In the beginning God created the heavens and the earth.	Trace
And the earth was waste and void; and darkness was upon the face of the deep: and the Spirit of God moved upon the face of the waters.	Trace
And God said, Let there be light: and there was light.	Trace
And God saw the light, that it was good: and God divided the light from the darkness.	Trace
And God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day.	Trace
And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters.	Trace
And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament: and it was so.	Trace
And God called the firmament Heaven. And there was evening and there was morning, a second day.	Trace
And God said, Let the waters under the heavens be gathered together unto one place, and let the dry land appear: and it was so.	Trace
And God called the dry land Earth; and the gathering together of the waters called he Seas: and God saw that it was good.	Trace
And God said, Let the earth put forth grass, herbs yielding seed, and fruit-trees bearing fruit after their kind, wherein is the seed thereof, upon the earth: and it was so.	Trace
And the earth brought forth grass, herbs yielding seed after their kind, and trees bearing fruit, wherein is the seed thereof, after their kind: and God saw that it was good.	Trace
And God said, Let there be lights in the firmament of heaven to divide the day from the night; and let them be for signs, and for seasons, and for days and years:	Trace
And God made the two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also.	Trace
And God set them in the firmament of heaven to give light upon the earth,	Trace
and to rule over the day and over the night, and to divide the light from the darkness: and God saw that it was good.	Trace
And God said, Let the waters swarm with swarms of living creatures, and let birds fly above the earth in the open firmament of heaven.	Trace
And God created the great sea-monsters, and every living creature that moveth, wherewith the waters swarmed, after their kind, and every winged bird after its kind: and God saw that it was	good. <u>Trace</u>
And God blessed them, saying, Be fruitful, and multiply, and fill the waters in the seas, and let birds multiply on the earth.	Trace



prev 0 1 2 3 4 5 6 ... 1146 next





ACID for the Digital Humanities - Acceptance V



■Step 0: Searching						
	Step 1: Preprocessing					
Please select a preprocessing strategy: Unprocessed Sentence: Preprocessed Sentence:	01:02-WLP:lem=true_syn=false_ssim=false_redwo=false:ngram=5:LLR=true_toLC=t In the beginning God created the heavens and the earth. in the begin god create the heaven and the earth .	ue_rDia=false_w2wl=false:wlt=5 \$\rightarrow\$	change			
Your correction for the processed sentence:	in the begin god create the heaven and the earth .					
Your comment:			submit changes			

Other users preference

No users have suggested a change in the preprocessing level

next Level





ACID for the Digital Humanities - Acceptance VI





Please select a training strategy: Bi Gram Shingling Training | Change

Preprocessed sentence: in the begin god create the heaven and the earth

Position	Feature
0	in the
1	the begin
next Level	

Position	Feature
2	begin god
3	god create

Position	Feature
4	create the
5	the heaven

Position	Feature
6	heaven and
7	and the

Position	Feature
8	the earth
9	earth .

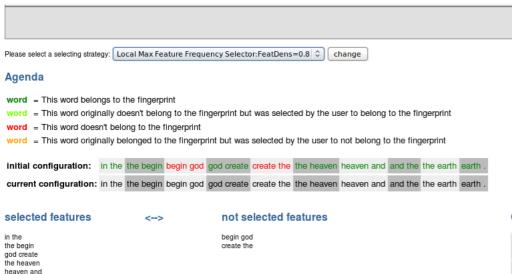






ACID for the Digital Humanities - Acceptance VII





Other users preference

Feature	users selected	users not selected
in the	0	1
the begin	1	0
begin god	1	0
god create	1	0
create the	0	1
the heaven	1	0
heaven and	1	0
and the	0	1
the earth	1	0
earth .	0	1

■Step 3: Selecting

Statistics

Feature	Selected Features	Total number of features
in the	27114	32227
the begin	470	480
begin god	0	5
god create	27	45
create the	17	38
the heaven	1624	1695
heaven and	389	398
and the	31808	40850
the earth	4776	5222
earth .	1030	1040

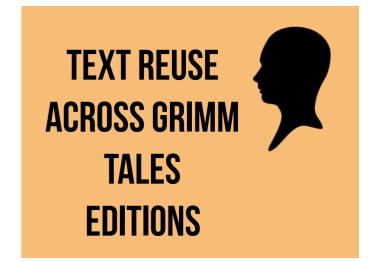
submit changes

next Level









Further topics

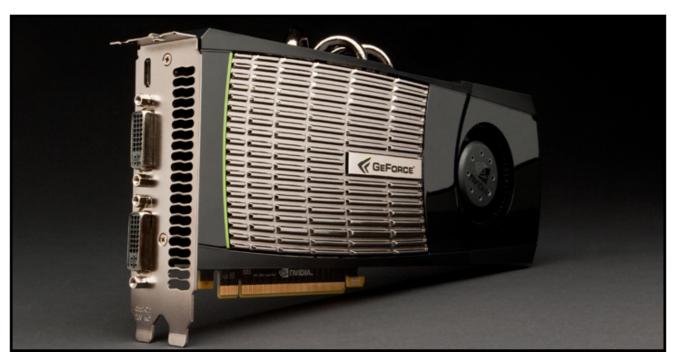


Evaluation of text reuse: manual or automatic

Research on the measurable primitives including eye-tracking and

electroencephalogram

Scaling Text Reuse at any size









http://etrap.gcdh.de/



Copying from one is plagiarism, copying from many....

is research.

-Wilson Mitzner-





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