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AFLiCo – Liège – 2017.06.02

The diachrony of polysemy networks

The semantic extension of time-related lexemes in Ancient Greek and Ancient Egyptian

Outline of the talk

- Introduction
  - Le Diasema (LExical DIAchronic SEmantic MAps)
  - Polysemy networks *vs.* semantic maps
- The semantic extension of time-related lexemes in Ancient Egyptian and Ancient Greek
  - Plotting a synchronic semantic map based on crosslinguistic colexification patterns
  - Adding a diachronic dimension to the semantic map
    - The database of semantic shifts
    - What does the Ancient Greek and Ancient Egyptian diachronic material bring into the picture?
- Conclusions
  - Towards a more fine-grained semantic map of time-related lexemes
  - Cognitive and cultural motivations for semantic extensions

Introduction

Introducing ‘Le Diasema’ and
the distinction between polysemy networks and semantic maps

Le Diasema

- Duration: December 2016 – December 2018
- Main research question: how semantic maps make significant predictions about language change at the lexical level?
- Funding schemes

Université de Liège

HR EXCELLENCE IN RESEARCH

BeIPD-COFUND

euraxess

Le Diasema

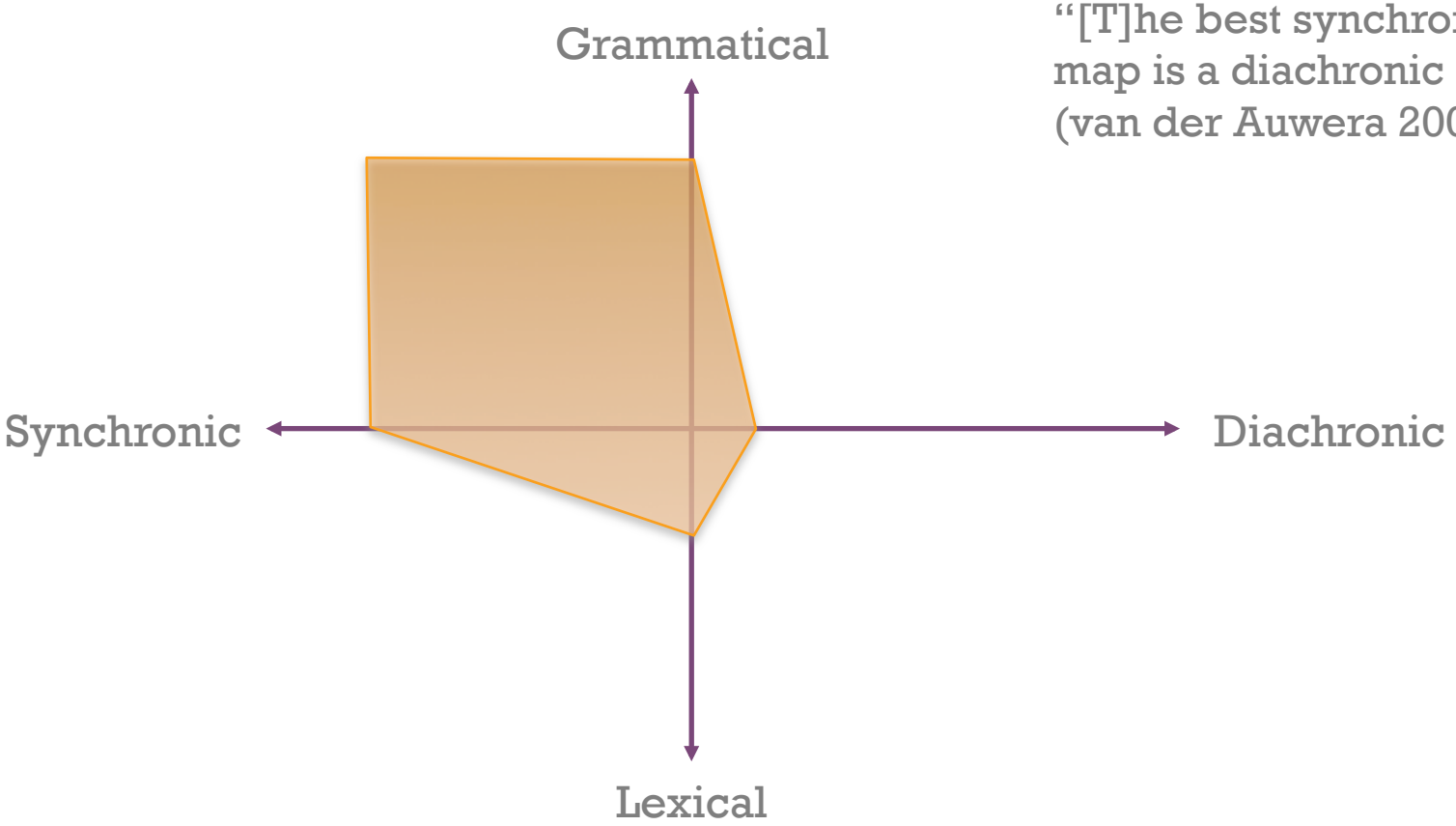
http://web.philo.ulg.ac.be/lediasema/

Le Diasema

Specific objectives

- To incorporate the diachronic dimension into semantic maps of content words

"[T]he best synchronic semantic map is a diachronic one"
(van der Auwera 2008: 43)



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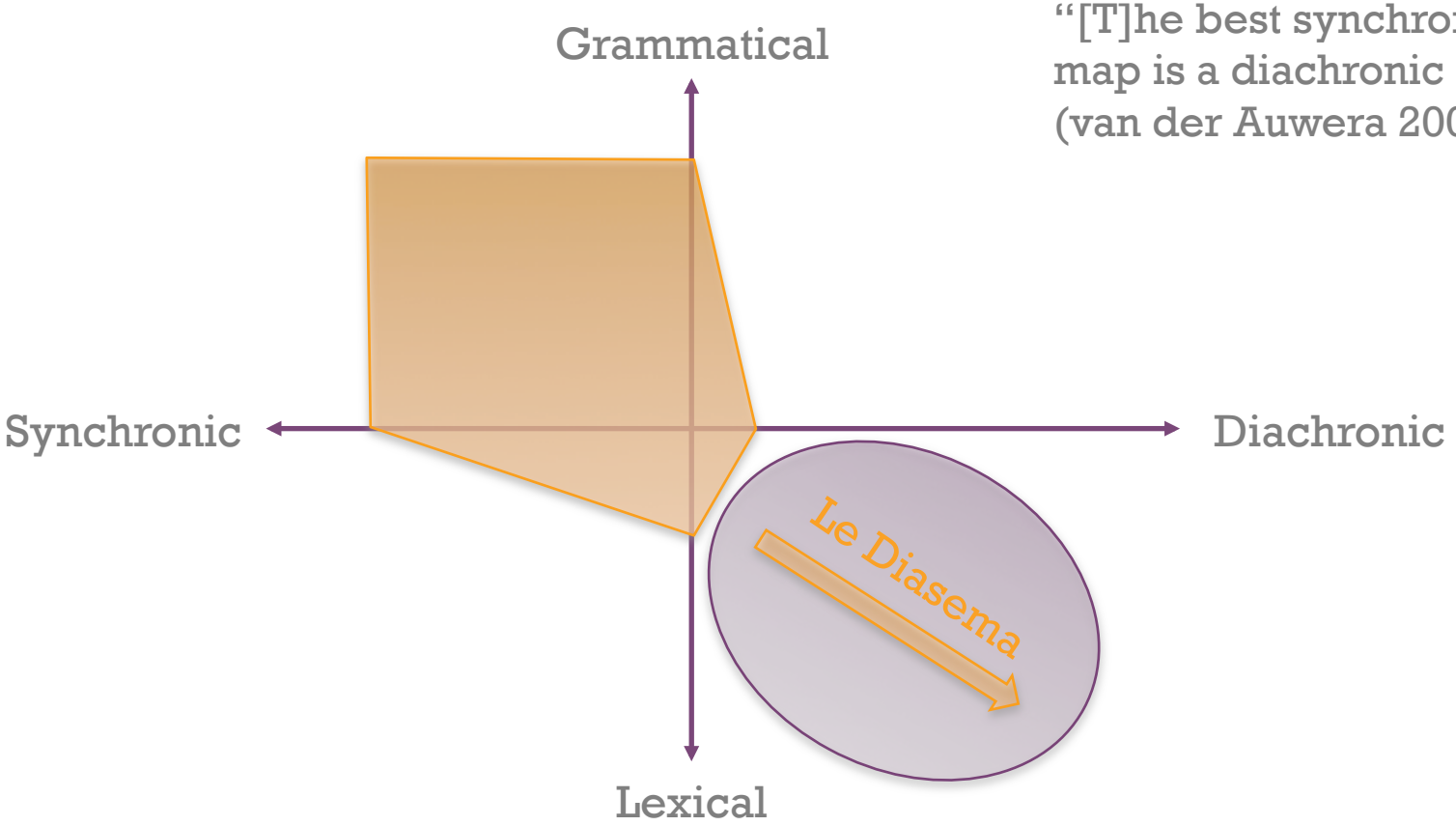

Le Diasema

Specific objectives

- To incorporate the diachronic dimension into semantic maps of content words

- To extend the method so as to also include information about the cognitive and cultural factors behind the development of the various meanings

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- To create an online platform for automatically plotting diachronic semantic maps based on polysemy data from the languages of the world

Le Diasema

Specific objectives for today

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Polysemy networks vs. semantic maps

Polysemic networks	Semantic maps
Polysemy sense distinctions are attributed to speakers' mental representations.	**Multifunctionality** (Haspelmath 2003) No commitment to a particular claim about conventionalization of senses.
	Colexification "A given language is said to colexify two functionally distinct senses if, and only if, it can associate them with the same lexical form" (François 2008: 170)

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Language specific In some cognitive approaches, certain criteria are applied to distinguish between distinct senses and context dependent usages. (e.g. Tyler & Evans 2003; cf. Lakoff 1987)	**Cross-linguistic** Sense distinctions are based upon the empirical observation of contrasts between languages "A function is put on the map if there is at least one pair of languages that differ with respect to this function" (Haspelmath 2003: 217; cf. François 2008: 168-169)

Polysemy networks vs. semantic maps

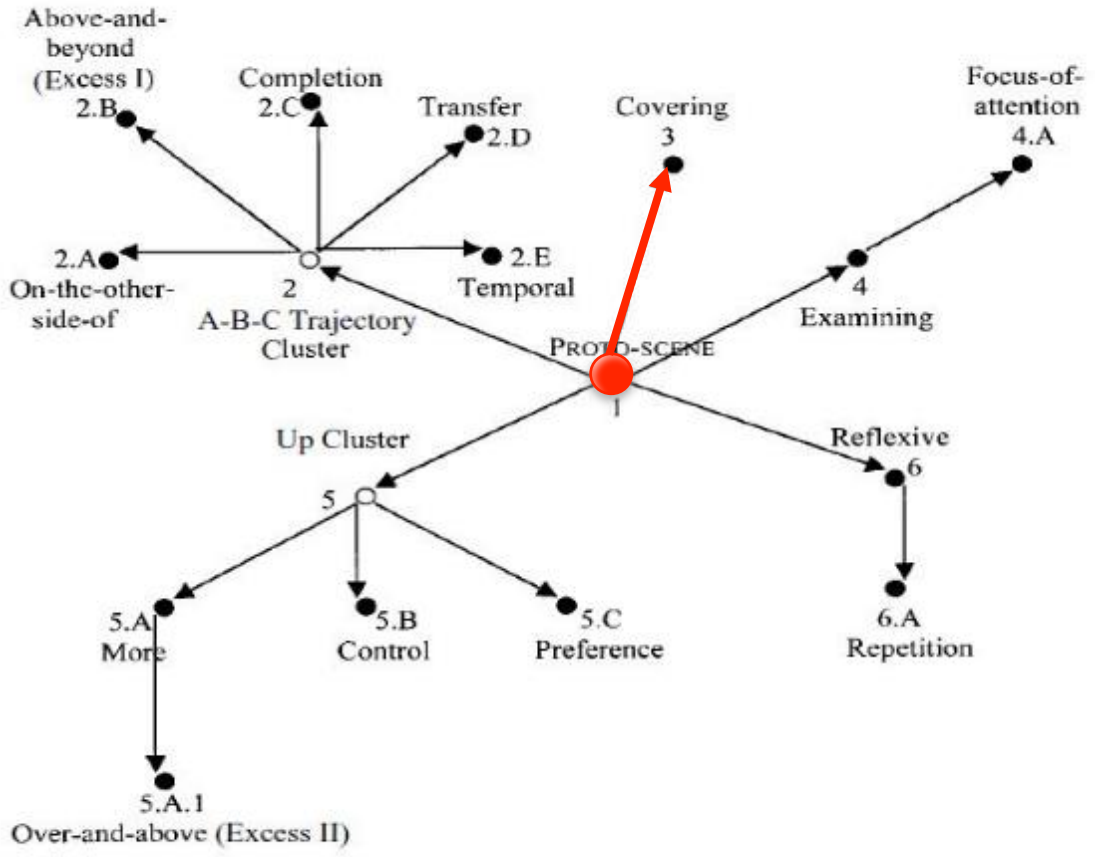


Fig. 1. The polysemic radial network for *over* (Tyler & Evans 2003: 80)

- There is a **prototypical meaning** from which other senses are derived in radial fashion.
- The **arrow** shows derivation of a sense from an another sense (not directionality)
- The **semasiological** approach is mainly adopted
- They are designed to have **language-specific** validity (but rely on established principles of language processing)

Polysemy networks vs. semantic maps

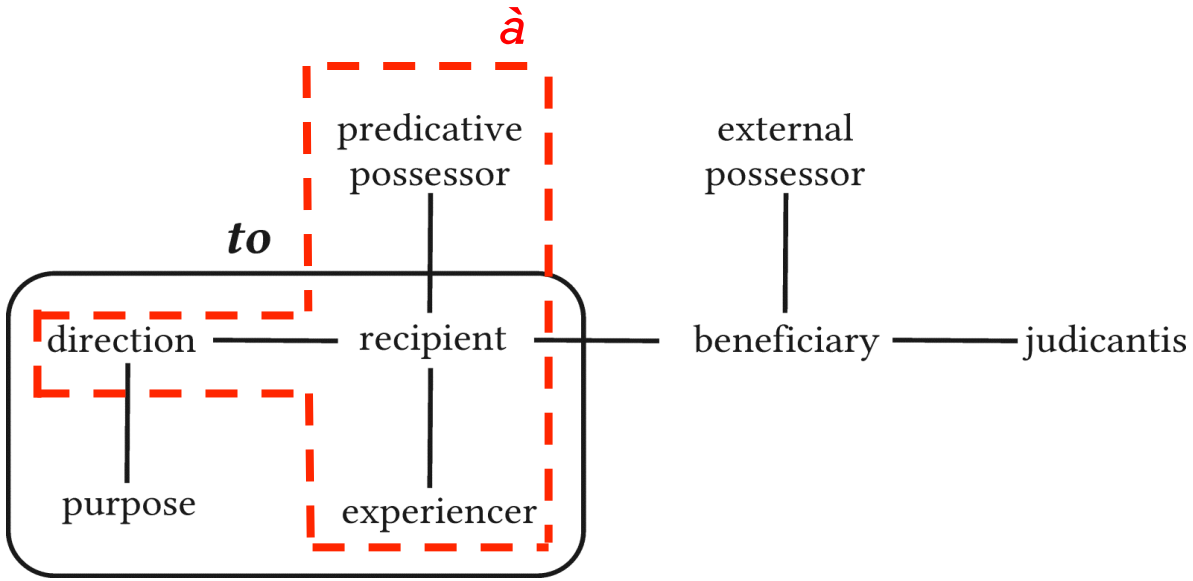


Fig. 3. A semantic map of typical dative functions / the boundaries of English *to* and French *à* (based on Haspelmath 2003: 213, 215)

- They do not require the identification of a **prototypical** sense. One may choose a single meaning as a pivot
- They combine the **onomasiological** and the **semasiological** perspective
- They are based on **crosslinguistic evidence** and designed to have **cross-linguistic validity**

Polysemy networks vs. semantic maps

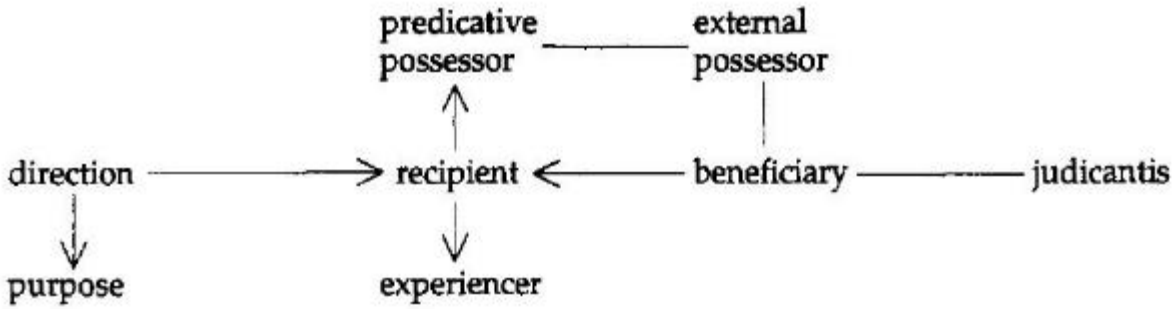


Fig. 4. Dynamicized semantic map of dative functions
(Haspelmath 2003: 234)

- The **arrows** do designate directionality of change

Polysemy networks vs. semantic maps

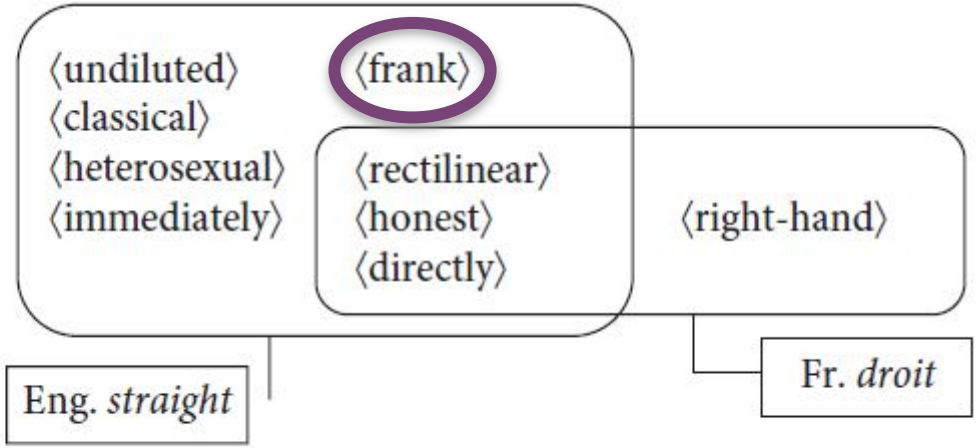


Fig. 5. Overlapping polysemies: Eng. straight *vs.* Fr. droit. (François 2008: 167)

"A function is put on the map if there is at least one pair of languages that differ with respect to this function" (Haspelmath 2003: 217; cf. François 2008: 168-169)

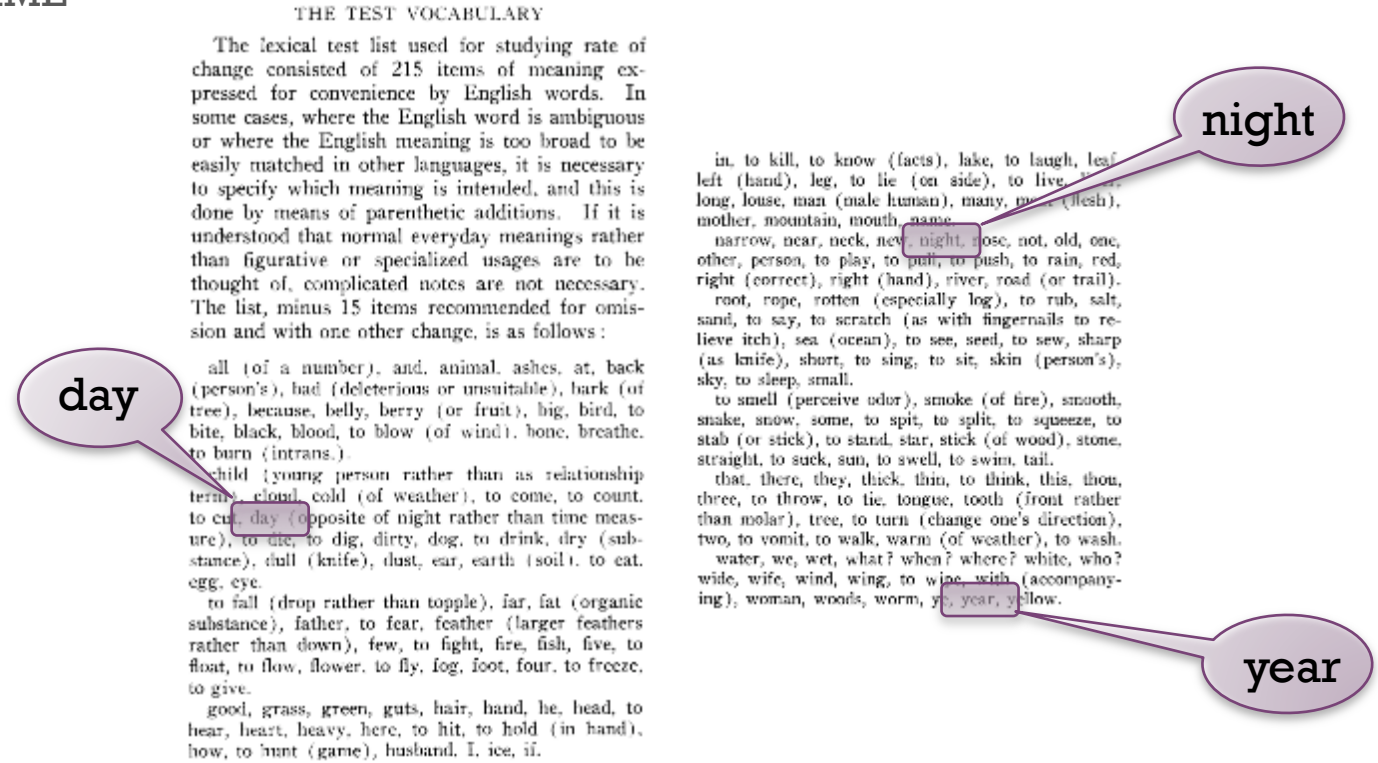
The semantic extension of time-related lexemes

Inferring a semantic map based
on cross-linguistic colexification patterns

The semantic extension of time-related lexemes

Plotting a synchronic semantic map

- For the purpose of universality and stability, we chose the entries for time-related concepts in the Swadesh 200-word list (Swadesh 1952: 456-457)
  - DAY/DAYTIME
  - NIGHT
  - YEAR



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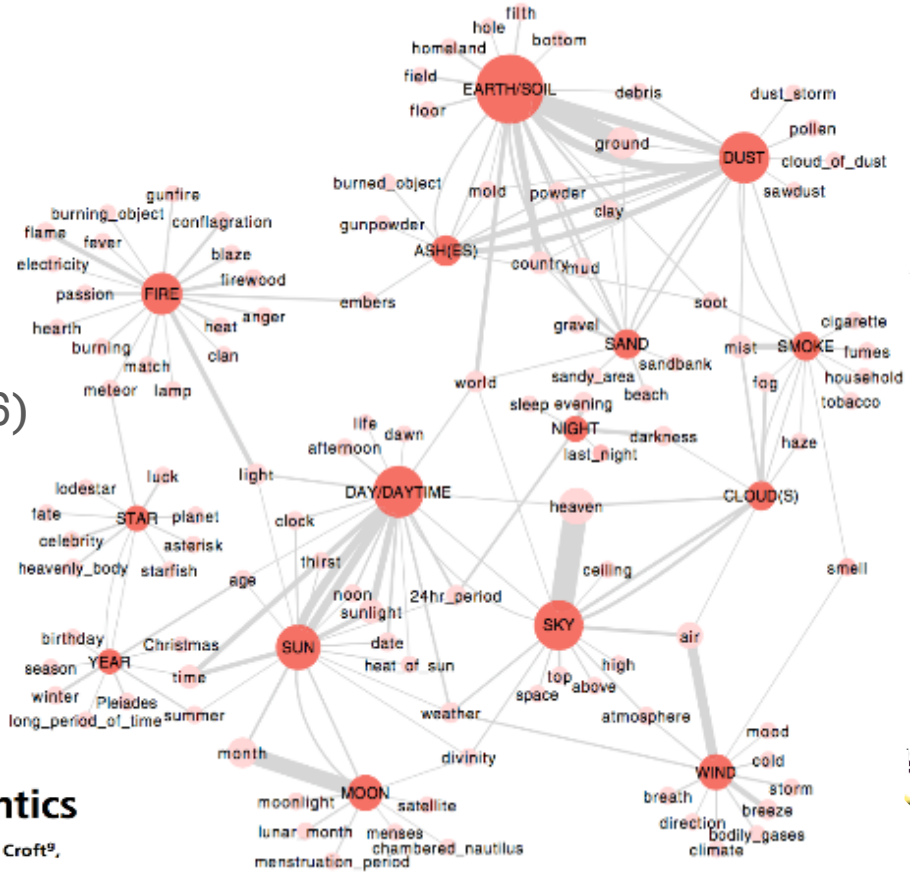

On the universal structure of human lexical semantics

Hyejin Youn[a,b,c,1], Logan Sutton[d], Eric Smith[c,e], Cristopher Moore[c], Jon F. Wilkins[c,f], Ian Maddieson[g,h], William Croft[g], and Tanmoy Bhattacharya[c,i,1]

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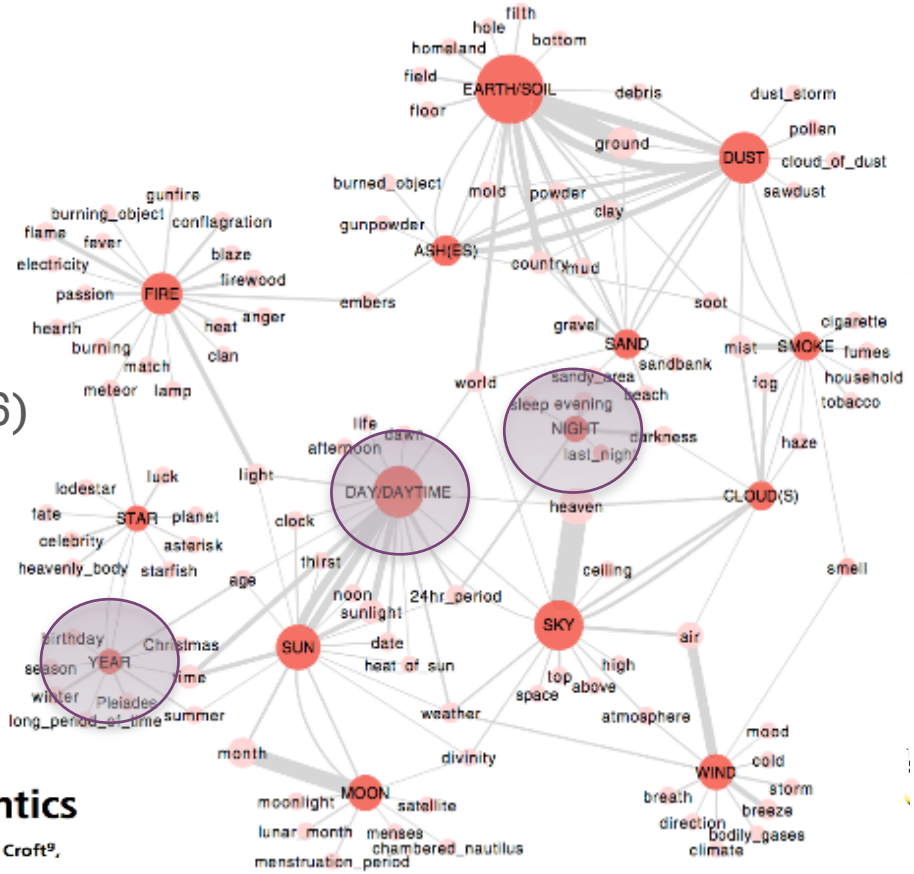

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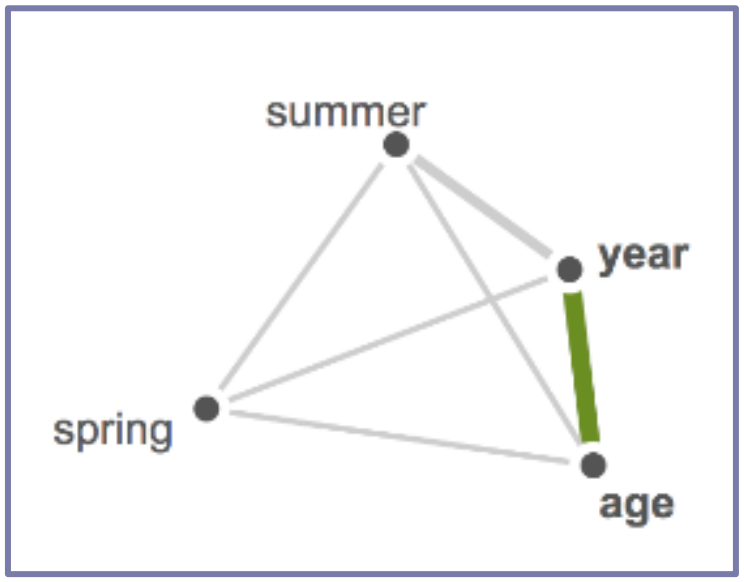
The semantic extension of time-related lexemes

Plotting a synchronic semantic map

- We identified in the database of Crosslinguistic Colexifications (CLICs; http://clics.lingpy.org/main.php; List et al. 2014) the main polysemy patterns attested for these three meanings (subgraph approach) [16 meanings]
  - **DAY/DAYTIME**: CLOCK/TIMEPIECE, HOUR, SEASON, SUN, TIME, WEATHER
  - **NIGHT**: DARK (in color), DARKNESS, BLACK, OBSCURE
  - **YEAR**: AGE, SPRING, SUMMER



The semantic extension of time-related lexemes

Plotting a synchronic semantic map

- All the colexification patterns attested for these 16 meanings were gathered in the CLICs source files (http://clics.lingpy.org/download.php), ending up with **381 colexification** patterns

	A	B	C
119	day	afternoon	hau_std:rana//ket_std:iʔ//plj_std:piidi//rus_std:den//tli_std:yakyee
120	day	again	kha_std:sngi
121	day	age	gui_std:ˈara//yad_std:hnda
122	day	anger	tzz_std:k'ak'al
123	day	bright	tzz_std:k'ak'al
124	day	clock, timepiece	gue_std:wurlngarn//sei_std:šāʔ
125	day	cloud	haw_std:ao
126	day	country	cbr_std:niti//shp_std:niti
127	day	dawn	haw_std:ao//waw_std:enmari
128	day	doubt	haw_std:lā
129	day	earth, land	cag_std:nafu//haw_std:ao//mri_std:ao//tzz_std:osil
130	day	east	tob_std:naʔaʔk
131	day	fever	tzz_std:k'ak'al
132	day	fin (dorsal)	haw_std:lā
133	day	fire	jpn_std:hi
134	day	go	ole_std:pa//oym_std:aa
135	day	go away, depart	ole_std:pa
136	day	hour	sap_Standard:aknim//shb_std:thəm
137	day	lamp, torch	ito_std:uwayo
138	day	lick	cmn_std:tian
139	day	light (in color)	mri_std:ao
140	day	light (noun)	con_std:aʔta//crt_std:xloma//haw_std:ao//hdn_Northern:ʔkatʰkáa//ito_std:uwayo//mzh
141	day	live, living, life	shp_std:niti
142	day	Monday	shp_std:niti
143	day	morning	crt_std:xloma//guq_std:kreibu
144	day	noon, midday	ind_std:siang//plj_std:piidi

The semantic extension of time-related lexemes

Plotting a synchronic semantic map

- All the colexification patterns attested for these 16 meanings were gathered in the CLICs source files (http://clics.lingpy.org/download.php), ending up with **381 colexification** patterns
- These synchronic polysemy patterns were converted into a **lexical matrix**

```
Tmap = [Tsenses]
for t in Tclean:
        split_langWord = t[2].split('//')
        for couple in split_langWord:
                langWord = couple.split(':')
                line = [langWord[0], langWord[1]]
                for i in range (2,len(Tsenses)):
                        line.append('0')
                line[Tsenses.index(t[0])] = '1'
                line[Tsenses.index(t[1])] = '1'
                Tmap.append(line)
```

Python script α

	A	B	C	D	E	F
1			age	acid, sour	city, town	day
2	yad_std	hnda	1	1	0	1
3	vec_std	edat	1	0	0	0
4	jpn_std	toshi	1	0	1	0
5	gui_std	ʻara	1	0	0	1
6	nog_std	йуэ	1	0	0	0
7	mri_std	pakeke	1	0	0	0
8	pbb_std	hiʔph	1	0	0	0
9	khv_Khvarshi	замана	1	0	0	0

Lexical matrix

The semantic extension of time-related lexemes

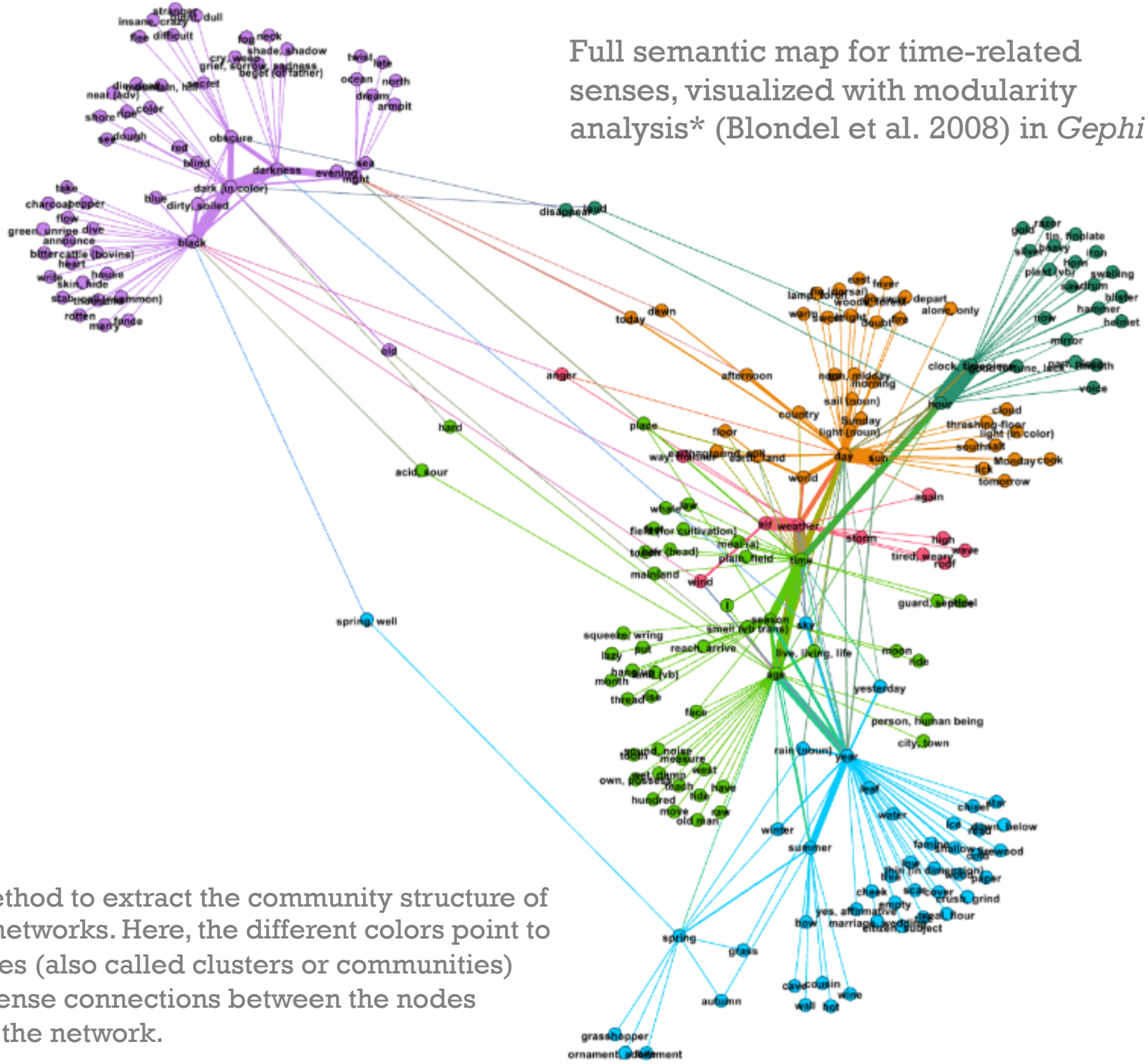
Plotting a synchronic semantic map

- All the colexification patterns attested for these 16 meanings were gathered in the CLICs source files (http://clics.lingpy.org/download.php), ending up with **381 colexification** patterns
- These synchronic polysemy patterns were converted into a **lexical matrix**
- From this lexical matrix, we inferred a **weighted semantic map**, based on an adapted version of the algorithm suggested by Regier et al. (2013)

```
# CREATE INITIAL GRAPH
# graph G: add each term's nodes, no edges in graph yet.
G = nx.Graph()  # create empty graph (undirected)
PossE = []      # list of possible edges, filled below
for t in T:
        # add all nodes in t, if not already in graph
        for n in t:
                if (not G.has_node(n)):
                        G.add_node(n)
        # add to PossE a link between each pair of nodes in t
        # adding a link between every node in G is needless and slower
        for pair in allpairs(t):
                u = pair[0]
                v = pair[1]
                if (not (((u,v) in PossE) or ((v,u) in PossE))):
                        PossE.append((u,v))
```

Python script β

Full semantic map for time-related senses, visualized with modularity analysis* (Blondel et al. 2008) in *Gephi*



* A method to extract the community structure of large networks. Here, the different colors point to modules (also called clusters or communities) with dense connections between the nodes within the network.

The semantic extension of time-related lexemes

Plotting a synchronic semantic map

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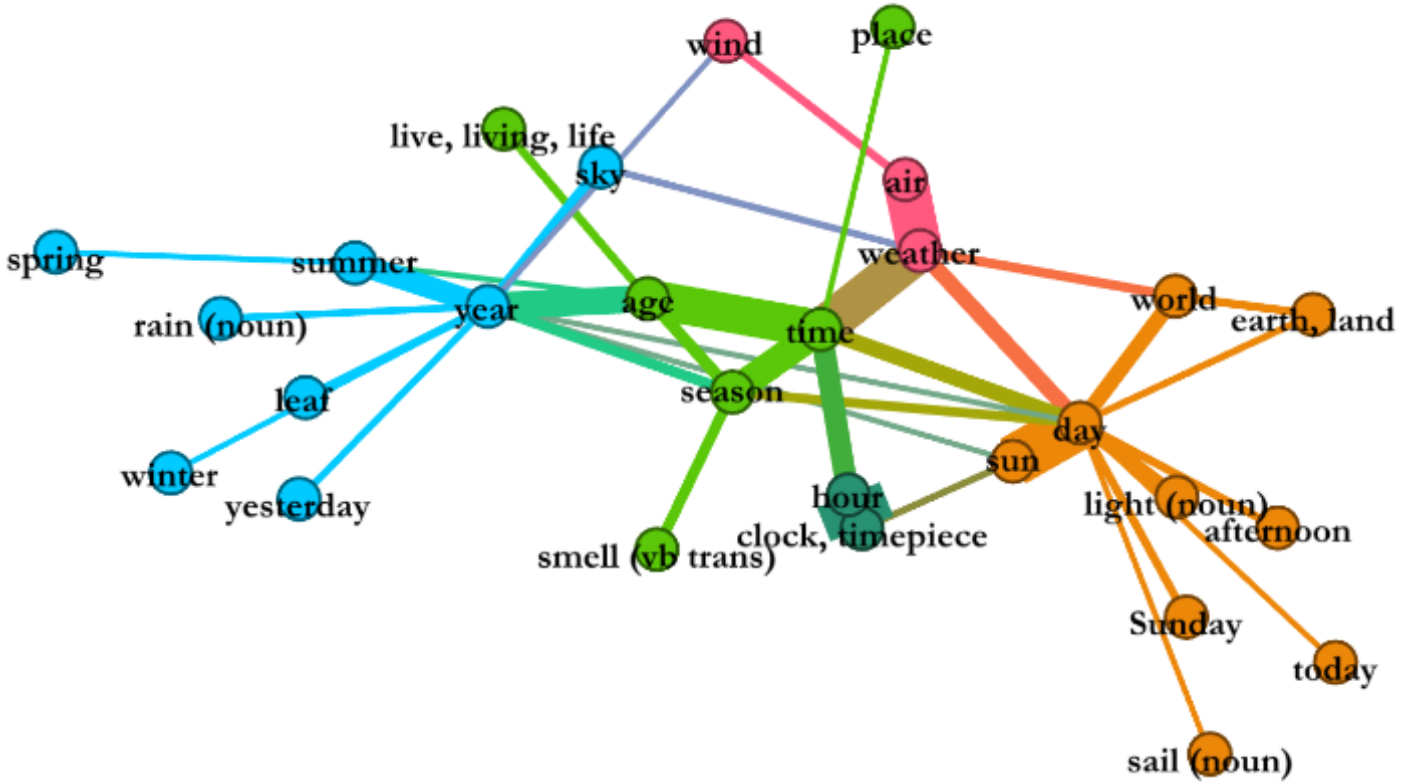
- These synchronic polysemy patterns were converted into a **lexical matrix**
- From this lexical matrix, we inferred a **weighted semantic map**, based on an adapted version of the algorithm by Regier et al. (2013)
- The weighted edges on the semantic map allow us to get rid of poorly attested patterns of polysemy (keeping only those attested in 2^{+} languages)

Semantic map of time-related senses
(colexification patterns attested in 2+ languages)

Two connected sub-networks

- NIGHT/DARKNESS/DARK
- DAY/TIME/AGE/YEAR



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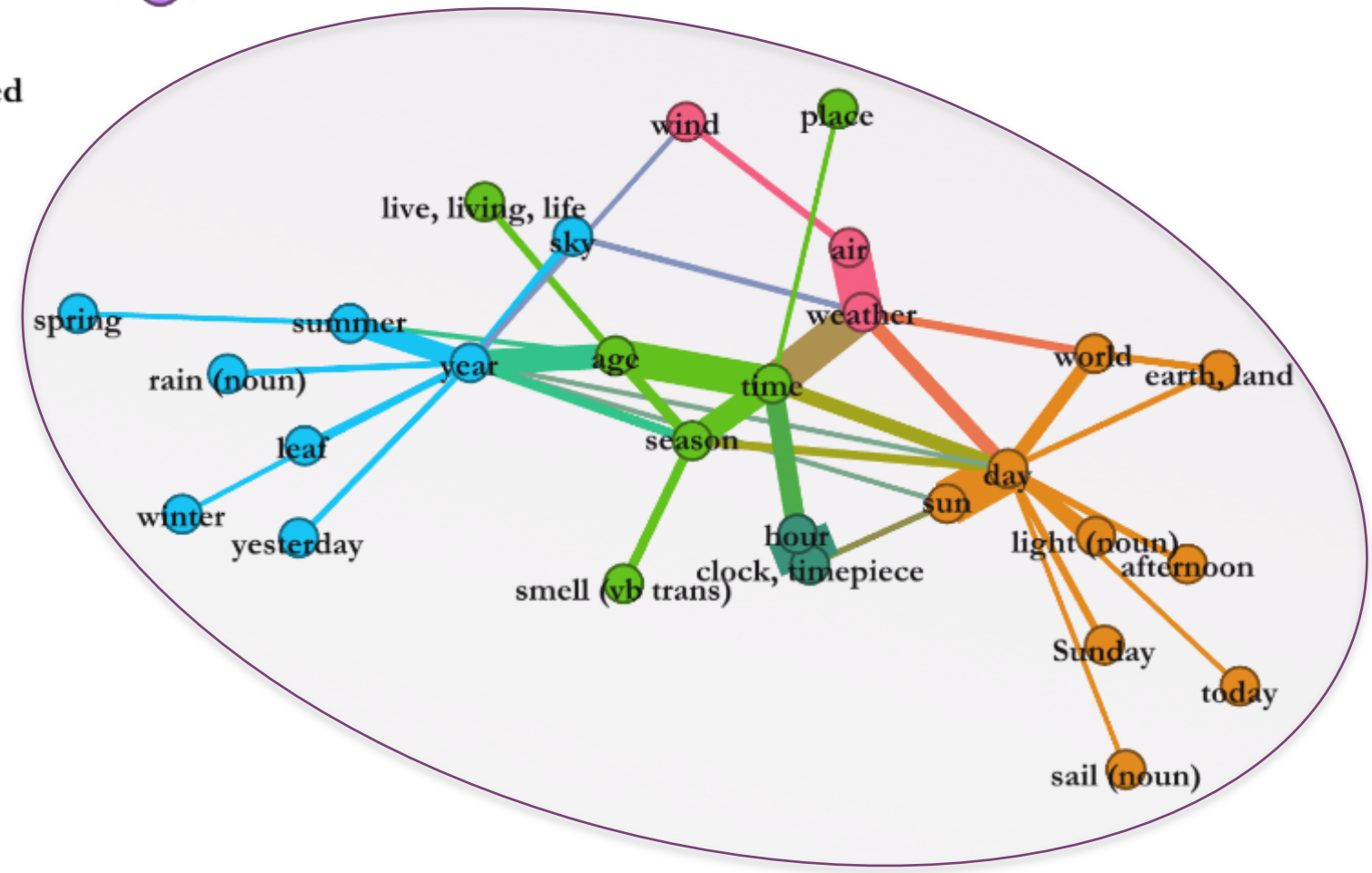


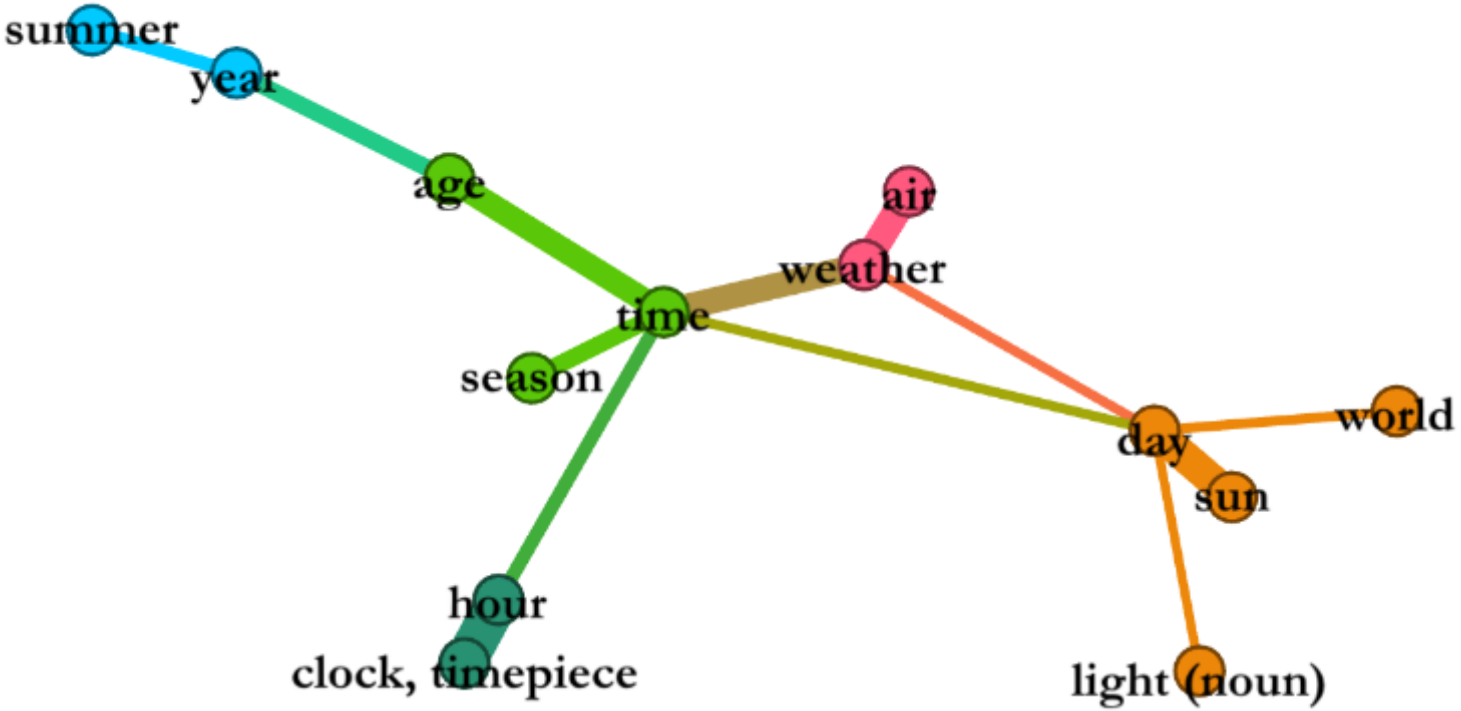
The semantic extension of time-related lexemes

Dynamicizing the map based on diachronic data

The semantic extension of time-related lexemes

Towards a dynamicized semantic map

- In order to investigate directionality of change, 13 meanings that are connected on this map in a least 8 different languages were kept as a basis for diachronic investigation



The semantic extension of time-related lexemes

Towards a dynamicized semantic map

- **Diachronic data**
  - The Catalogue of Semantic Shifts in the Languages of the World (Zalizniak, 2006; Zalizniak et al., 2012; http://semshifts.iling-ran.ru/)

DatSemShifts

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ID	Source	Direction	Target	Status	Contributed by	Accepted realization	Show
53	time	—	weather	Accepted	DG	4	Show
109	time	—	opportunity	Accepted	IG	2	Show
395	time	—	hour	Accepted	DG	2	Show
406	time	—	24 hours	Suspended	DG	0	Show
795	time	→	one time, once	New	MB	0	Show
1446	time	→	journal, magazine	Accepted	IG	3	Show

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Comments:
Ср. греч. хронограф, откуда могут быть кальки.

Confirmed by 3 Guru(s)

Derivation: German *Zeit* → *Zeitung, Zeitschrift* 'newspaper, journal'

Derivation: Karaim *вахт* 'time' → *вахтлых* 'journal'

Polysemy: Polish *czas* 'time' — 'journal'

The semantic extension of time-related lexemes

Towards a dynamicized semantic map

- **Diachronic data**
  - The Catalogue of Semantic Shifts in the Languages of the World (Zalizniak, 2006; Zalizniak et al., 2012; http://semshifts.iling-ran.ru/)
  - Ancient Greek (8th – 4th c. BC; in a few cases till 1st c. BC)
    - Perseus digital library (http://www.perseus.tufts.edu/hopper/), TLG (http://stephanus.tlg.uci.edu)
    - Cunliffe (*A lexicon of the Homeric Dialect*), LSJ
  - Ancient Egyptian (26th c. BC – 10th c. AD)
    - Thesaurus Linguae Aegyptiae (http://aaew.bbaw.de/tla/)
    - The Ramses corpus (http://ramses.ulg.ac.be),
    - Lexical resources (Coptic etymological dictionaries)

Le Diasema

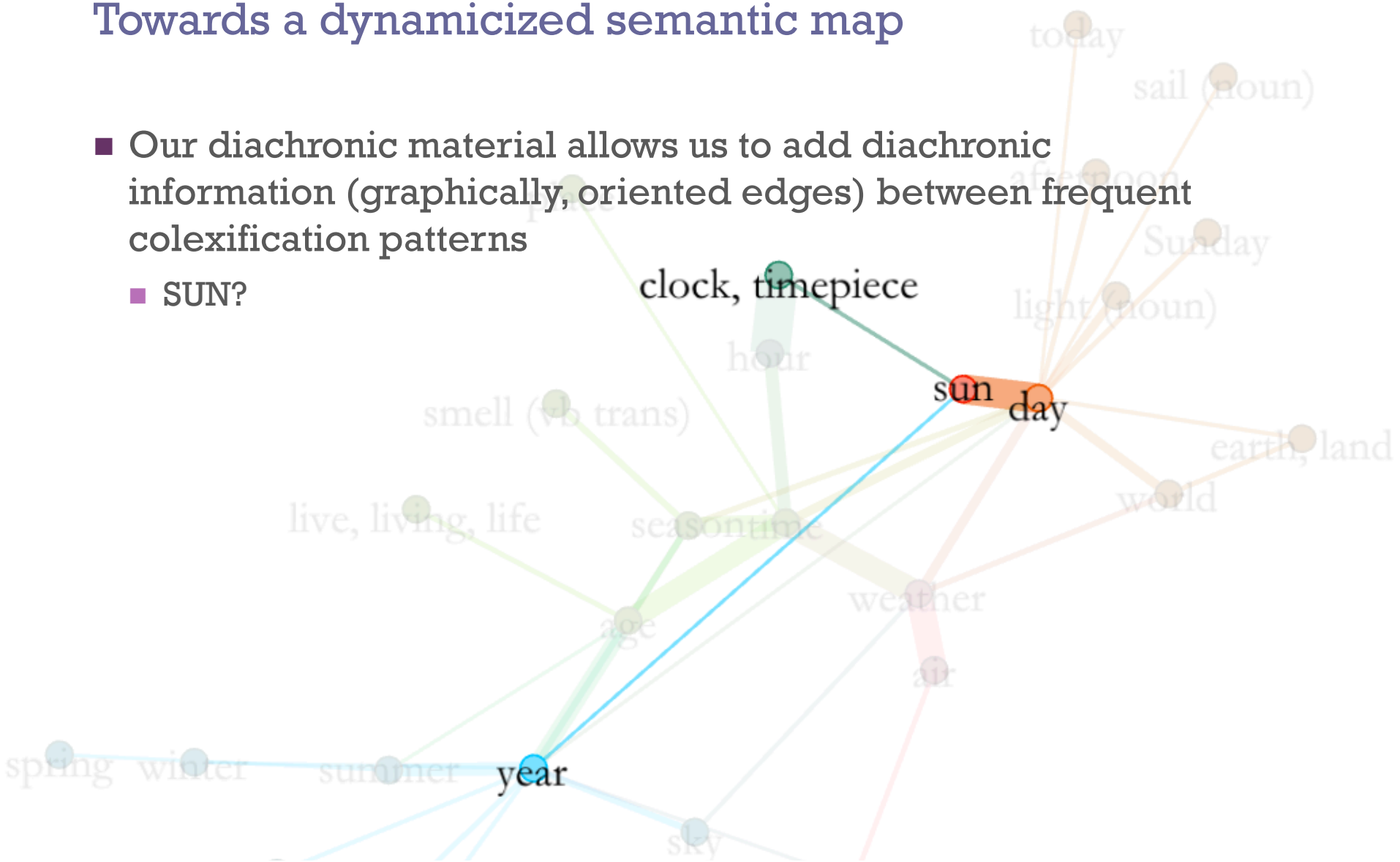
Towards a dynamicized semantic map

- Our diachronic material allows us to add diachronic information (graphically, oriented edges) between frequent colexification patterns

Le Diasema

Towards a dynamicized semantic map

- Our diachronic material allows us to add diachronic information (graphically, oriented edges) between frequent colexification patterns
  - SUN?



Ancient Greek

hēlíos 'sun' ⇒ 'day'

(1)

pân	*d'*	*êmar*	*pherómēn,*	*háma*	*d'*
whole:ACC.SG.N	ptc	day:ACC.SG.N	carry:IMPF.1PL.M/P	ADV	PTC

ēelíōi	***katadúnti***	*káppeson*	*en*	*Lḗmnōi*
sun:DAT.SG.M	**set:PTCP.AOR.DAT.SG.M**	fall:AOR.1PL	in	Lemnos:DAT.SG

'the whole day long I was carried headlong, and at **sunset** (lit. the sun setting down) I fell in Lemnos' (Homer, *Iliad* 1.592-593)

(2)

ékheis,	*egṓ*	*te*	*sé:*	***hēlíous***	***dè***	***muríous***
have:PRS.2SG	1SG.NOM	PTC	2SG.ACC	**sun:ACC.PL.M**	**PTC**	**infinite:ACC.PL.M**

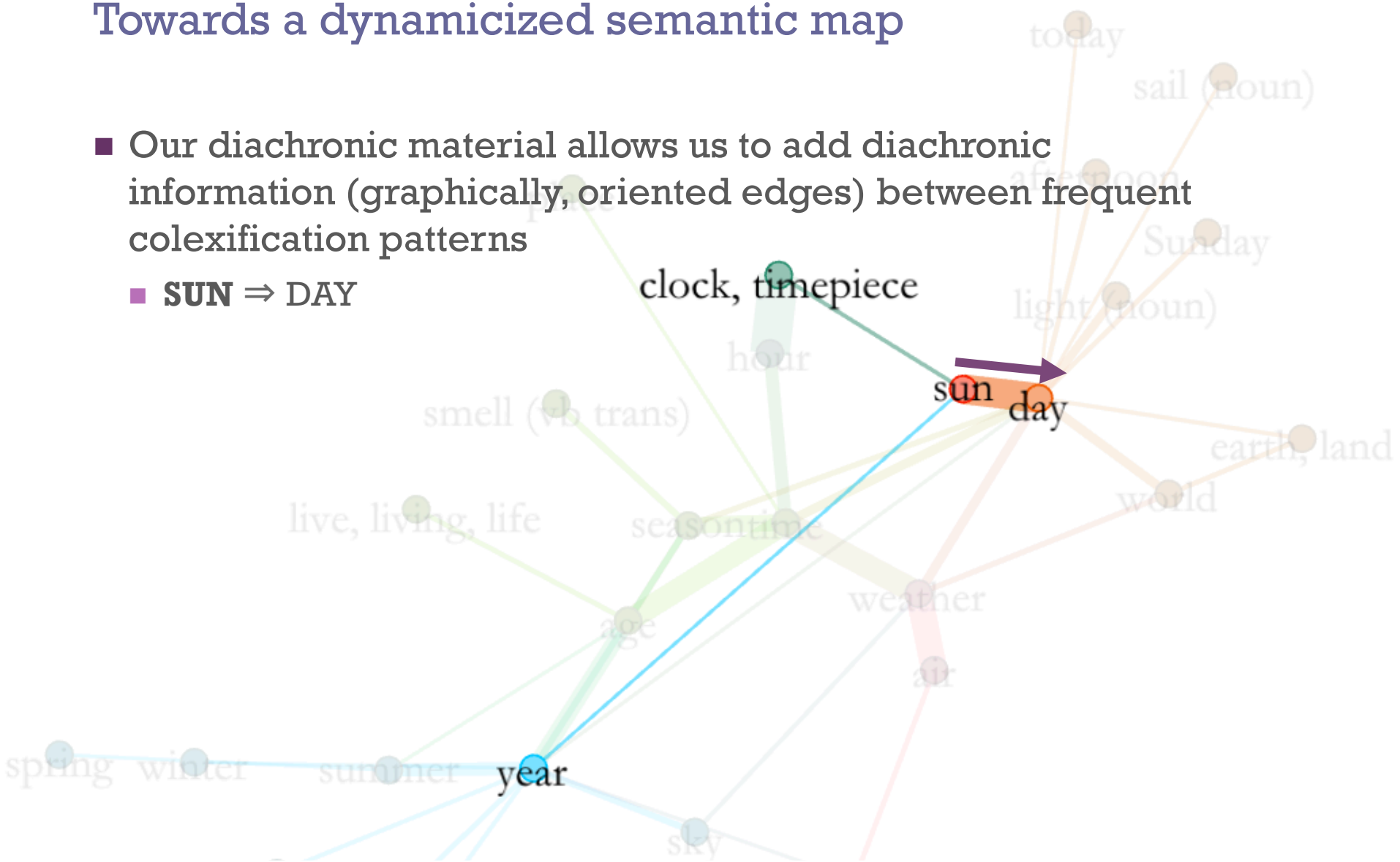
mólis	*dielthṑn*	*ēisthomēn*	*tà*	*tês*	*theoû*
ADV	pass:PTCP.AOR.NOM.SG.M	perceive:AOR.1SG.MID	ART.ACC.PL.N	ART.GEN.SG.F	god:GEN.SG

'You have me, and I have you; although it was hard to live **through so many days**, I now understand the actions of the goddess' (Euripides, *Helen* 652-653)

Le Diasema

Towards a dynamicized semantic map

- Our diachronic material allows us to add diachronic information (graphically, oriented edges) between frequent colexification patterns
  - **SUN** ⇒ DAY



Le Diasema

Towards a dynamicized semantic map

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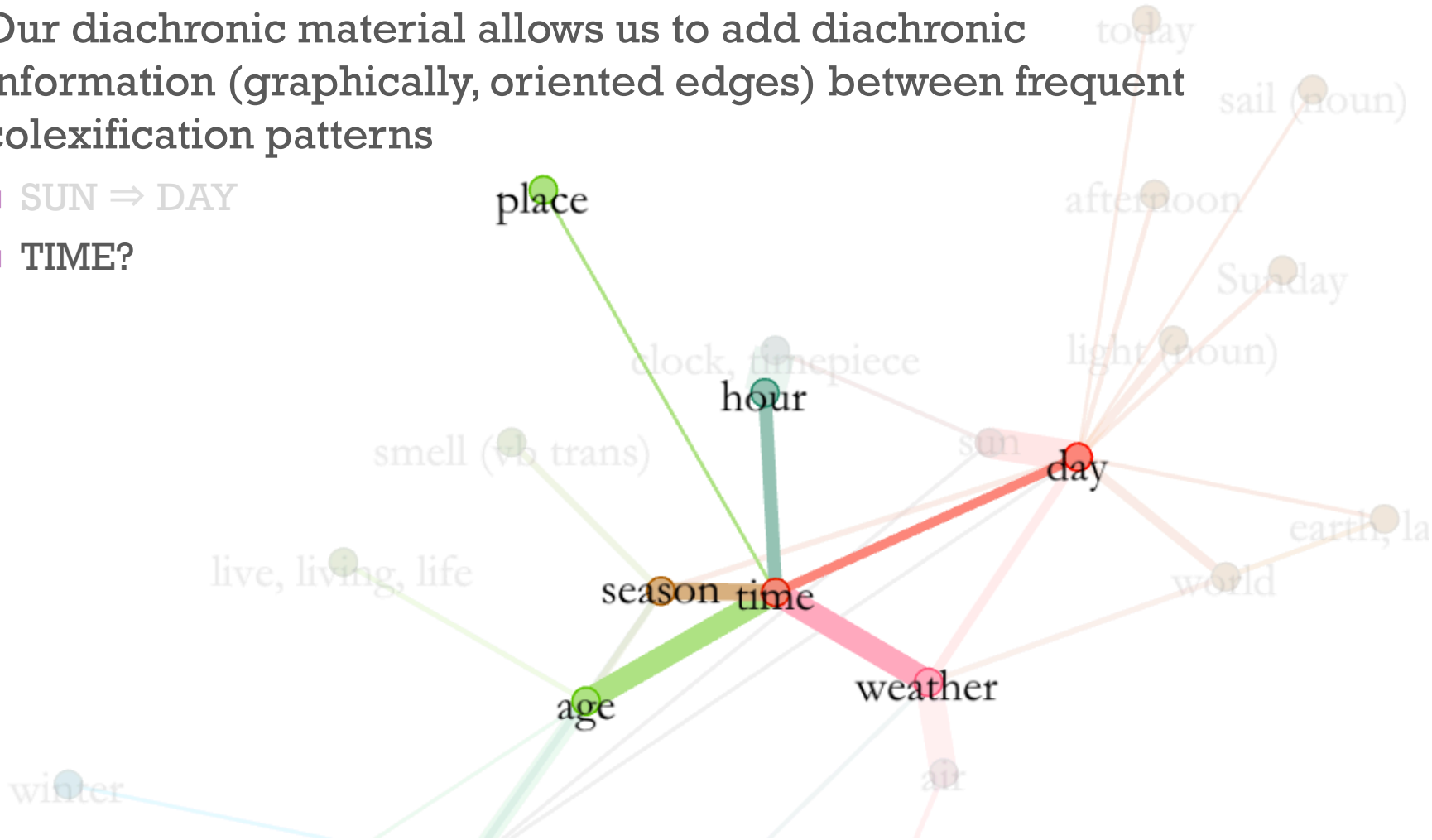
  - SUN ⇒ DAY
  - TIME?



Ancient Egyptian

 *nw* ‘hour/moment’ ⇒ ‘time’

Pyr., §1383b (Spell 556)

(3)

jw	*nw*	*pn*	*bk3*
come	**hour/moment**	DEM.M	second_day/tomorrow

‘When this **hour/moment** of tomorrow comes, (and this moment/hour of the third day comes, father Osiris Pepi …)’ (= Sethe 1910: 255)

P. Harris 500, v° 6,1

(4)

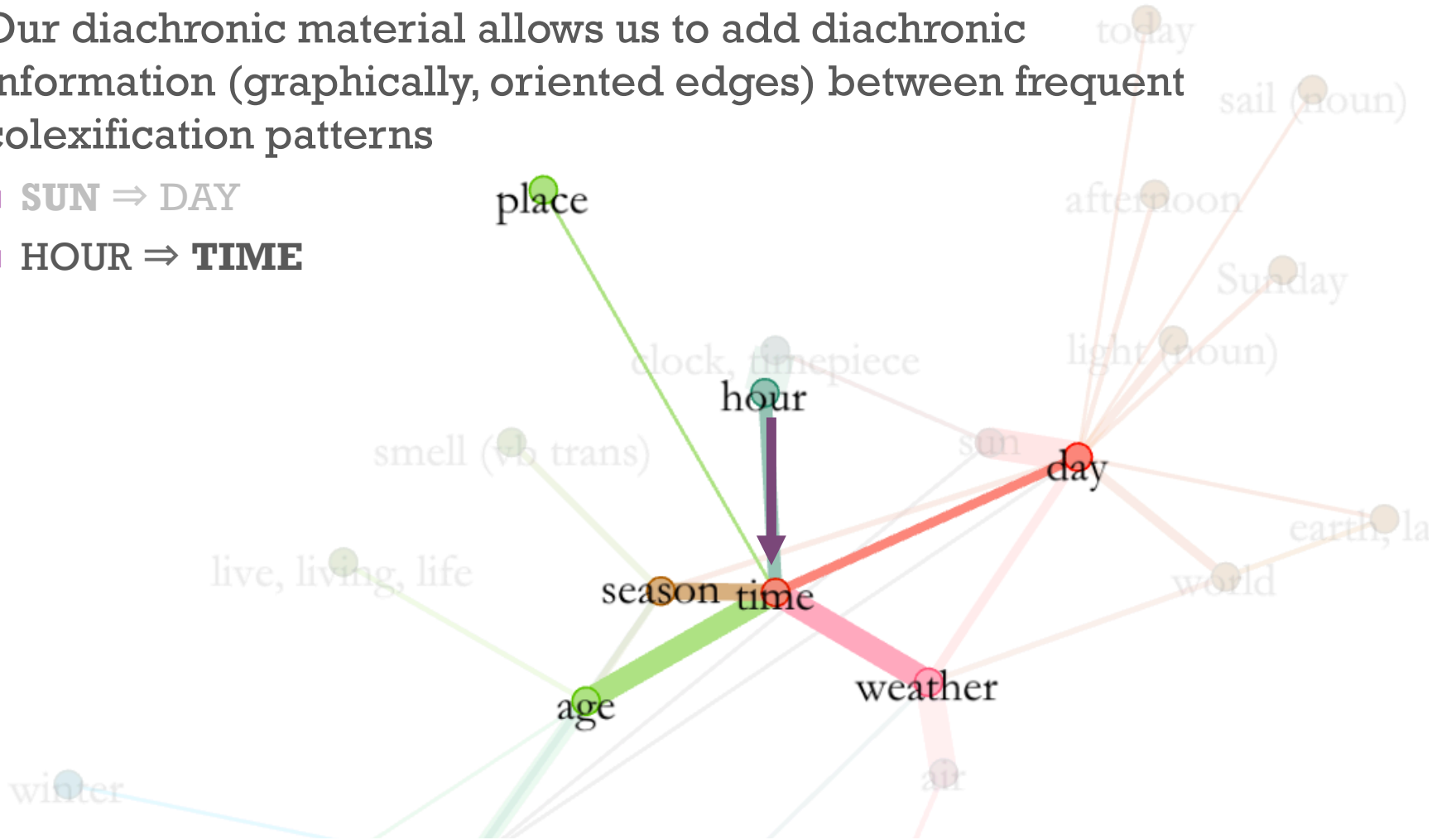
jw-n	*dy*	*ḥr*	*ir-t*	*nw*
SBRD-1PL	here	PROG	**do-INF**	**time**

‘(It’s been three full months) that we’re here **spending our time** [jumping]’ (= *LES* 4,6-7)

Le Diasema

Towards a dynamicized semantic map

- Our diachronic material allows us to add diachronic information (graphically, oriented edges) between frequent colexification patterns
  - **SUN** ⇒ DAY
  - HOUR ⇒ **TIME**



Ancient Egyptian

 *nw* ‘hour/moment’ ⇒ ‘time’ ⇒ ‘day(light)’

Coptic ⲛⲁⲩ (Crum 1959: 256-257)

- hour
- time
- **day(light) [rare]**

Le Diasema

Towards a dynamicized semantic map

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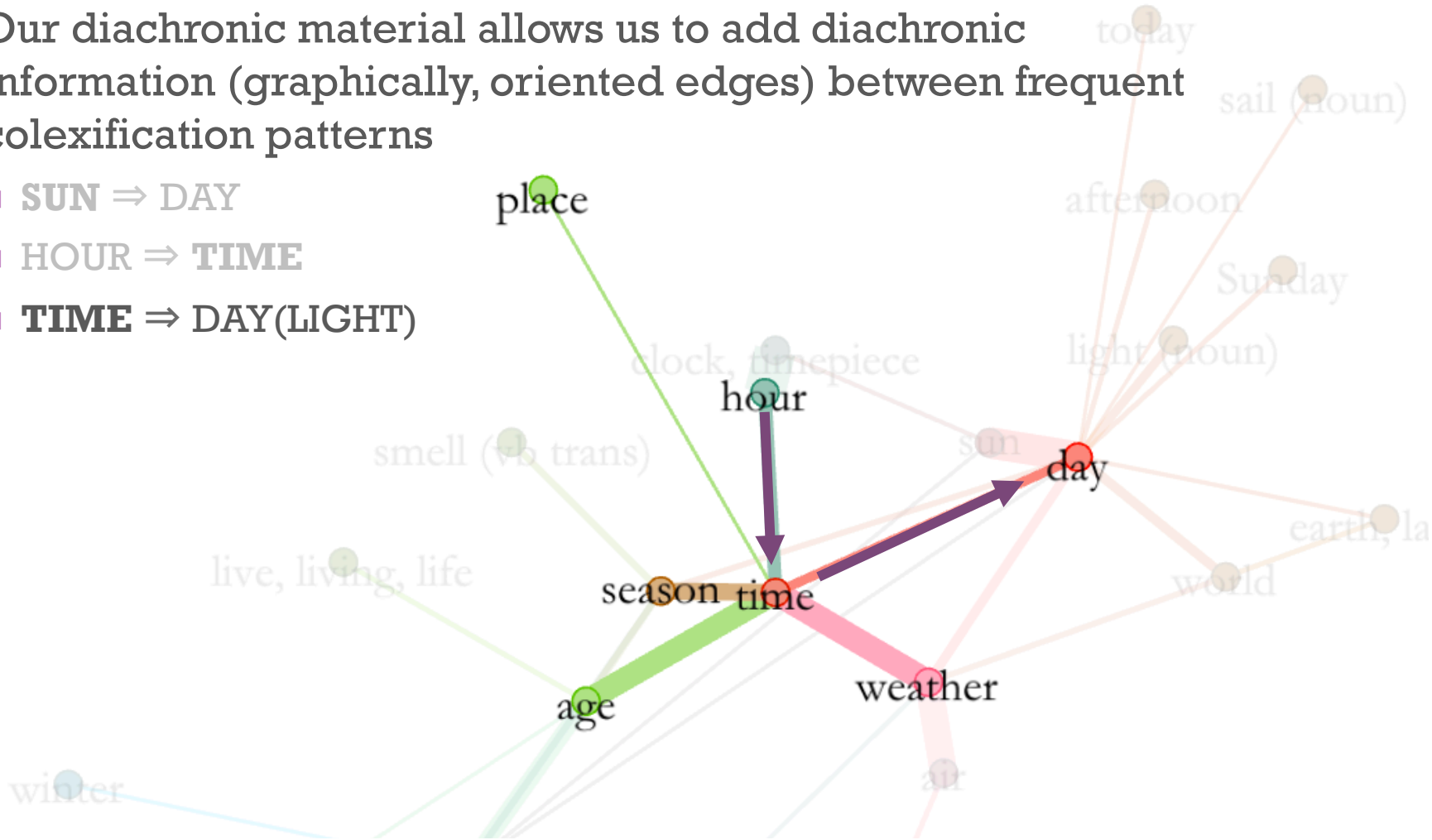
  - HOUR ⇒ **TIME**
  - **TIME** ⇒ DAY(LIGHT)



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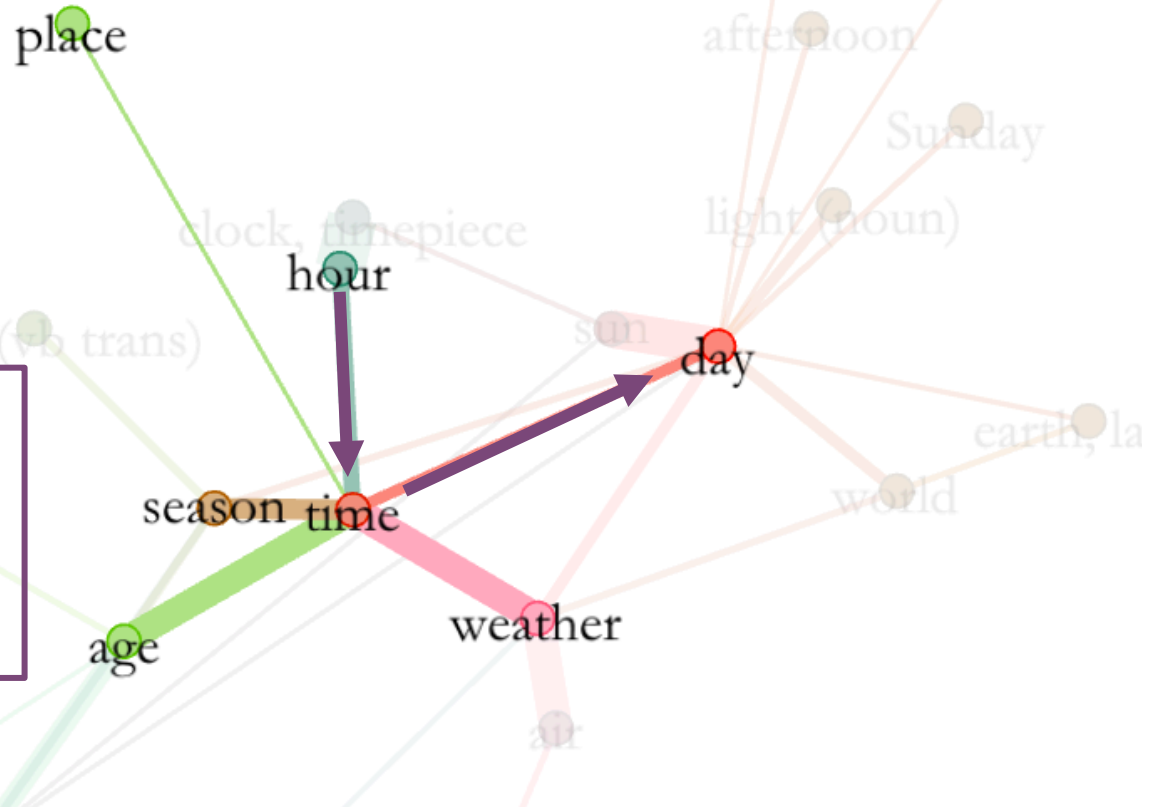

A recurring issue: English as metalanguage and the lack of (contextualized) definitions for the meanings in the typo-logical literature and resources

Le Diasema

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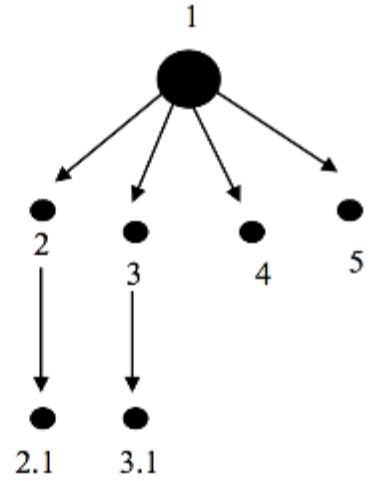
  - **SUN** ⇒ DAY
  - HOUR ⇒ **TIME**
  - **TIME** ⇒ DAY(LIGHT)

	Stage A	Stage B	Stage C
Duration	✓	✓	✓
Moment	–	✓	✓
Event	–	✓	✓
Matrix	–	✓	–
Agentive	–	✓	✓
Commodity	–	✓	✓
Measurement-system	–	–	–
Grammatical	–	–	✓

Table. The senses of *khrónos* in the diachrony of AG



1: The Duration Sense
2: Matrix Sense
2.1: Agent Sense
3: Moment Sense
3.1: Event Sense
4: Commodity Sense
5: Grammatical Sense

Figure. The radial structure of *khrónos* in AG

(Georgakopoulos & Piata 2012)

Le Diasema

Towards a dynamicized semantic map

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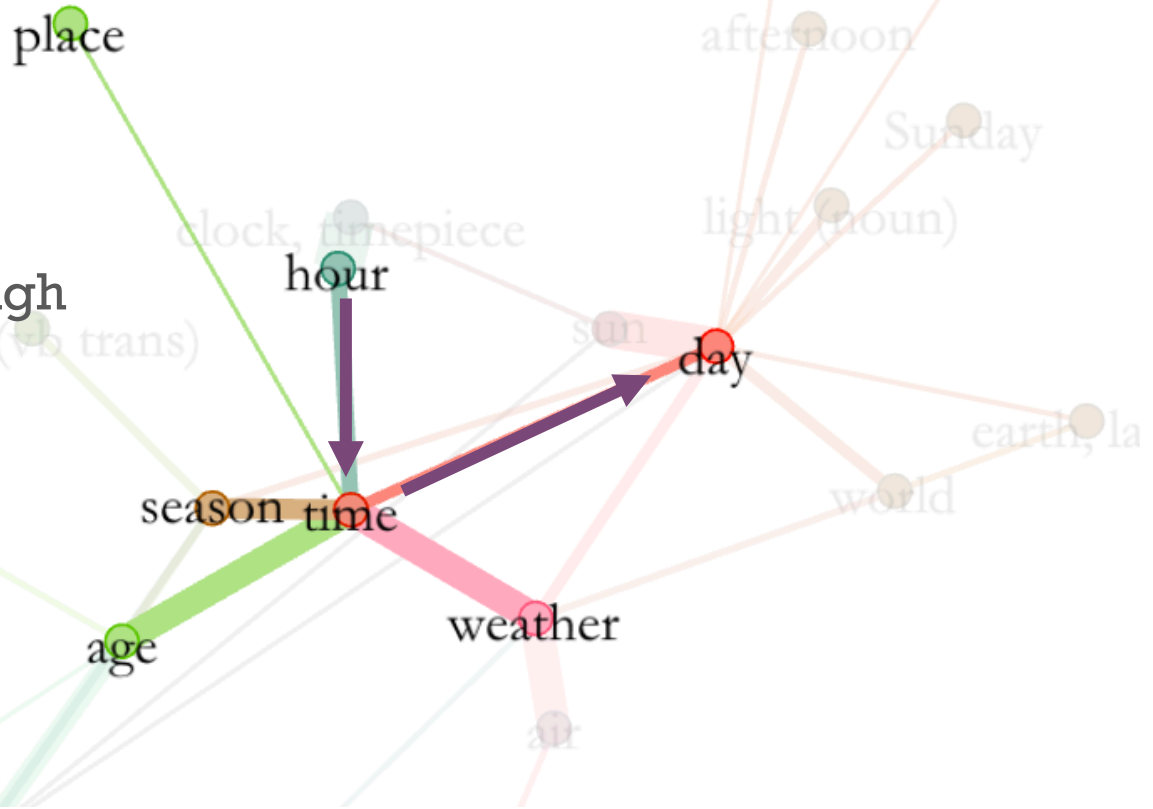
  - **SUN** ⇒ DAY
  - HOUR ⇒ **TIME**
  - **TIME** ⇒ DAY(LIGHT)
- Opposite pathways through pivot-meanings



Ancient Greek

hṓra 'season/time/moment'

(5) *hóssá* *te* *phúlla* *kaì* *ánthea*
REL.NOM.PL.N PTC leave:ACC.PL.N CONJ flower:ACC.PL.N

gígnetai ***hṓrēi***
become:PRS.3SG **season:DAT.SG.F**
'as are the leaves and the flowers in their **season**' (Homer, *Iliad* 2.468)

(6) *óphra* *Poseidáōni* *kaì* *állois* *athanátoisin*
CONJ Poseidon:DAT.SG.M CONJ other:DAT.PL immortal:DAT.PL

speísantes *koítoio* *medṓmetha:*
pour.libation:PART.AOR.NOM.PL.M bed:GEN.SG.M think.of:PRS.1PL.SUBJ.M/P

toîo *gàr* ***hṓrē***
dem.GEN.SG PTC **time:NOM.SG.F**
'that when we have poured libations to Poseidon and the other immortals, we may bethink us of sleep; for it is the **time** thereto' (Homer, *Odyssey* 3.333-334)

Le Diasema

Towards a dynamicized semantic map

- Our diachronic material allows us to add diachronic information (graphically, oriented edges) between frequent colexification patterns
  - SUN ⇒ DAY
  - HOUR ⇒ TIME
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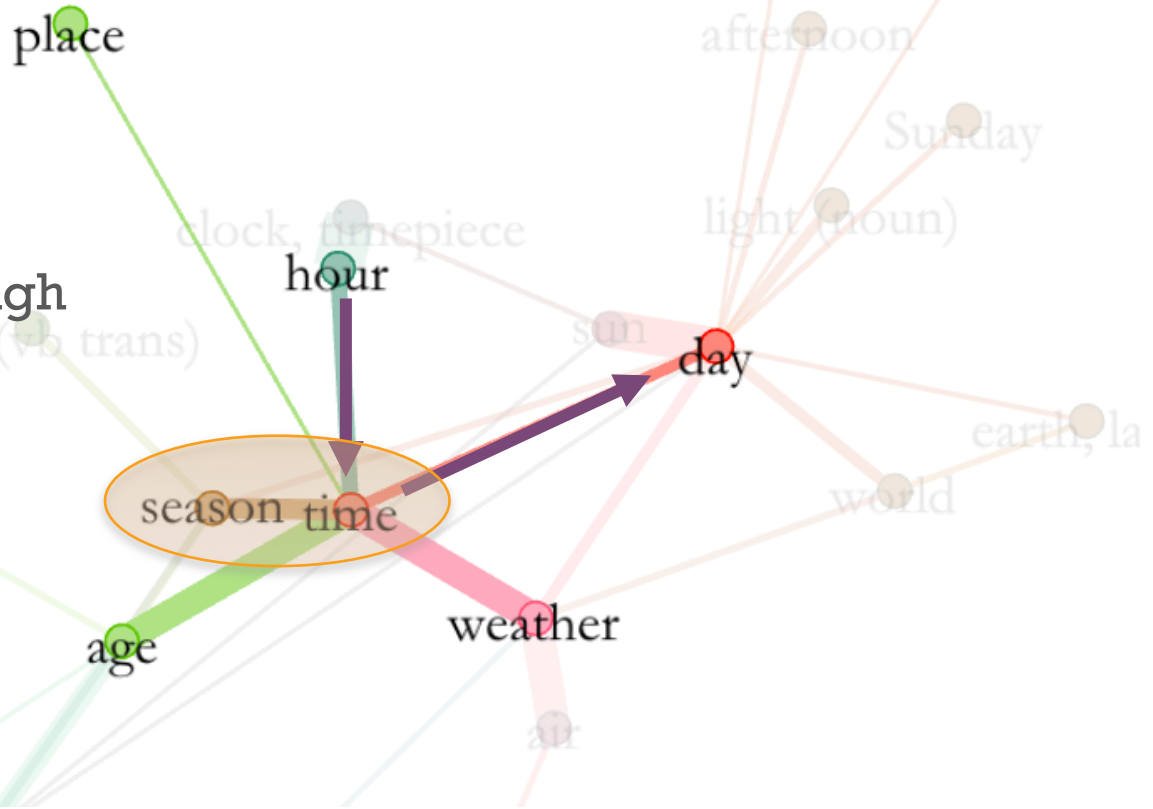

Ancient Greek

hṓra 'season/time/moment' ⇒ 'hour'

(7)

anastàs	*dè*	*prὸi*	*pseustheìs*
raise.up:PTCP.AOR.NOM.SG.M	PTC	early	deceive:PTCP.AOR.PASS.NOM.SG.M

tês	***hṓras***	*badízein*
ART.GEN.SG.F	**time:GEN.SG.F**	walk:PRS.INF

'He arose early, mistaking the **time/hour**, and started off on his walk' (Andocides, *On the Mysteries* 1.38)

(8)

oukhì	***dṓdeka***	***hôraì***	*eisin*	*tês*	*hēméras;*
NEG	**twelve**	**hour:NOM.PL.F**	be.PRS.3PL	ART.GEN.SG.F	day:GEN.SG.F

'Aren't there twelve hours of daylight?' (New Testament, John 11.9.2)

Le Diasema

Towards a dynamicized semantic map

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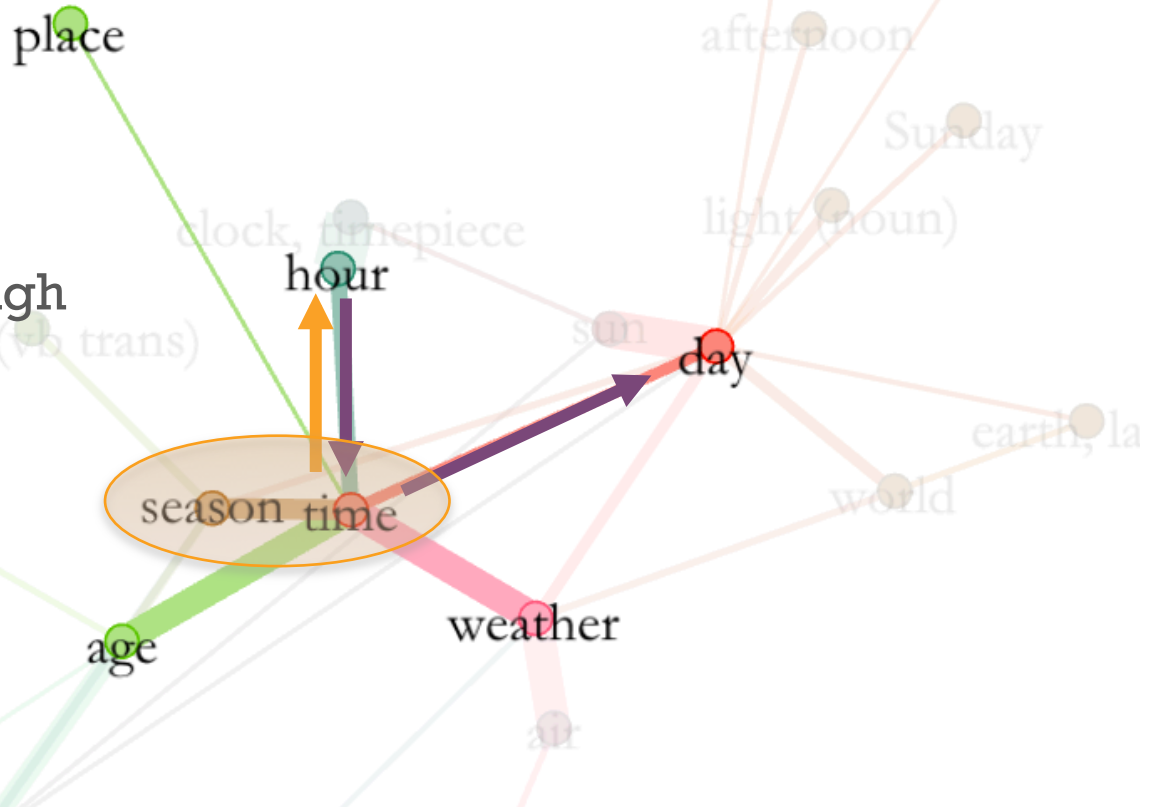


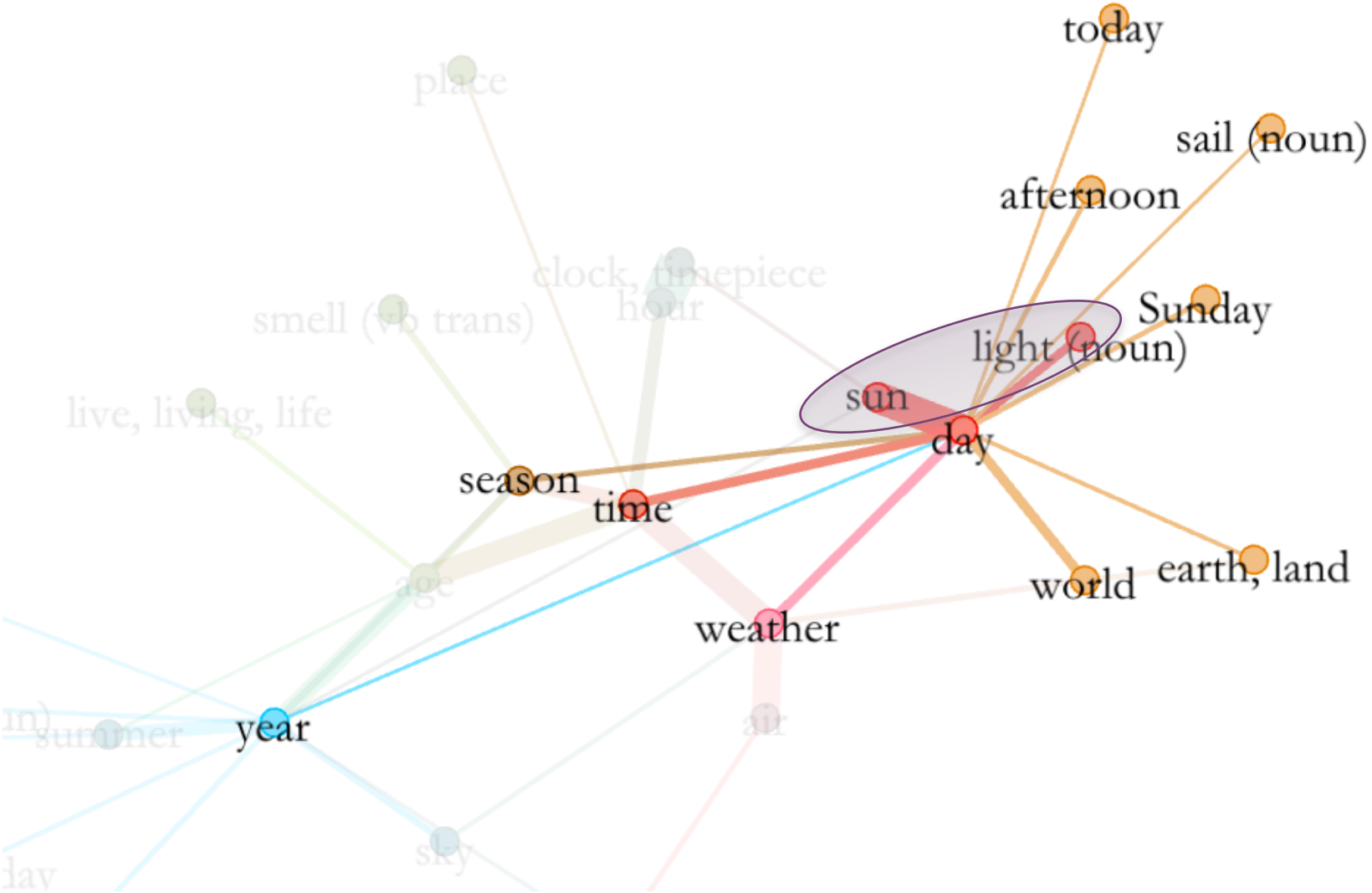
Le Diasema

Towards a dynamicized semantic map

- Our diachronic material allows us to add diachronic information (graphically, oriented edges) between frequent colexification patterns
  - SUN ⇒ DAY
  - HOUR ⇒ TIME
  - TIME ⇒ DAY(LIGHT)
- Opposite pathways through pivot-meanings
- Highlighting rare colexification patterns and pathways

Le Diasema

Towards a dynamicized semantic map



Ancient Egyptian

 *šw* ‘light/sunlight’ ⇒ ‘sun’

 *Teaching of Ani*, 23,13

(9)

iw	*ḥwi̯-f*	(*n*)	*šw*	*ḥ3b*(.*t*)
SBRD	3SG.M	to	**(sun)light**	shade

‘(…) after it (i.e., the wood) had been exposed (lit. thrown) to **light** and shade’ (= Quack 1996: 337)

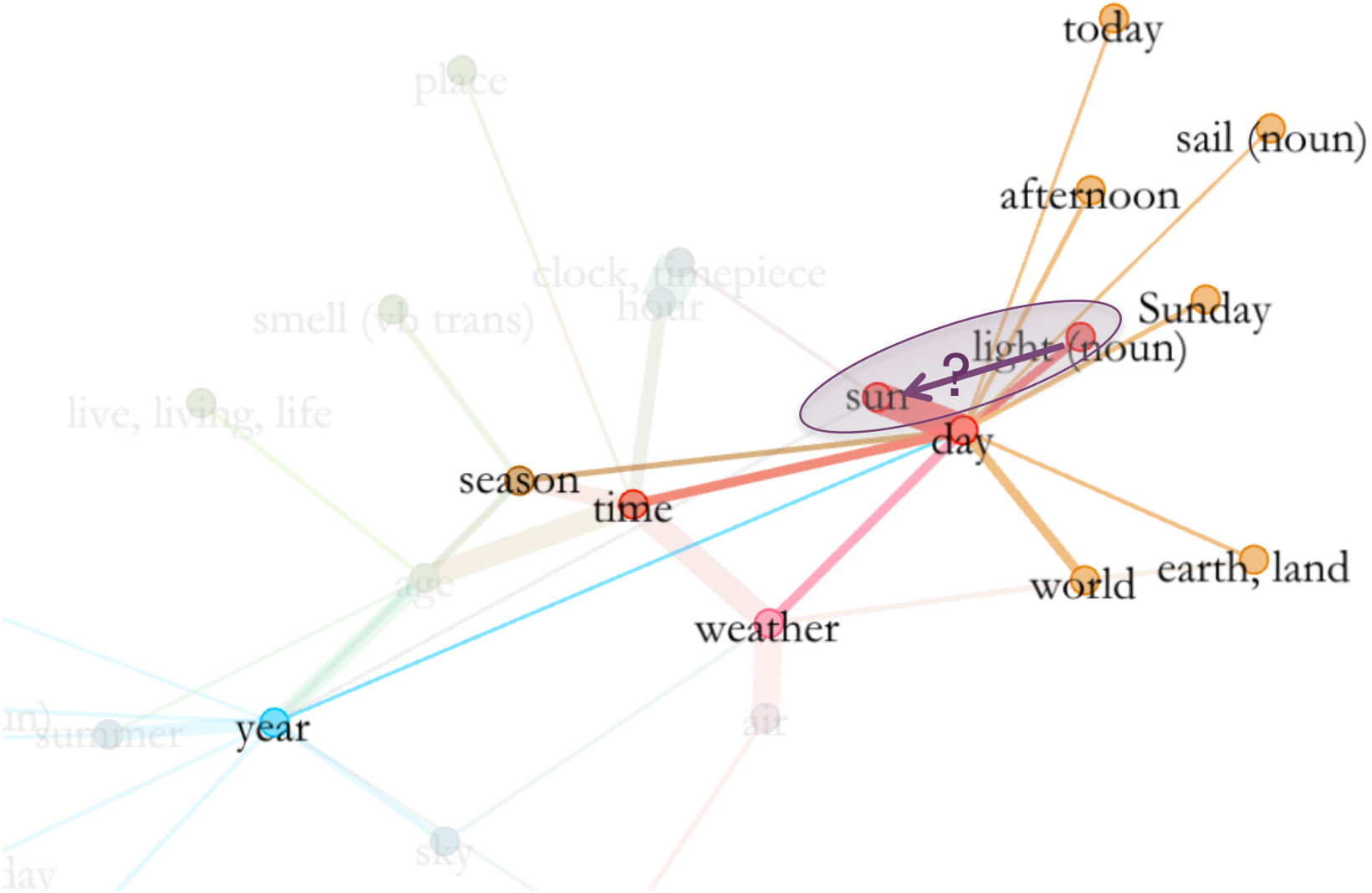
(10)

r-ṯnw	*wbn*	*p3*	*šw*	*ḥr*	*p3*	*ḏw*
SBRD	rise	**ART.M.SG**	**sun**	on	ART.M.SG	mountain

‘(…daily,) each time **the sun** rises over the mountain’ (= K*RI* VI, 336)

Le Diasema

Towards a dynamicized semantic map



Le Diasema

Towards a dynamicized semantic map

Found 4 colexifications for "light (noun)" and "sun". ?
Note that the number of attested colexifications may differ from the number of languages in which the colexifications were attested.

Nr.	Language	ISO	Family	Source	Form
1	Kaingang	kgp	Macro-Ge	IDS	rãrĩr
2	Kaingang	kgp	Macro-Ge	IDS	rɛ̃rĩr
3	Wichí Lhamtés Güisnay	mzh	Mataco-Guaicuru	WOLD	fwala
4	Selkup	sel	Uralic	IDS	čʸelɨ

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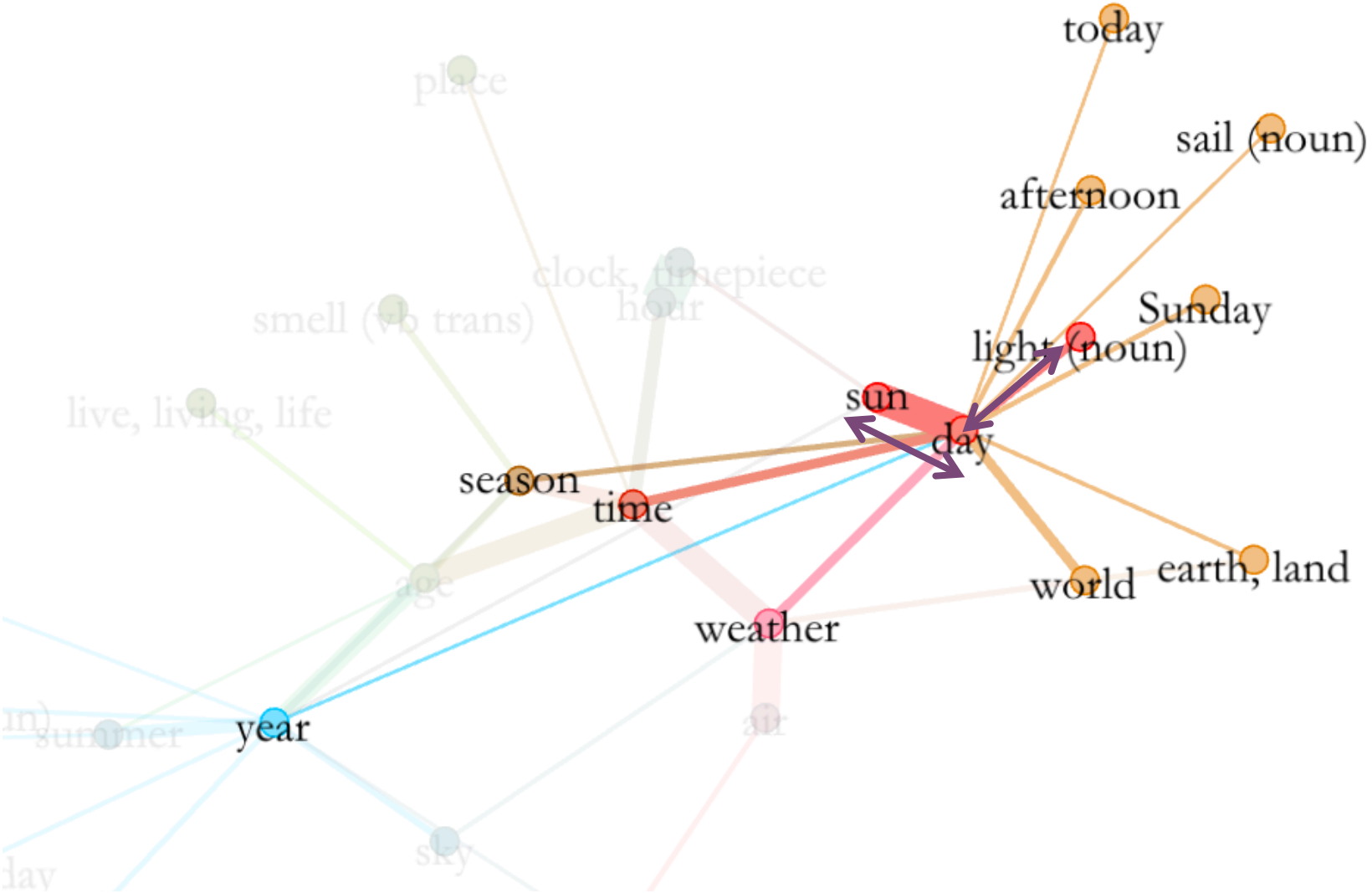

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4	Selkup	sel	Uralic	IDS	čʸeli

14.410	day	Time	kurã	Phonemic

Conclusions

and avenues for future research

Conclusions

- We incorporated the diachronic dimension into semantic maps of content words, which is an important extension to the semantic maps research
- We emphasized the need to inform semantic maps with data from diachronic semantic change (cf. the Catalogue of Semantic Shifts)
- Our case study: the semantic extension of time-related lexemes
  - Replicable methodology
  - Balance between large-scale typological works and small-scale linguistic studies, focusing on few languages
  - Language-specific studies lead to more fine-grained semantic maps (correlated with contextualized meaning)
    - These do not cancel the maps which are constructed using data from large databases, but rather complement and enrich them

Avenues for future research

- (Ancient) culture specific colexification patterns

Avenues for future research

- (Ancient) culture specific colexification patterns
  - **Summer?**

There are 17 links involving the concept "summer": ?

Concept	IDS-Key	Occurrences	Families	Languages	Network		Forms
year	14.73	233	10	16	COM	SUB	FORMS
age	14.12	257	2	3	COM	SUB	FORMS
bow	20.24	231	2	2	COM	SUB	FORMS
spring	14.75	174	2	3	COM	SUB	FORMS
autumn	14.77	167	1	1	COM	SUB	FORMS
cave	1.28	256	1	1	COM	SUB	FORMS
cousin	2.55	346	1	1	COM	SUB	FORMS
hang up	9.341	280	1	1	COM	SUB	FORMS
hot	15.85	303	1	1	COM	SUB	FORMS
put	12.12	306	1	1	COM	SUB	FORMS
rain (noun)	1.75	257	1	1	COM	SUB	FORMS
reach, arrive	10.55	329	1	1	COM	SUB	FORMS
rise	10.21	334	1	1	COM	SUB	FORMS
season	14.78	193	1	1	COM	SUB	FORMS
sun	1.52	245	1	1	COM	SUB	FORMS
wall	7.27	239	1	1	COM	SUB	FORMS
wine	5.92	162	1	1	COM	SUB	FORMS

Ancient Greek

théros 'summer' ⇒ 'harvest'

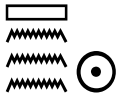
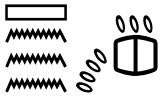
(11) *autàr* *epèn* *élthēisi* ***théros*** *tethaluîá*
PTC when come:AOR.SUBJ.3SG **summer:NOM.SG.M** thrive:PART.PERF.NOM.SG.F
t' *opṓrē*
PTC autumn:NOM.SG.F

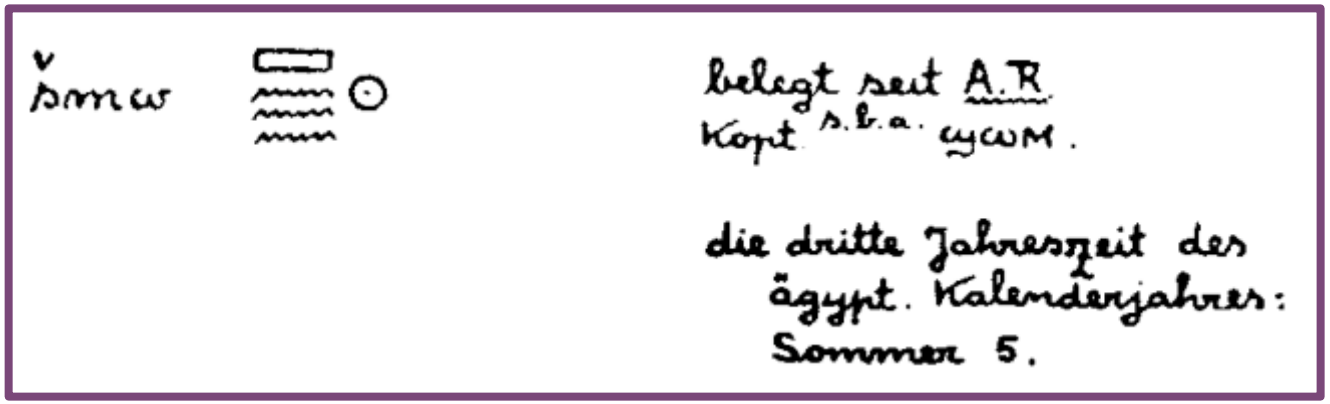
'But when **summer** comes and rich autumn' (Homer, Odyssey 11.192)

(12) *kâit'* *anèr* *édoksen* *eînai,* *tallótrion*
ADV man:NOM.SG.M seem:AOR.3SG be.INF another:GEN.SG
amôn ***théros***
reap.corn:PTCP.PRS.NOM.SG.M **summer:ACC.SG.N**

'he has only made himself a name by reaping another's **harvest**' (Aristophanes, Knights 392)

Ancient Egyptian

 *šmw* ‘summer’ ⇒  *šmw* ‘harvest’



Avenues for future research

- (Ancient) culture specific colexification patterns
  - Summer ⇒ Harvest

Avenues for future research

- (Ancient) culture specific colexification patterns
  - Summer ⇒ Harvest
- Languages and constructions shaping specific polysemy patterns
  - Time ⇒ Proximity

Avenues for future research

Peasant, B1, 103-104

(13) *m* *rk* *ḥm-f* *nswt-bity* *nb-kꜣw-rᶜ*

in **time** Majesty-3SG.M King of U. and L. Egypt Nebkaure

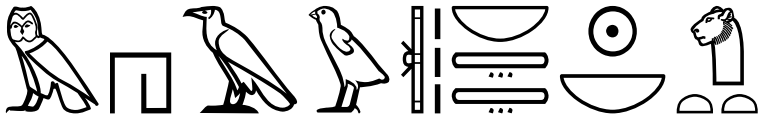
‘(Now, the peasant spoke these word) **during the time** of his Majesty, the King of Upper and Lower Egypt, Nebkaure (the justified)’ (= Parkinson 1991: 19)

(14) *sbty* *ḏr* *m* *rk* *mšᶜ-f* (= K*RI* II, 6,8)

rampart strong **in** **proximity** army-3SG.M

(speaking of the King who is)
‘A strong rampart around his army, (their shied in the day of fighting)’

Avenues for future research



Biography of Ahmose, 5

(15) *m* *h3w* *nb* *t3-wj* *nb-ph.tj-rˁ*

in **time** lord land-DU Nebphtire

(And then I became a soldier (…),)
'**during the time** of the lord of the Two Lands, Nebpehtire (justified, when I was a young man, not having a wife yet)' (= *Urk*. IV, 2,13)

Sinuhe, B8

(16) *m* *h3w* *nh.t*

in **proximity** Sycamore

'(I crossed the place called The Two Truths,) **in the vicinity** of The Sycamore" (and I landed at The Island of Snefru)' (= Koch 1990: 14)

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Thanks!

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