

# A Linguistic Perspective on Emotions

## Egyptian data in typological perspective

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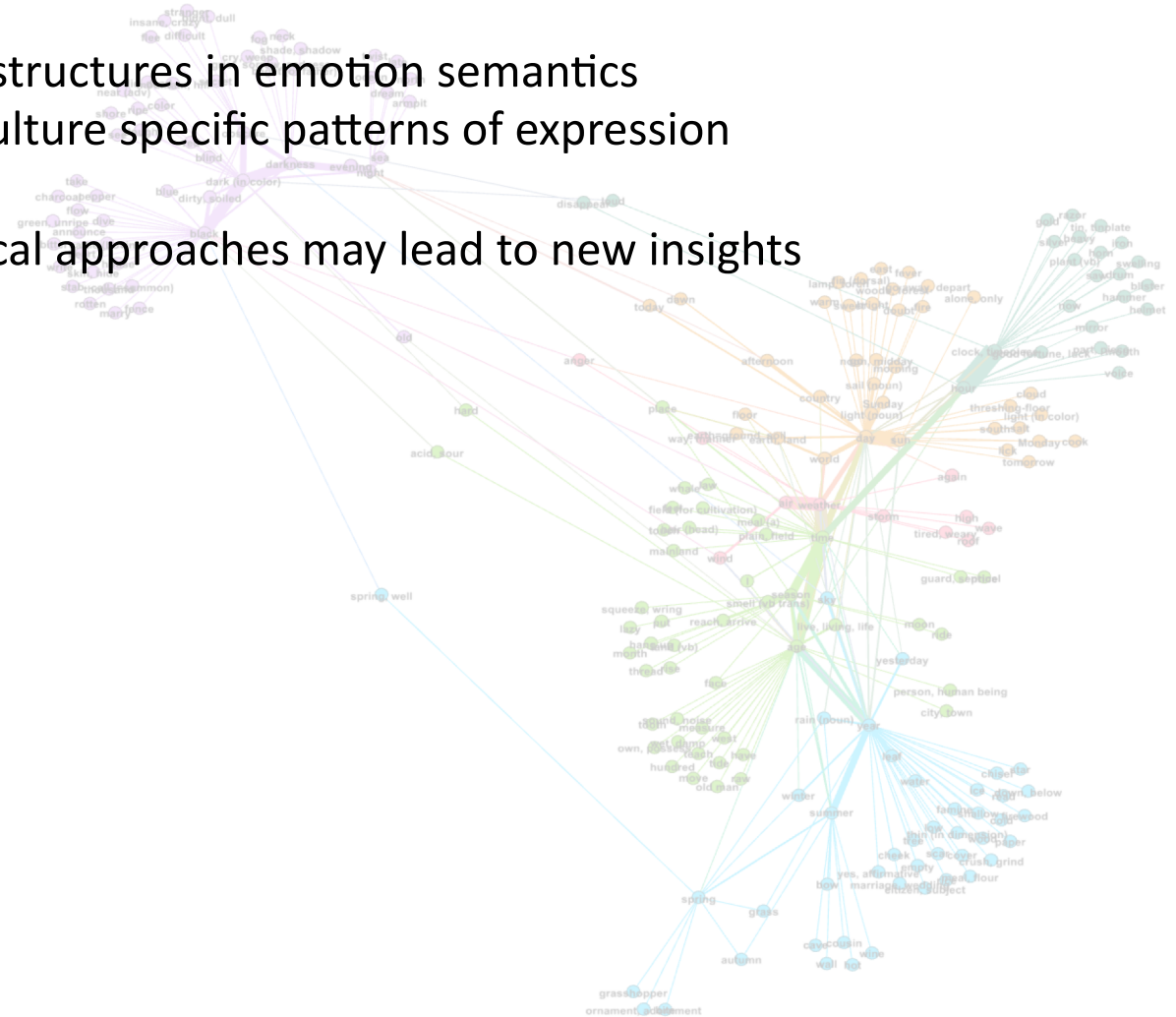


17.12.2019

*Visualiser les émotions dans l'Égypte ancienne : images et textes*

# Goal of the talk

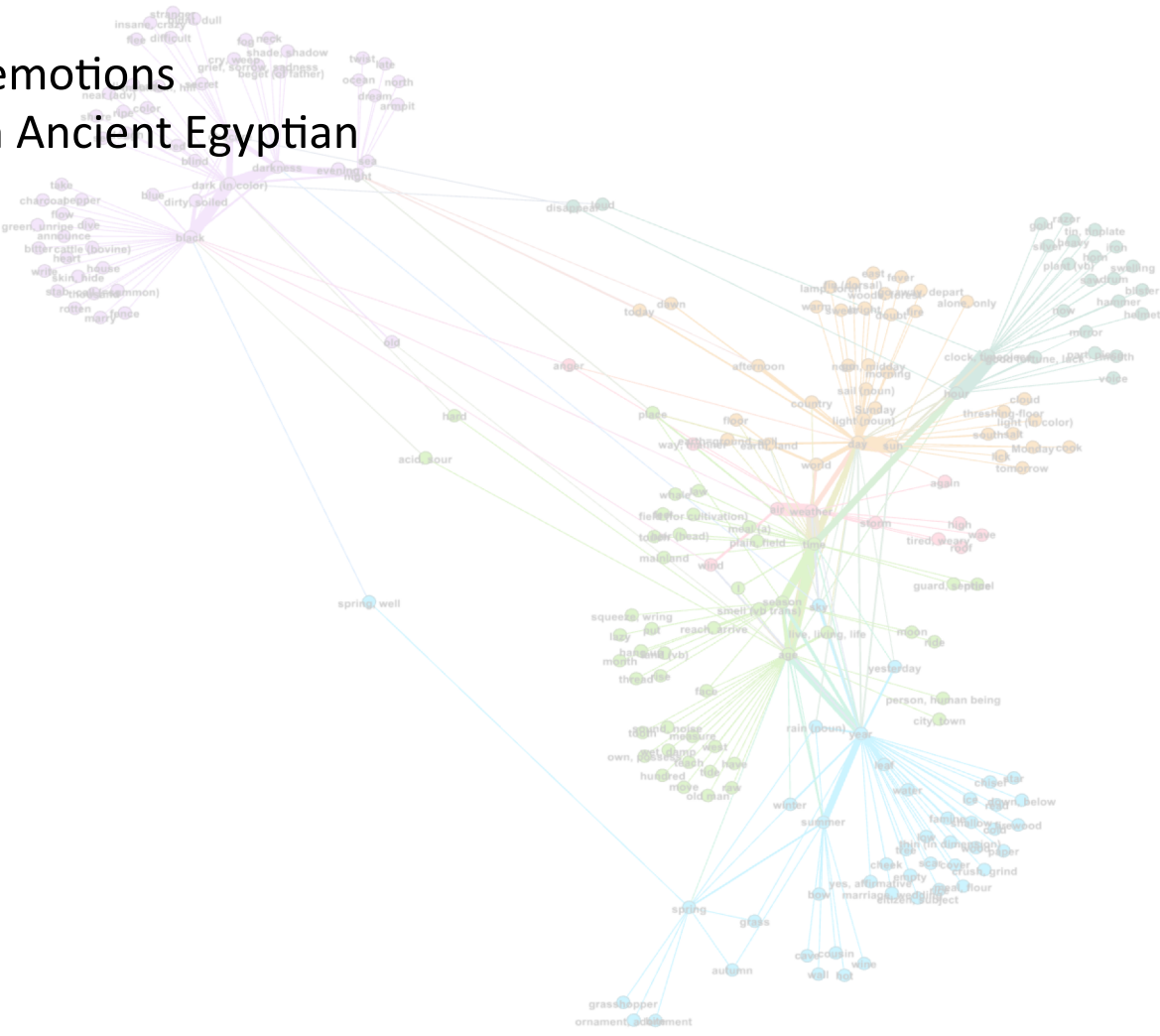
- To showcase (visual) methods
  - for identifying universal structures in emotion semantics
  - for unveiling language/culture specific patterns of expression
- To demonstrate that typological approaches may lead to new insights for Egyptian philology



# Outline of the talk

## ➤ Introduction

- Linguistic approaches to emotions
- Expressions of emotion in Ancient Egyptian



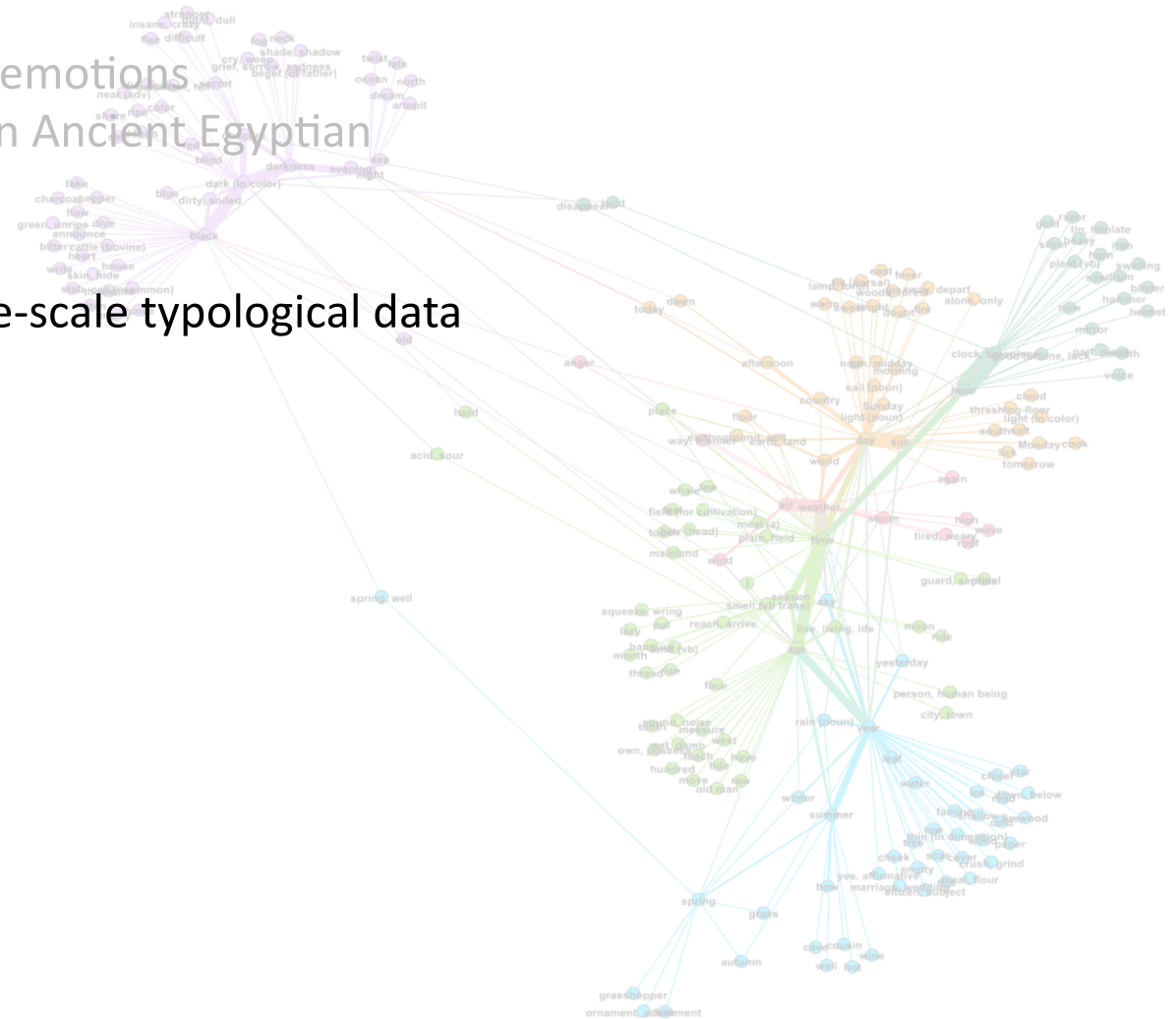
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- Linguistic approaches to emotions
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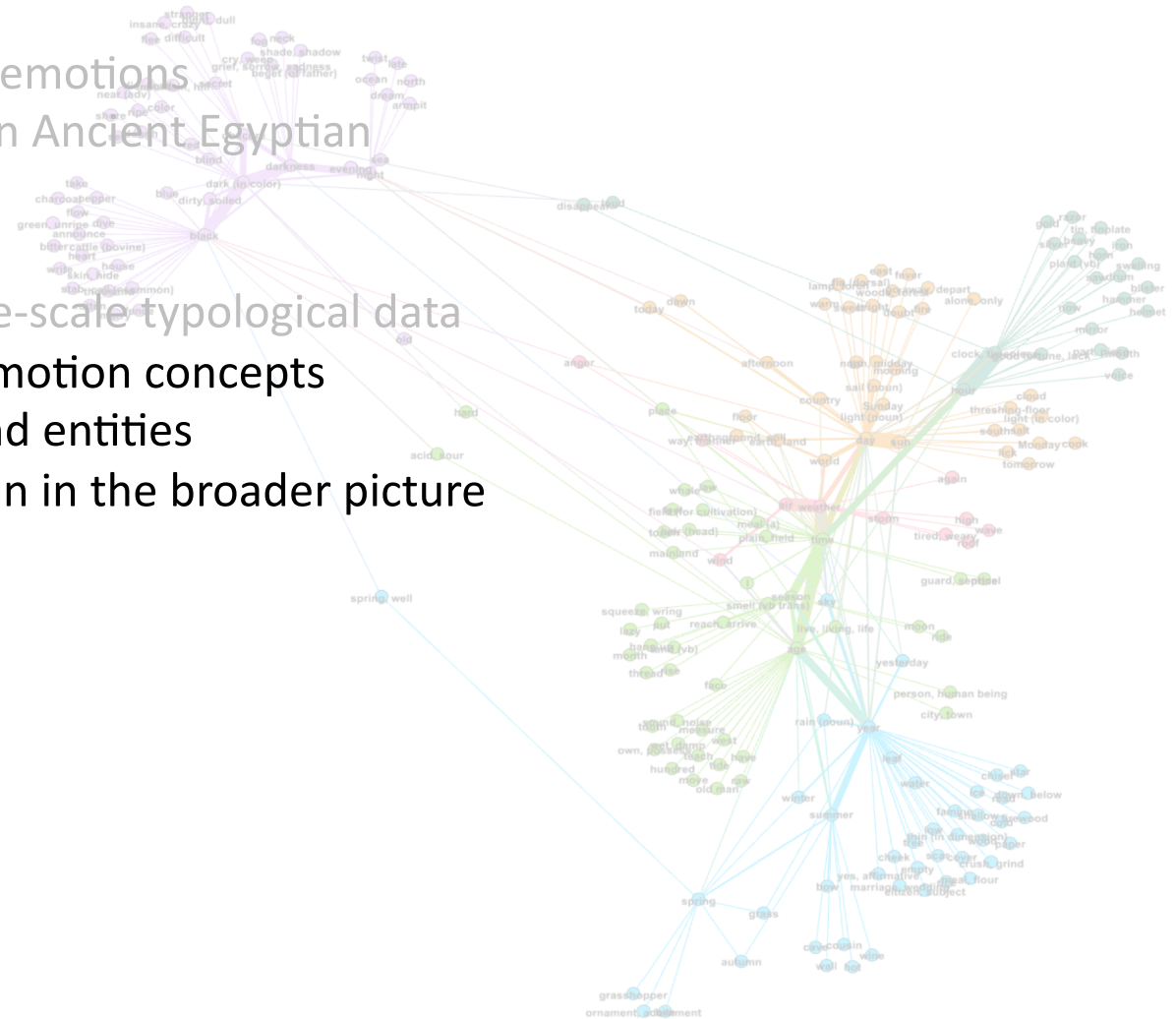
## ➤ Semantic maps

- Basic principles
- Inferring maps from large-scale typological data



# Outline of the talk

- Introduction
  - Linguistic approaches to emotions
  - Expressions of emotion in Ancient Egyptian
- Semantic maps
  - Basic principles
  - Inferring maps from large-scale typological data
- Towards a semantic map of emotion concepts
  - Properties, processes, and entities
  - Situating Ancient Egyptian in the broader picture
- Conclusions





# Languages and emotions

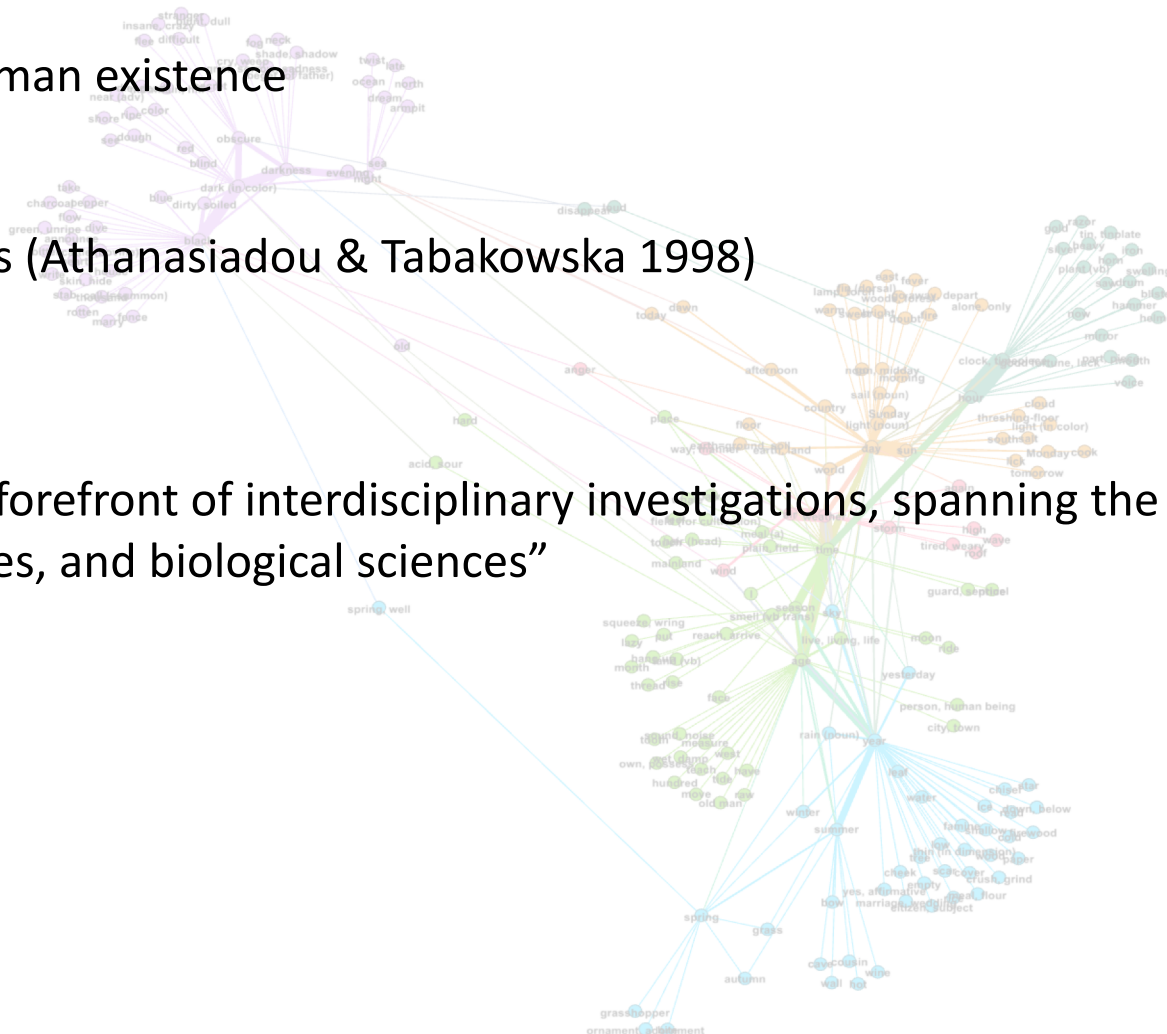
# Languages and emotions – Linguistics

## ➤ Emotions

- Important element of human existence
- People feel emotions
- People express emotions
- People speak of emotions (Athanasiadou & Tabakowska 1998)

## ➤ Already in 1999:

- “Feelings are now at the forefront of interdisciplinary investigations, spanning the humanities, social sciences, and biological sciences” (Wierzbicka 1999: 1)



# Languages and emotions – Linguistics

## ➤ Words and emotions

(Kövecses 1995)

### 1. Expressive vs. descriptive emotion words

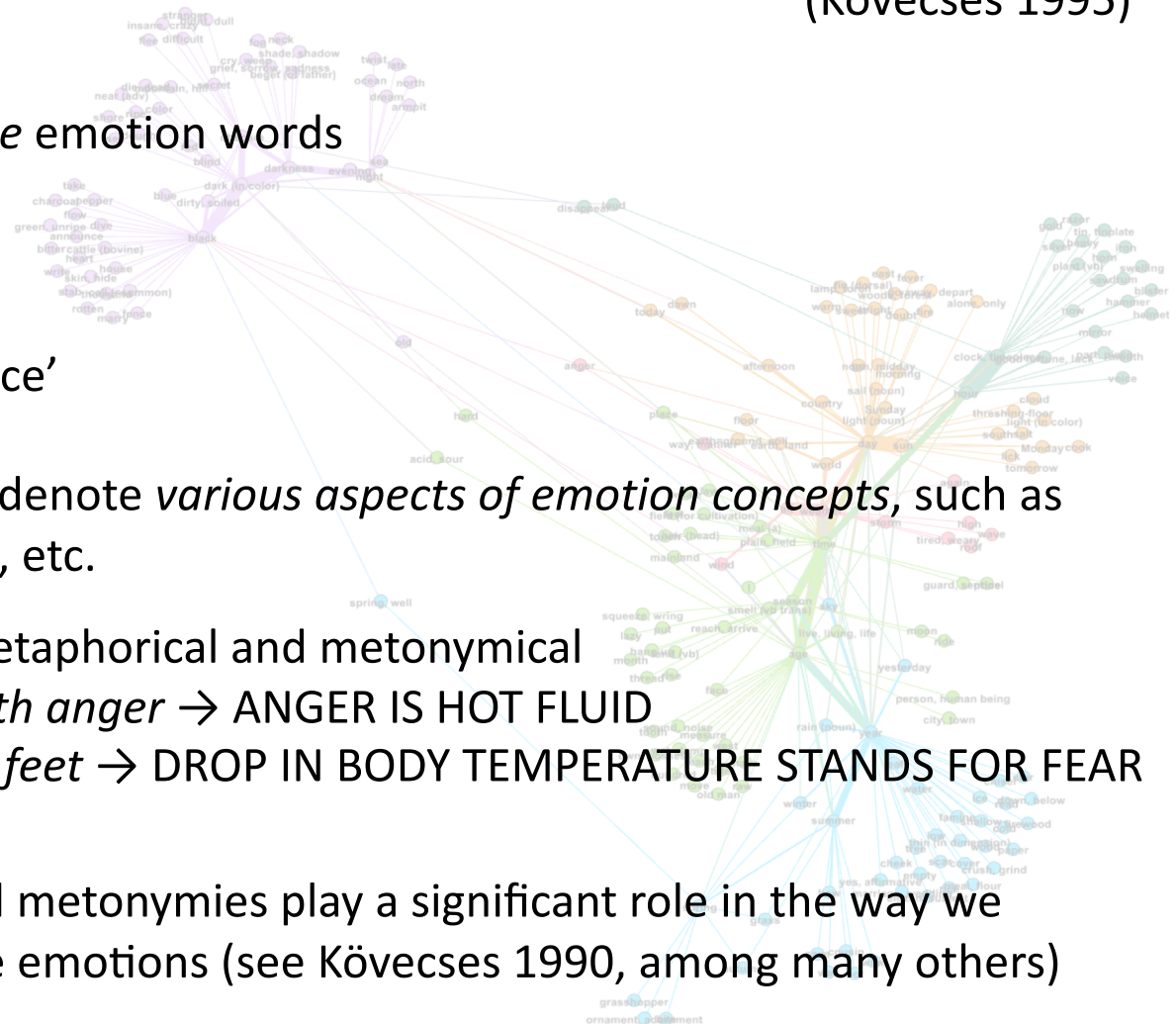
- 'wow' vs. 'joy'

### 2. Basic vs. non basic

- 'anger' vs. 'annoyance'

### 3. Words and expressions denote *various aspects of emotion concepts*, such as intensity, cause, control, etc.

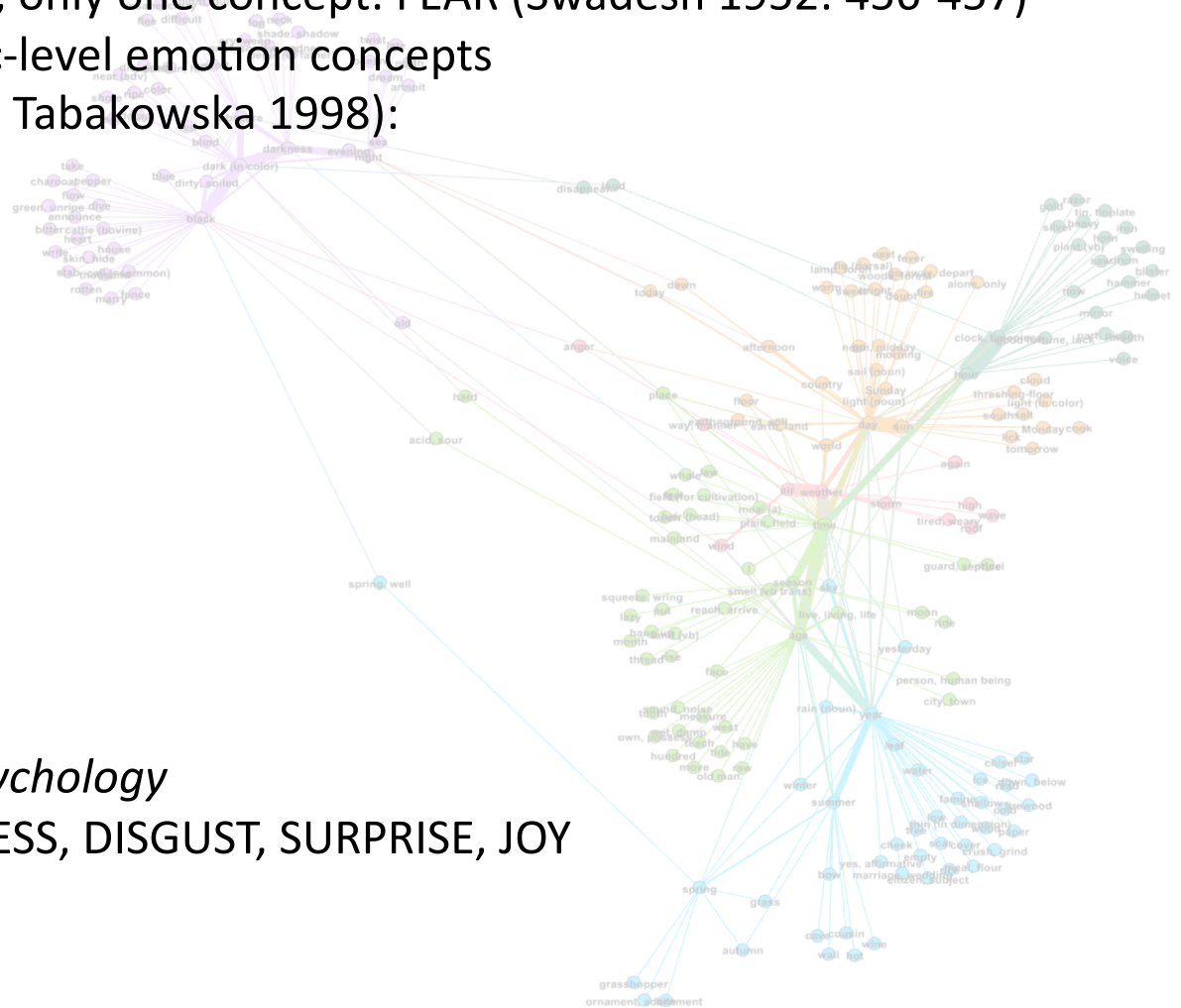
- They can be metaphorical and metonymical
  - *Boiling with anger* → ANGER IS HOT FLUID
  - *Have cold feet* → DROP IN BODY TEMPERATURE STANDS FOR FEAR
- Metaphors and metonymies play a significant role in the way we conceive of the emotions (see Kövecses 1990, among many others)





# Languages and emotions – Linguistics

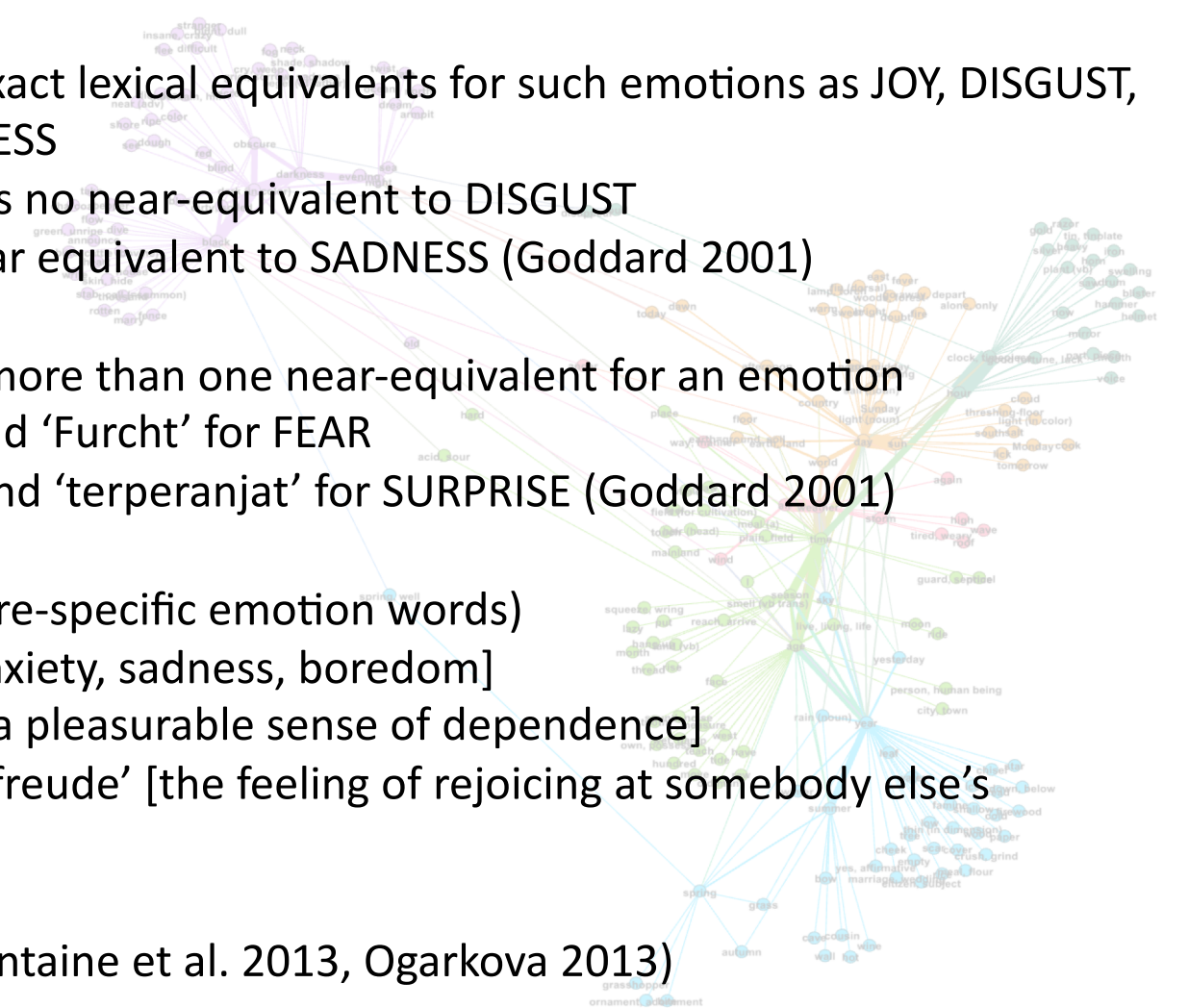
- In the Swadesh 200-word list, only one concept: FEAR (Swadesh 1952: 456-457)
  - cf. Kövecses' (1990) basic-level emotion concepts (see also Athanasiadou & Tabakowska 1998):
    - FEAR
    - ANGER
    - PRIDE
    - RESPECT
  - Wierzbicka (1999):
    - FEAR-like
    - ANGER-like
    - SHAME-like
  - Ekman (1992; 1993) — *Psychology*
    - FEAR, ANGER, SADNESS, DISGUST, SURPRISE, JOY



# Languages and emotions – Linguistics

- The issue of translatability
  - Some languages lack exact lexical equivalents for such emotions as JOY, DISGUST, FEAR, SURPRISE, SADNESS
    - *Yankunytjatjara* has no near-equivalent to DISGUST
    - *Tahitian* has no near equivalent to SADNESS (Goddard 2001)
  - Some languages have more than one near-equivalent for an emotion
    - *German* 'Angst' and 'Furcht' for FEAR
    - *Malay* 'terkejut' and 'terperanjat' for SURPRISE (Goddard 2001)
  - Untranslatability (culture-specific emotion words)
    - *Russian* 'tosca' [anxiety, sadness, boredom]
    - *Japanese* 'amae' [a pleasurable sense of dependence]
    - *German* 'Schadenfreude' [the feeling of rejoicing at somebody else's misfortunes]

(for overviews, see Fontaine et al. 2013, Ogarkova 2013)



# Languages and emotions – Linguistics

**Note:** “what language X expresses simply is also expressible in language Y but at the price of some complexity”

(von Fintel & Matthewson 2008: 144)

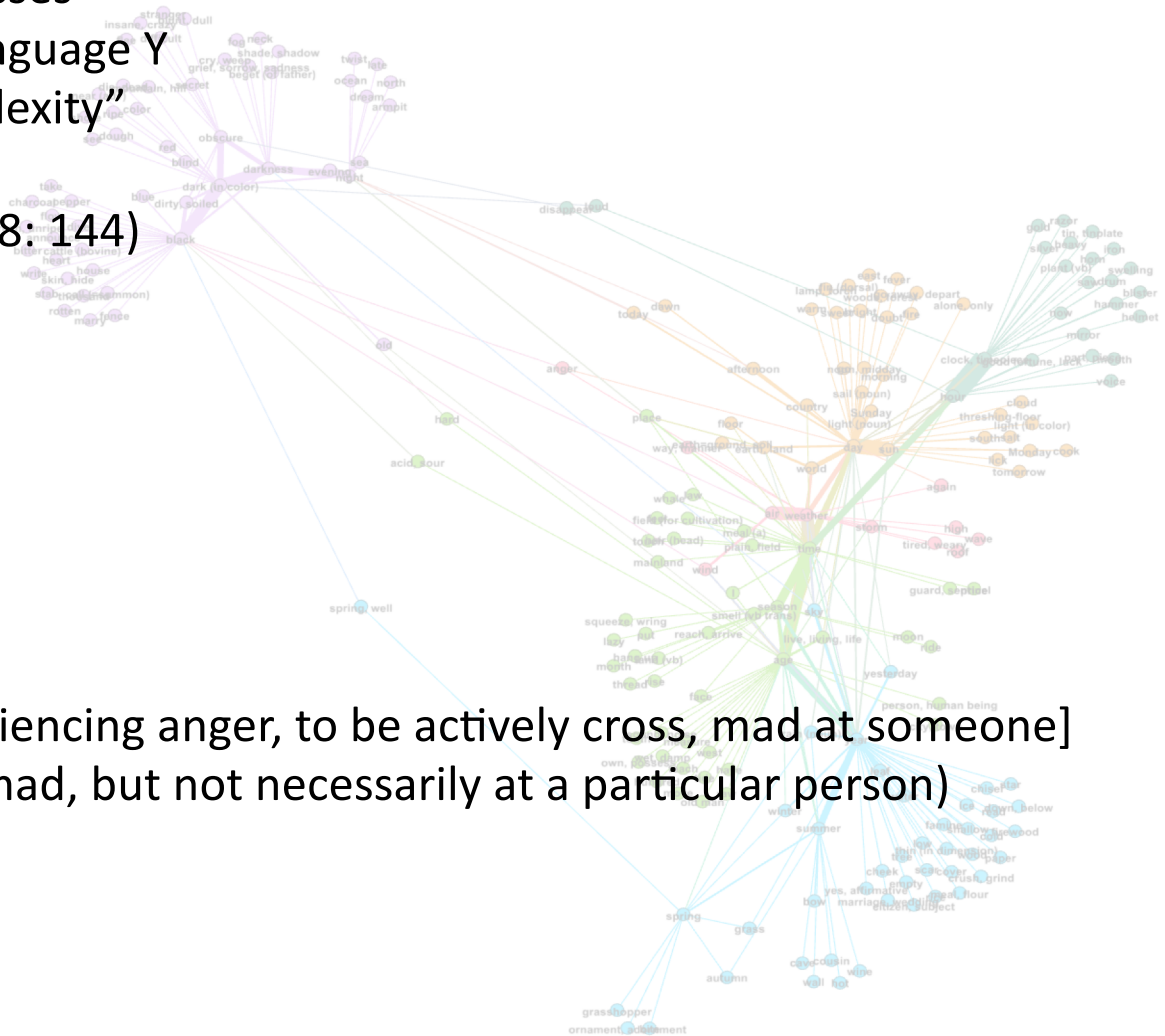
English  
'anger'



Russian

'serdit'sja' [To be experiencing anger, to be actively cross, mad at someone]  
'zlit'sya' [To be angry, mad, but not necessarily at a particular person]

(Pavlenko 2008)



# Languages and emotions – Linguistics

- Universal **vs.** culture specific



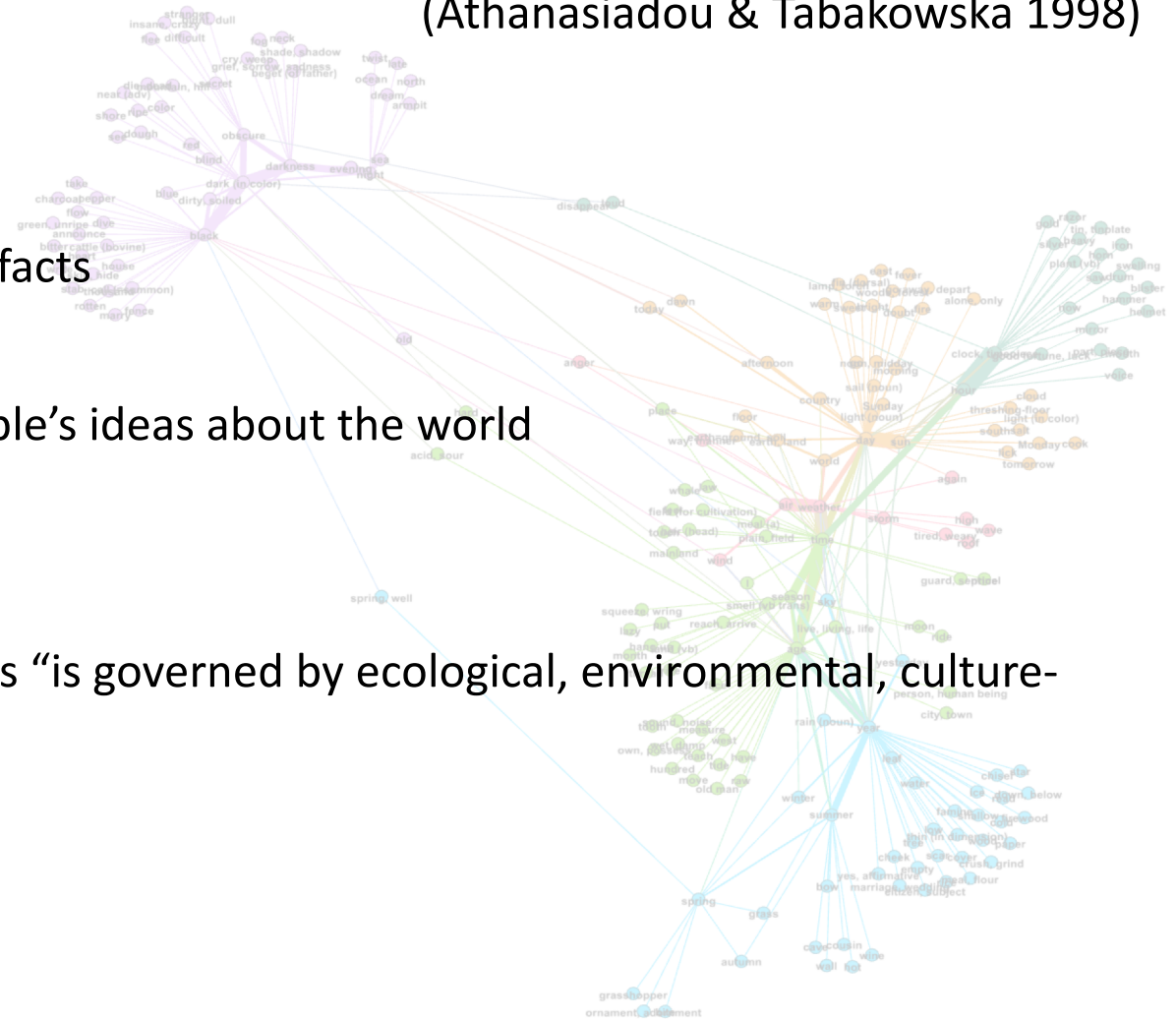
Conceptualizations based on real facts

**vs.**

Conceptualizations based on people's ideas about the world

- Conceptualization of emotions “is governed by ecological, environmental, culture-specific and universal factors”

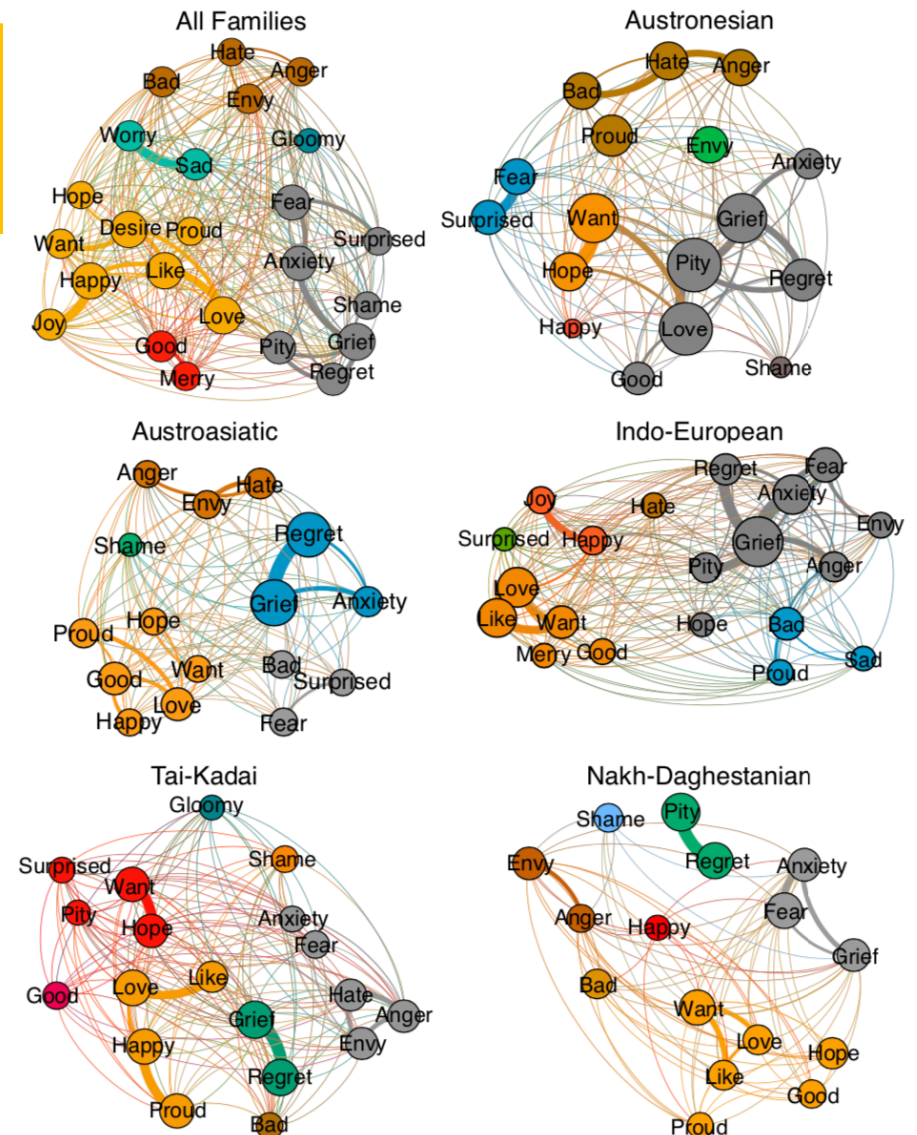
(Athanasiadou & Tabakowska 1998)



# Languages and emotions – Linguistics

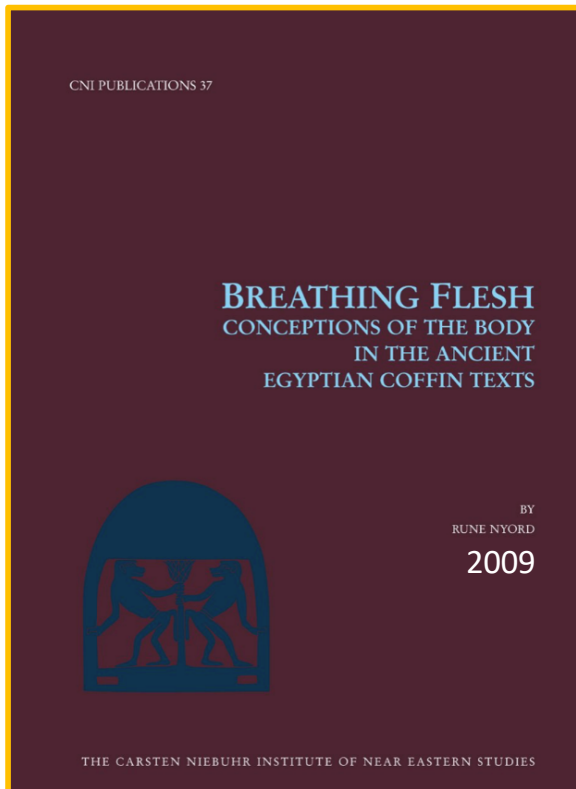
Jackson et al. *to appear*.  
“Variation and Structure in Emotion Semantics  
Across a Global Sample of Languages”

- Emotion concepts vary in meaning across cultures, but not without limit
- Geographically closer languages co-express emotion concepts in more similar ways than geographically distant languages





# Languages and emotions – Ancient Egyptian



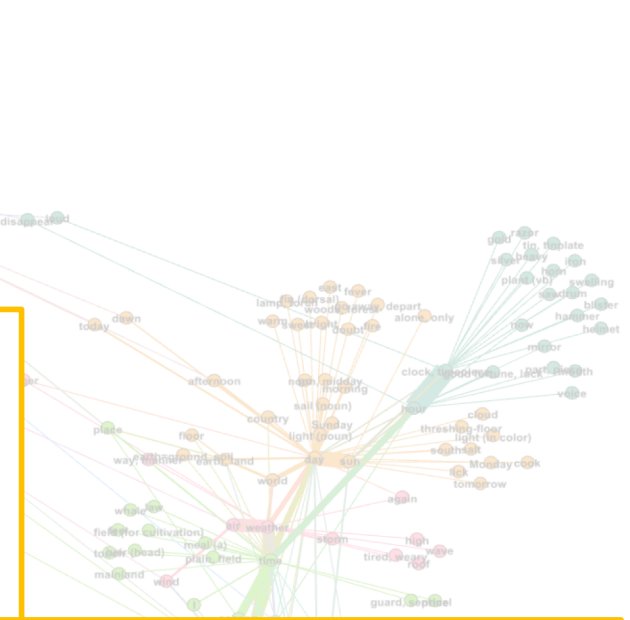
## Das Herz in der ägyptischen Literatur des zweiten Jahrtausends v. Chr.

Untersuchungen zu Idiomatik und Metaphorik von Ausdrücken mit *jb* und *h3tj*

Dissertation zur Erlangung des Doktorgrads an der Philosophischen Fakultät der Georg-August-Universität Göttingen

vorgelegt von

María Isabel Toro Rueda aus Madrid (Spanien)



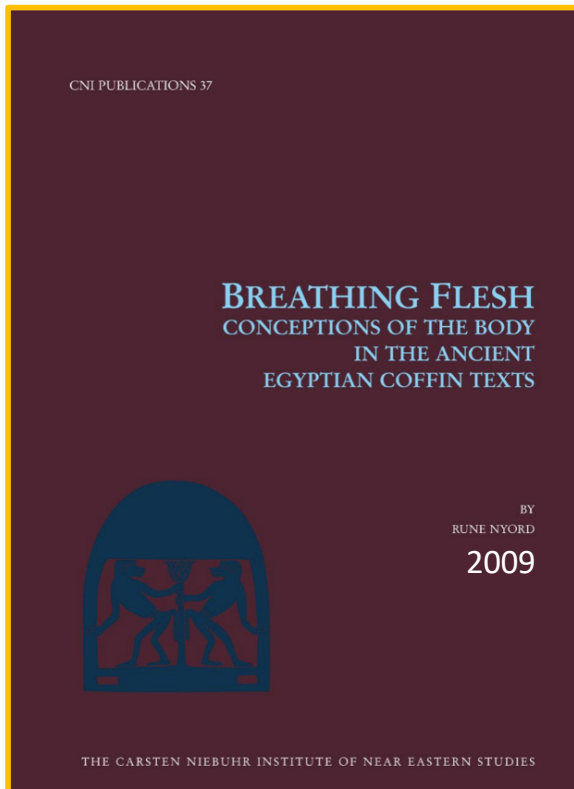
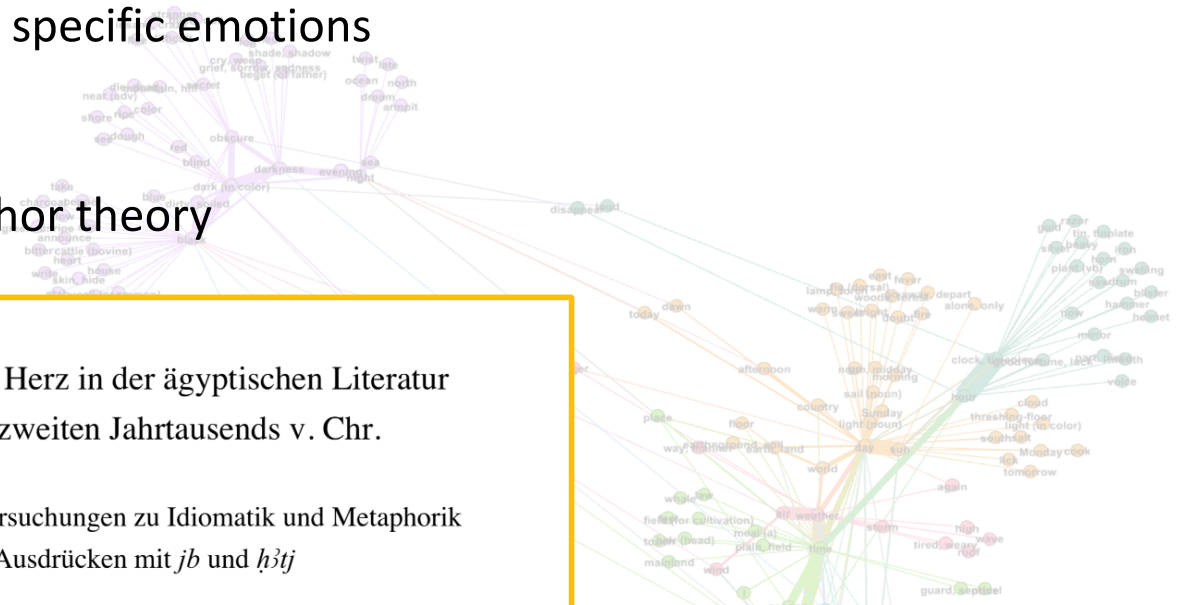
M. Salah EL-KHOLI  
2003

## Das Herz in der Bedeutung „Verstand“ und „Gefühl“



# Languages and emotions – Ancient Egyptian

- Onomasiological approaches to specific emotions
- Writing and emotions
- Cognitive linguistics and metaphor theory



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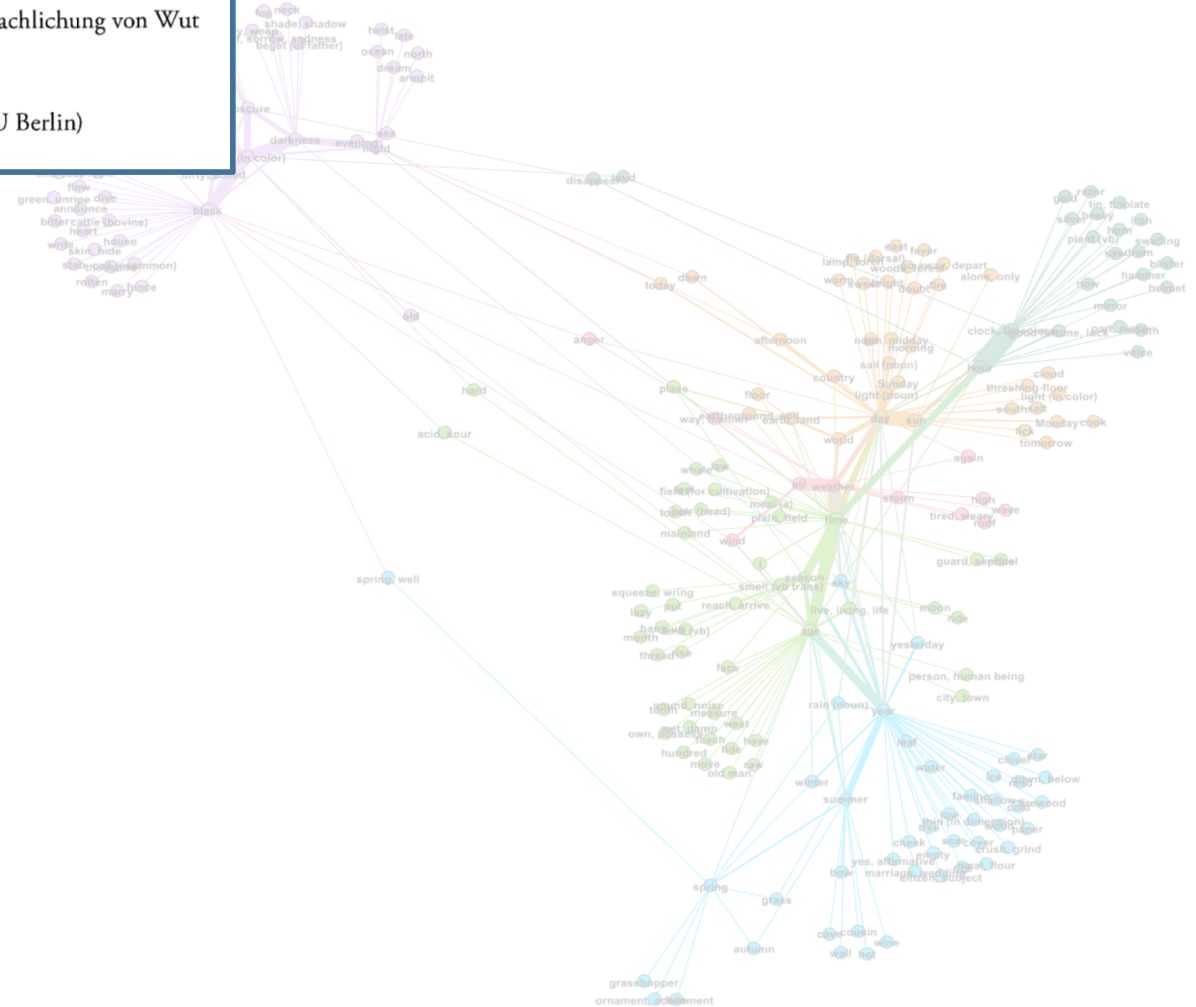
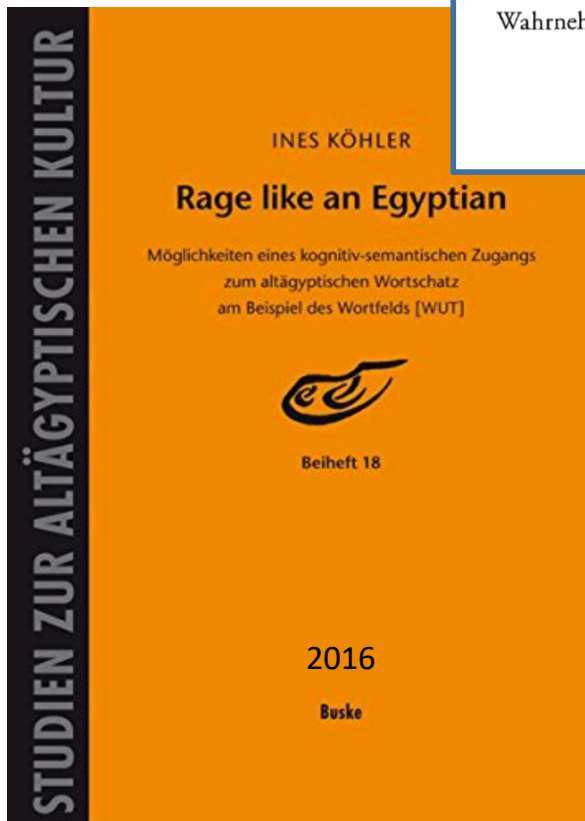
# Languages and emotions – Ancient Egyptian

„Du Pharao – ich Hulk“

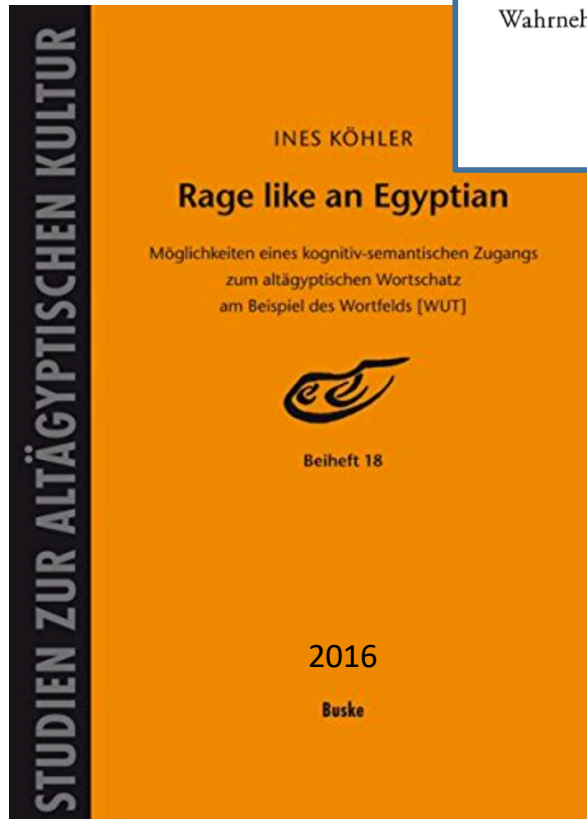
Wahrnehmung und Versprachlichung von Wut

2012

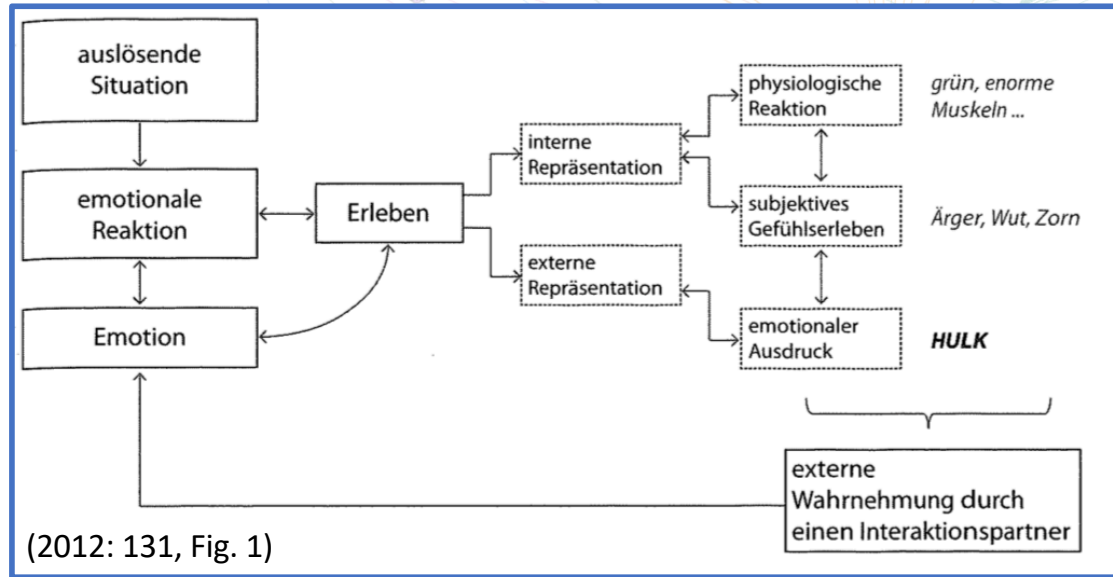
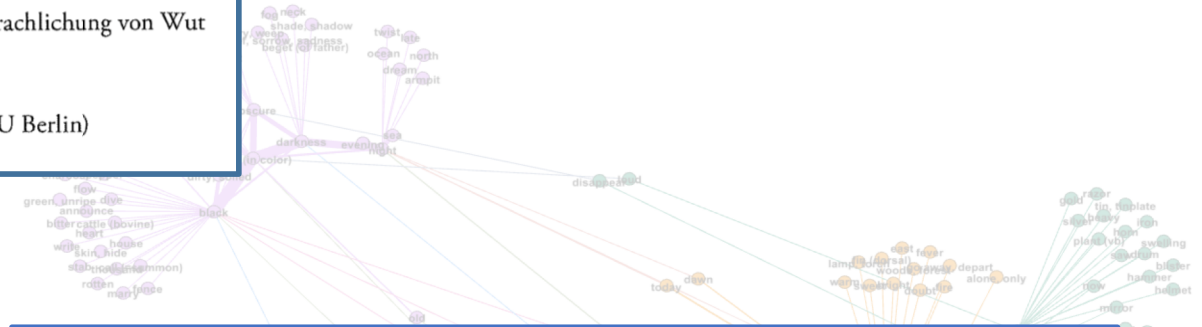
Ines Köhler (FU Berlin)



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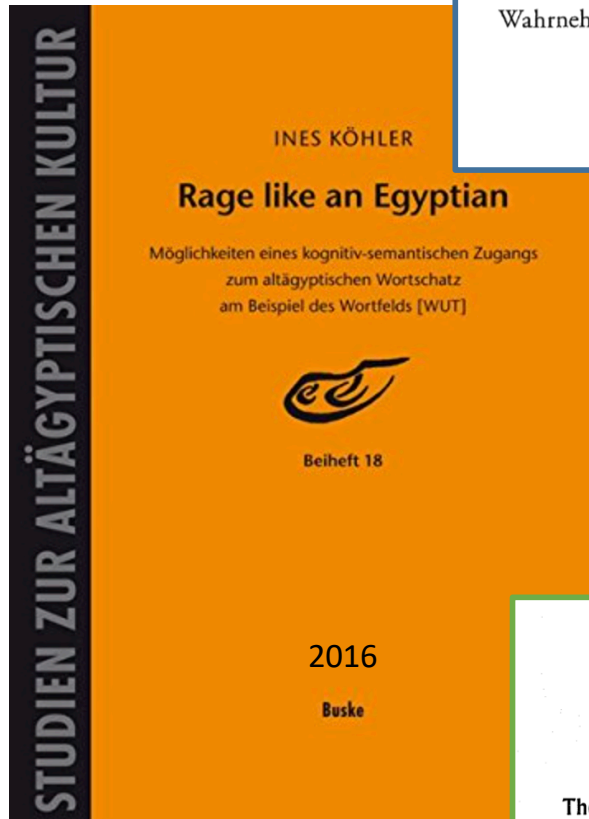


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Cf. emotion vs. feeling (Scherer 2013)

# Languages and emotions – Ancient Egyptian



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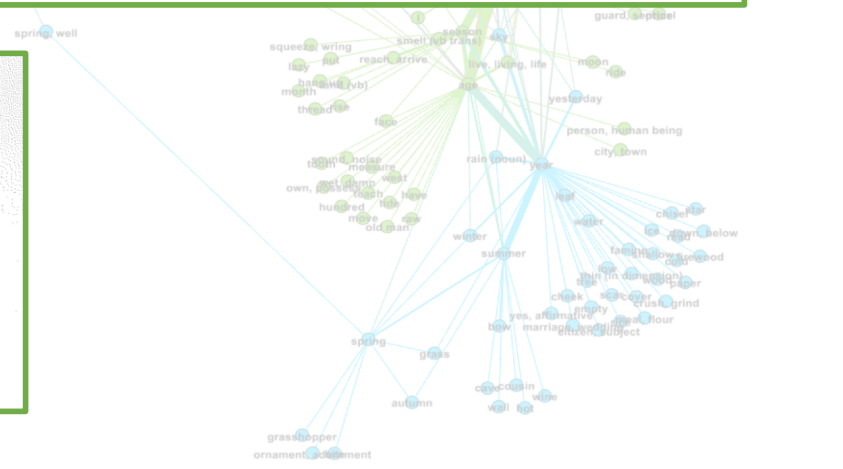
Ende mit Schrecken oder Schrecken ohne Ende?  
 Zur Verwendung sprachlicher Ausdrücke für Furcht im Totenbuch<sup>1</sup>  
 2015  
 Sven Eicke (Köln)

**Chapter 12. Affecting the Gods – Fear in Ancient Egyptian religious texts**  
 Sven Eicke | University of Cologne

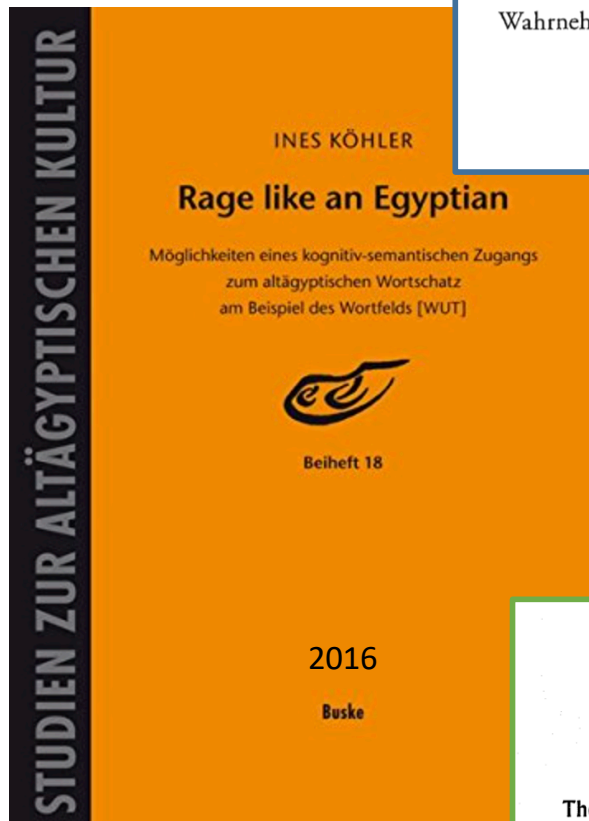
This chapter presents an analysis of the concept of *fear* and the usage of linguistic expressions referring to this emotion in selected Ancient Egyptian religious texts. By using approaches from Cognitive Linguistics and Psychohistory, a deeper insight into the ancient sources is gained. Furthermore, some considerations about the relationship between *fear* and public space, as well as about the meaning of individuality and identity, will be made within the selected corpora.

Chapter published in:  
 Consensus and Dissent:  
 Negotiating Emotion in the  
 Public Space  
 Edited by Anne Storch  
 [Culture and Language Use 19] 2017  
 ▶ pp. 229–246

Anger and Agency  
 The role of the emotions in Demotic and earlier narratives\*  
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Cédric Gobeil\*  
La joie pour identité  
Les modalités d'emploi des termes liés  
à la joie dans l'anthroponymie égyptienne

# Languages and emotions – Ancient Egyptian

## Écriture des émotions en égyptien

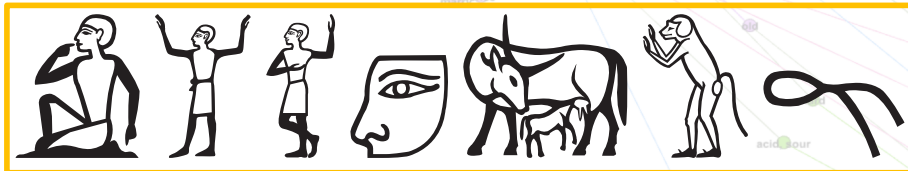
2017

Nathalie BEAUX

Collège de France et Institut français d'archéologie orientale du Caire (IFAO)  
nathbeauxgrimal@aol.com

« L'étude du champ lexical et des écritures de quatre émotions, *joie*, *tristesse*, *peur* et *colère*, permettent d'affirmer que la culture égyptienne était fondée sur la joie, émotion dont le lexique est très largement supérieur à celui des autres émotions. »

Joy



Sadness



Fear



Anger



# Languages and emotions – Ancient Egyptian

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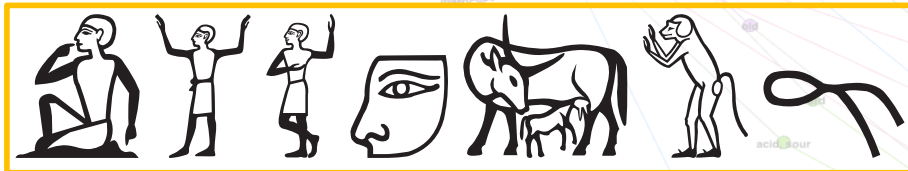
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nathbeauxgrimal@aol.com

Cf. Goldwasser (1995, 2002, 2006)  
about A2 for [emotions & feelings]

Joy



Sadness



Fear



Anger



# Languages and emotions – Ancient Egyptian

„Ich habe seinen Anblick geschmeckt ...“

Verben der Wahrnehmung  
und die semantischen Beziehungen zwischen Perzeption und Kognition<sup>1</sup>

2015

Elisabeth Steinbach (HU Berlin)

*LingAeg* 25 (2017), 373–390

Experiencing is Tasting

Perception Metaphors of *Taste* in Ancient Egyptian

Elisabeth Steinbach-Eicke<sup>1</sup>

## ➤ TASTING IS FEELING EMOTIONS

*nn*

NEG

*dp-tn*

taste:SBJV-2PL

*snq.t*

fear-F

*n.t*

of

*ky*

another

*t'*

(foreign) land

‘You will not feel the fear of another (foreign) land’ (St. Louvre C26)

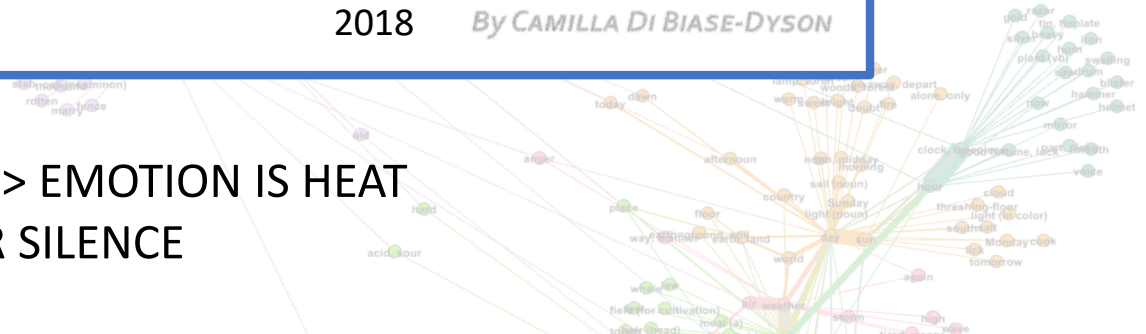
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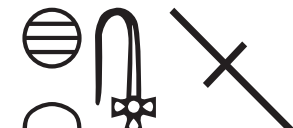


## The figurative network

Tracking the use of metaphorical language for “hot” and “cold” in Ramesside literary texts<sup>1</sup>

2018 By CAMILLA DI BIASE-DYSON

- ANTAGONISM IS HEAT > EMOTION IS HEAT
- RESTRAINT IS COLD OR SILENCE



			
<i>tʿ</i>	<i>ḥ-t</i>	<i>rkḥ-tw</i>	<i>m-ḥt=f</i>
ART:F.SG	fire-F	burn-RES	LOC-belly-3SG.M

‘The anger/agitation (lit. fire) rages in his belly’ (*Amenemope*, 13,7)



# Languages and emotions – Ancient Egyptian

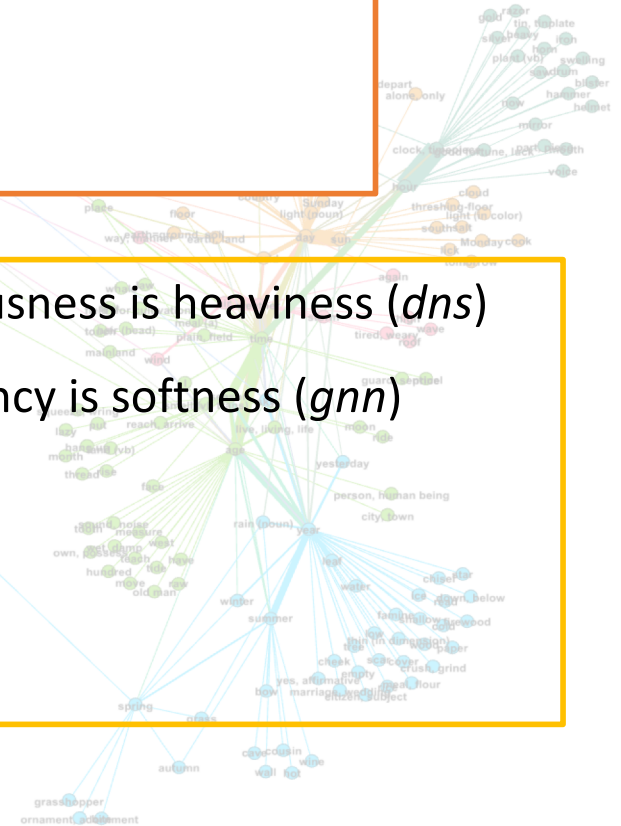
To appear in Kiersten Neumann and Allison Thomason (Eds.), Handbook of the Senses in the Ancient Near East. London: Routledge/Taylor and Francis.

**Metaphors of sensory experience in Ancient Egyptian texts: Emotion, personality and social interaction.**

Camilla Di Biase-Dyson and Gaëlle Chantrain

- Sight: colours, shades and luminosity
- Sound: noise vs. silence
- Taste: sweet vs. bitter
- Touch: hot vs. cold, texture and surfaces
- Smell

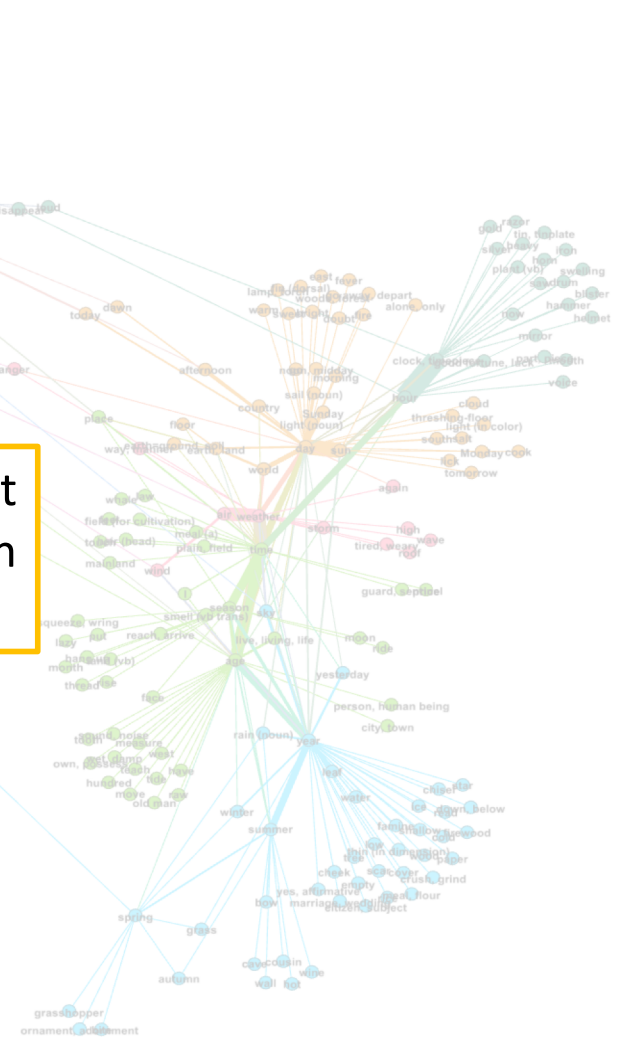
- Seriousness is heaviness (*dns*)
- Leniency is softness (*gnn*)
- Etc.

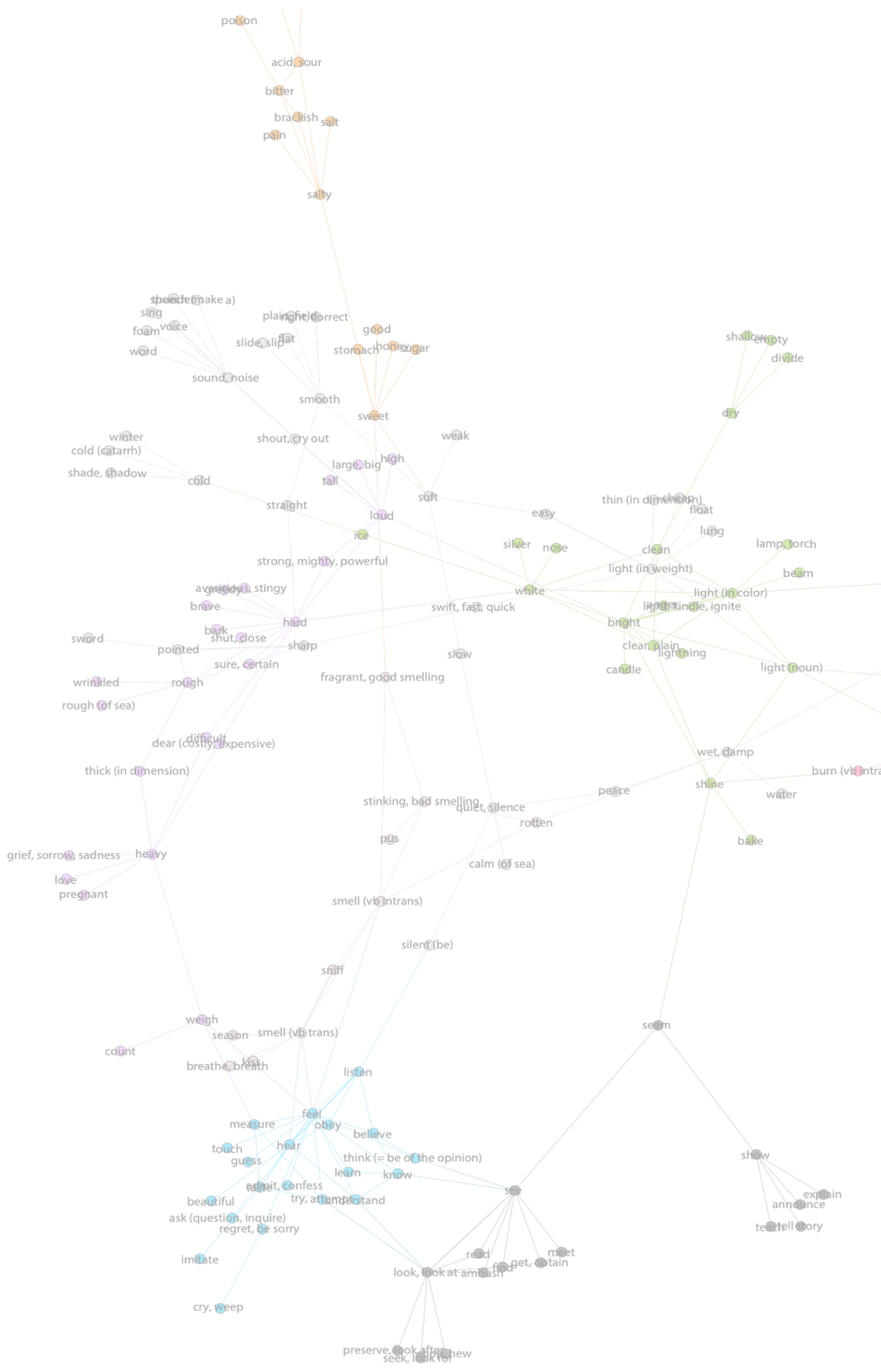


# Languages and emotions – Ancient Egyptian

- Onomasiological approaches to specific emotions
- Writing and emotions
- Cognitive linguistics and metaphor theory

No attempt at studying the Ancient Egyptian's expressions of emotion in a typological perspective

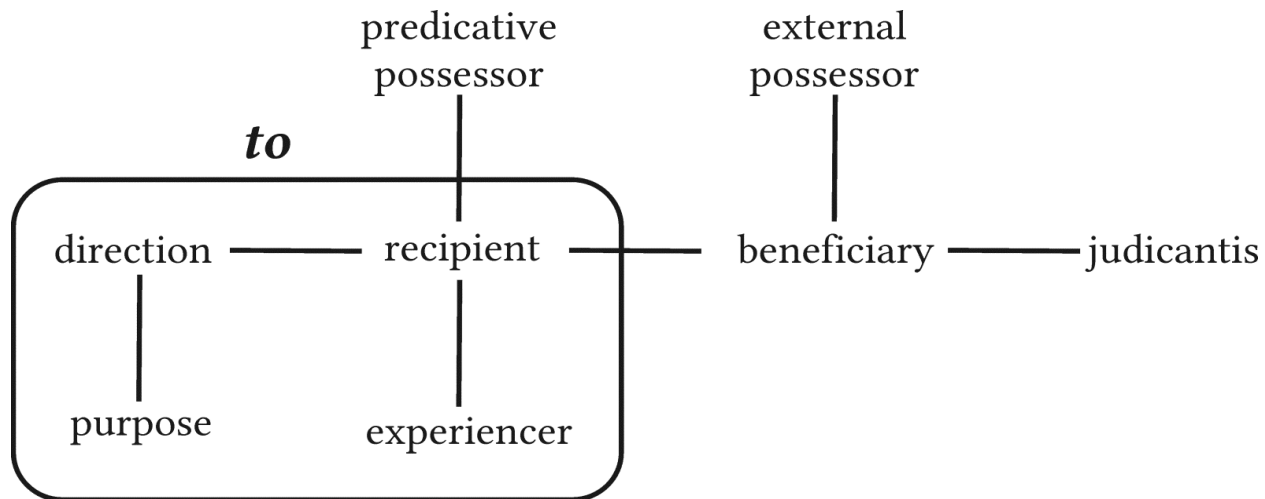




# Semantic maps

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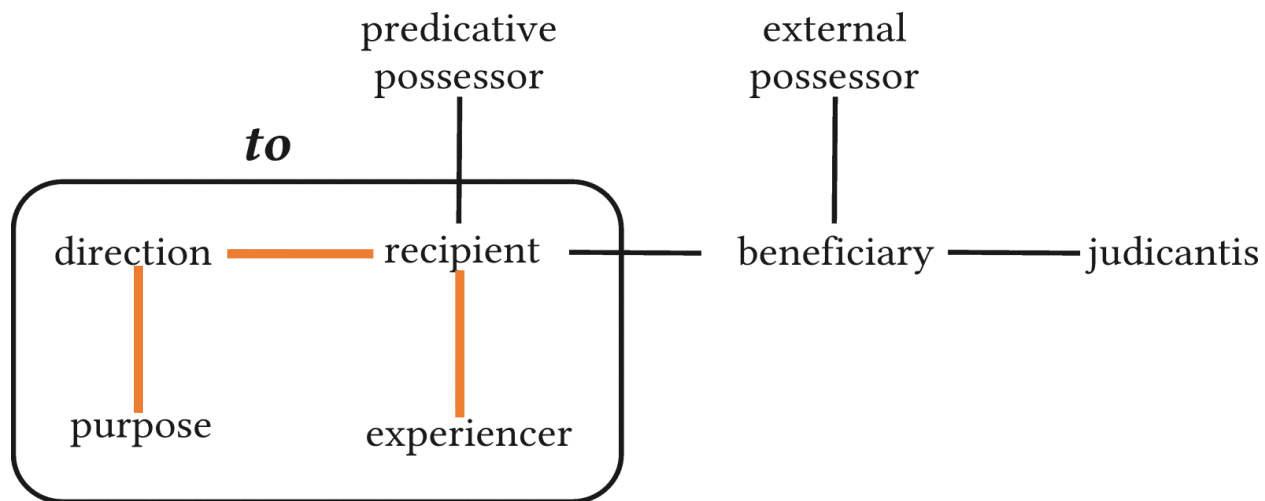
- 'A semantic map is a geometrical representation of functions (...) that are linked by connecting lines and thus constitute a network' (Haspelmath 2003)
- A semantic map is a method for visually representing cross-linguistic regularity in semantic structure based on patterns of co-expression (Georgakopoulos & Polis 2018)



**FIGURE 1.** A semantic map of typical dative functions / the boundaries of English *to* (based on Haspelmath 2003: 213)

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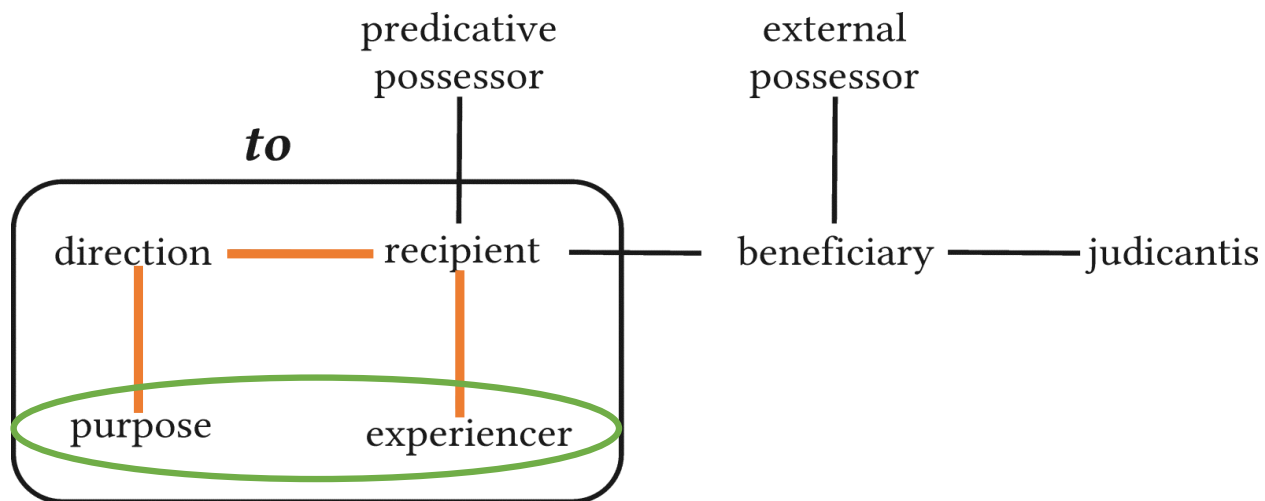


**Connectivity hypothesis**

**FIGURE 1.** A semantic map of typical dative functions / the boundaries of English *to* (based on Haspelmath 2003: 213)

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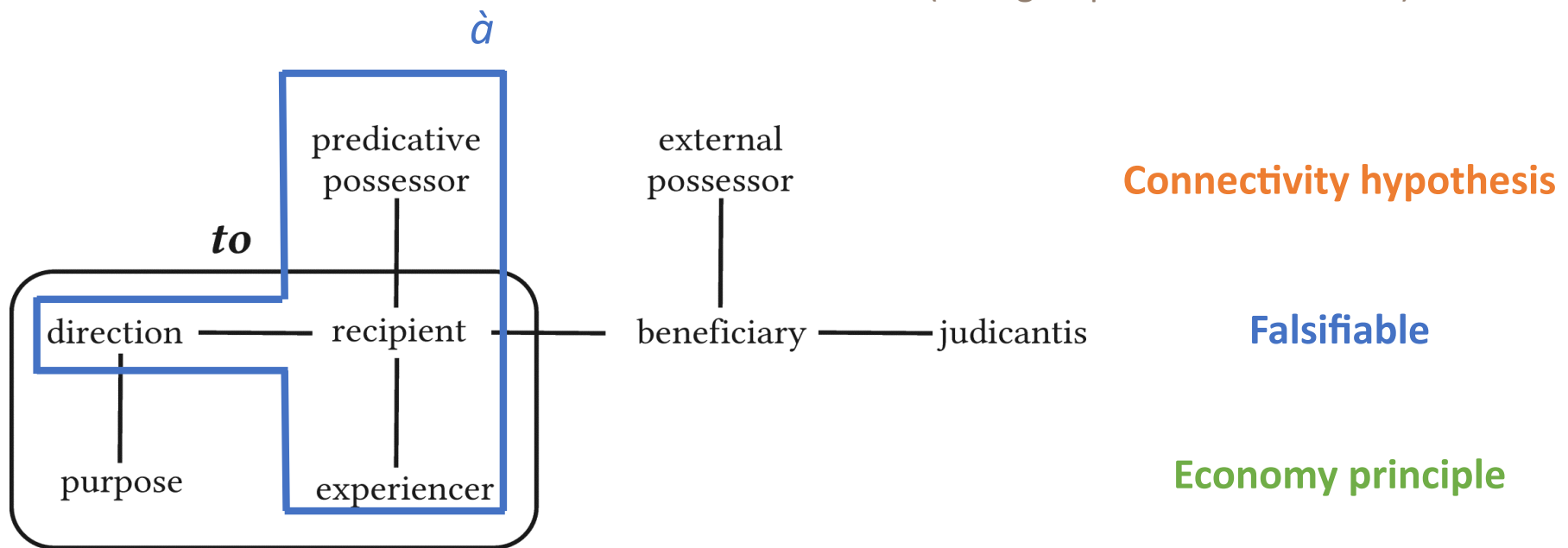
Connectivity hypothesis

Economy principle

**FIGURE 1.** A semantic map of typical dative functions / the boundaries of English *to* (based on Haspelmath 2003: 213)

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# Semantic maps – How are they build?



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Based on empirical linguistic data (patterns of co-expression)

Form	Language	SMELL (PERCEIVE)	HEAR	LISTEN	FEEL	SEE	TASTE (SOMETHING)	UNDERSTAND
thin55	Changsha		1	1	0	0	0	0
ak	Gurdjar		1	1	0	0	1	0
sentire	Italian		1	1	0	1	0	0
clywed	Welsh		1	1	0	0	0	0
nenglengay	Sanapaná		1	1	0	0	0	0
lingaiyi	Lengua		1	1	0	1	0	1
dai3n@n6	Nung-Ninbei		1	1	0	0	0	0
klevet	Breton		1	1	0	0	0	0
hnov	White Hmong		1	1	0	1	0	0
eta	Kali'na		1	1	0	0	0	1
indr	Moresada		1	1	0	0	0	0
theng5	Mulam		1	0	1	0	0	0
ka31ngiet33	Bulang		1	0	1	0	0	0
zu21	Tujia		1	0	1	0	0	0

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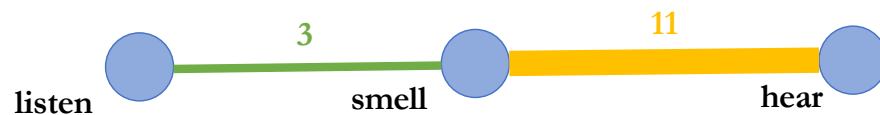
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lingaiyi	Lengua	1	1	0	1	0	1	0
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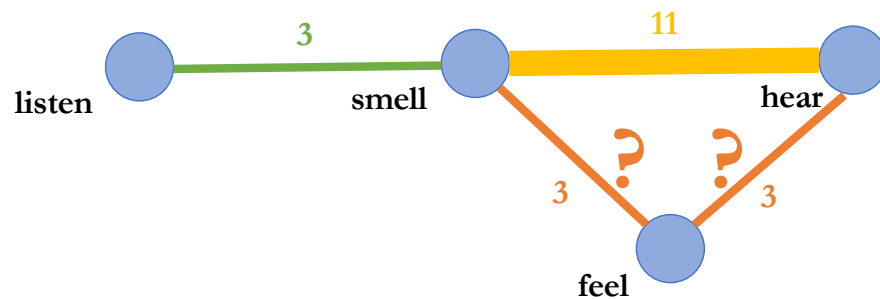
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theng5	Mulam	1	0	1	0	0	0	0
ka31ngiet33	Bulang	1	0	1	0	0	0	0
zu21	Tujia	1	0	1	0	0	0	0



# Semantic maps – How are they build?

Based on empirical linguistic data (patterns of co-expression)

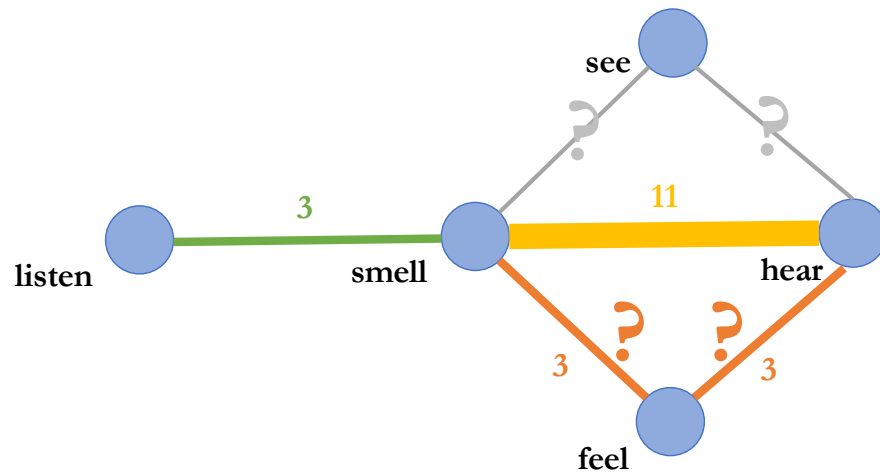
Form	Language	SMELL (PERCEIVE)	HEAR	LISTEN	FEEL	SEE	TASTE (SOMETHING)	UNDERSTAND
thin55	Changsha	1	1	1	0	0	0	0
ak	Gurdjar	1	1	1	0	0	1	0
sentire	Italian	1	1	1	0	1	0	0
clywed	Welsh	1	1	1	0	0	0	0
nenglengay	Sanapaná	1	1	1	0	0	0	0
lingaiyi	Lengua	1	1	1	0	1	0	0
dai3n@n6	Nung-Ninbei	1	1	1	0	0	0	0
klevet	Breton	1	1	1	0	0	0	0
hnov	White Hmong	1	1	1	0	1	0	0
eta	Kali'na	1	1	1	0	0	0	1
indr	Moresada	1	1	1	0	0	0	0
theng5	Mulam	1	0	0	1	0	0	0
ka31ngiet33	Bulang	1	0	0	1	0	0	0
zu21	Tujia	1	0	0	1	0	0	0



# Semantic maps – How are they build?

Based on empirical linguistic data (patterns of co-expression)

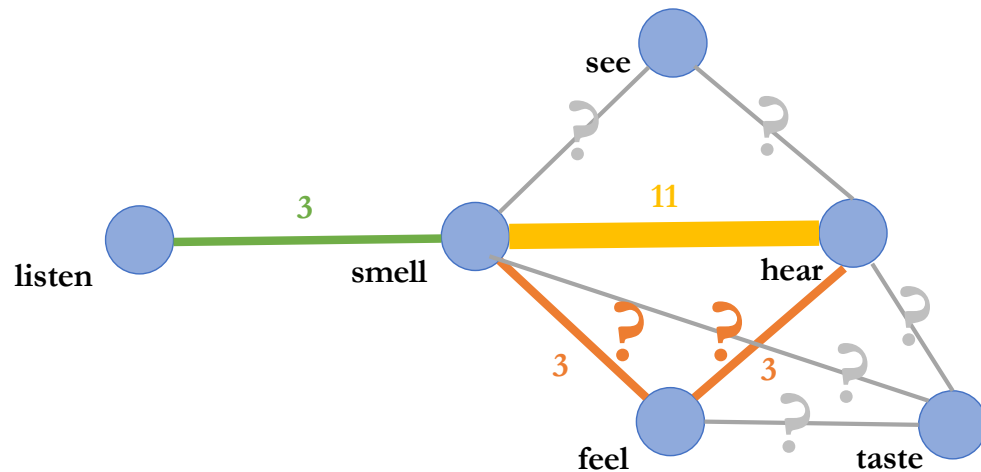
Form	Language	SMELL (PERCEIVE)	HEAR	LISTEN	FEEL	SEE	TASTE (SOMETHING)	UNDERSTAND
thin55	Changsha	1	1	1	0	0	0	0
ak	Gurdjar	1	1	1	0	0	1	0
sentire	Italian	1	1	1	0	1	0	0
clywed	Welsh	1	1	1	0	0	0	0
nenglengay	Sanapaná	1	1	1	0	0	0	0
lingaiyi	Lengua	1	1	1	0	1	0	1
dai3n@n6	Nung-Ninbei	1	1	1	0	0	0	0
klevet	Breton	1	1	1	0	0	0	0
hnov	White Hmong	1	1	1	0	1	0	0
eta	Kali'na	1	1	1	0	0	0	1
indr	Moresada	1	1	1	0	0	0	0
theng5	Mulam	1	0	0	1	0	0	0
ka31ngiet33	Bulang	1	0	0	1	0	0	0
zu21	Tujia	1	0	0	1	0	0	0



# Semantic maps – How are they build?

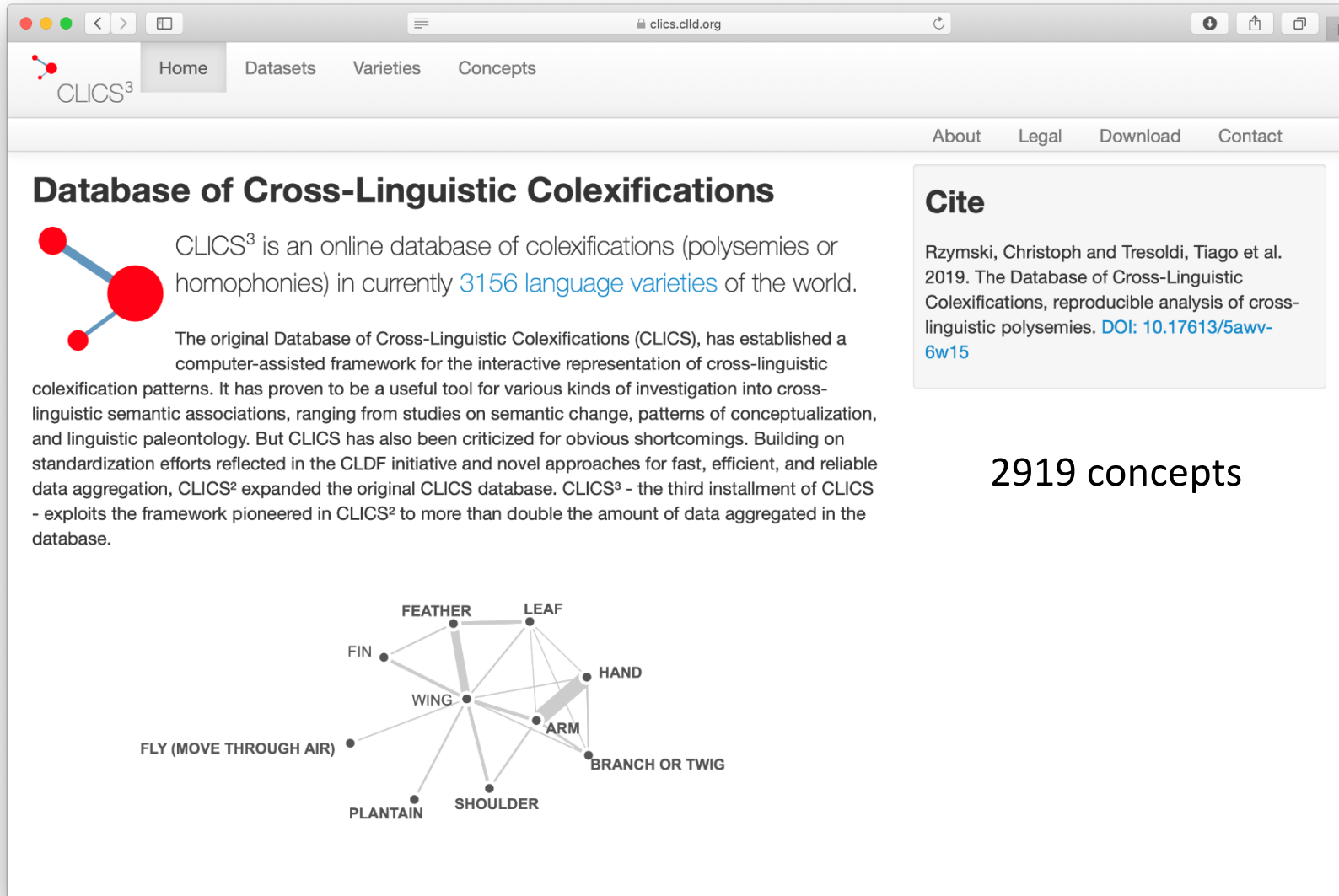
Based on empirical linguistic data (patterns of co-expression)

Form	Language	SMELL (PERCEIVE)	HEAR	LISTEN	FEEL	SEE	TASTE (SOMETHING)	UNDERSTAND
thin55	Changsha		1	1	0	0	0	0
ak	Gurdjar		1	1	0	0	1	0
sentire	Italian		1	1	0	1	0	0
clywed	Welsh		1	1	0	0	0	0
nenglengay	Sanapaná		1	1	0	0	0	0
lingaiyi	Lengua		1	1	0	1	0	1
dai3n@n6	Nung-Ninbei		1	1	0	0	0	0
klevet	Breton		1	1	0	0	0	0
hnov	White Hmong		1	1	0	1	0	0
eta	Kali'na		1	1	0	0	0	1
indr	Moresada		1	1	0	0	0	0
theng5	Mulam	1	1	0	1	0	0	0
ka31ngiet33	Bulang	1	1	0	1	0	0	0
zu21	Tujia	1	1	0	1	0	0	0



➤ More corsslinguistic data  
⇒ more constraints

# Semantic maps – How do we collect data?



The screenshot shows the CLICS3 website interface. At the top, there is a navigation bar with links for Home, Datasets, Varieties, and Concepts. Below this, there is a secondary navigation bar with links for About, Legal, Download, and Contact. The main content area features a large red circular graphic with three smaller red circles connected by lines. To the right of this graphic is the title "Database of Cross-Linguistic Colexifications" and a paragraph describing the database. Below this is another paragraph providing more details about the database's history and expansion. To the right of the main text is a "Cite" section with a citation for Rzymiski, Christoph and Tresoldi, Tiago et al. (2019). Below the text is a network diagram with nodes representing semantic concepts and edges representing colexifications. The nodes include FEATHER, LEAF, FIN, WING, HAND, ARM, BRANCH OR TWIG, SHOULDER, PLANTAIN, and FLY (MOVE THROUGH AIR). The diagram shows a central node "WING" connected to several other nodes, including "FEATHER", "LEAF", "HAND", "ARM", "SHOULDER", and "FLY (MOVE THROUGH AIR)".

**Database of Cross-Linguistic Colexifications**

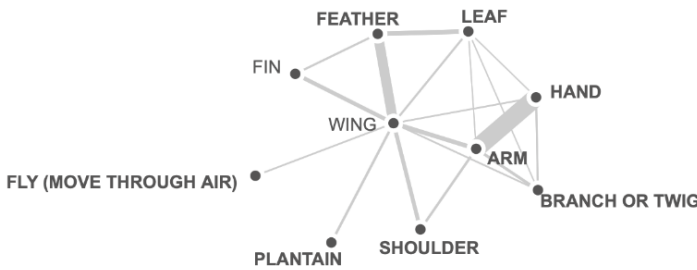
CLICS<sup>3</sup> is an online database of colexifications (polysemies or homophonies) in currently [3156 language varieties](#) of the world.

The original Database of Cross-Linguistic Colexifications (CLICS), has established a computer-assisted framework for the interactive representation of cross-linguistic colexification patterns. It has proven to be a useful tool for various kinds of investigation into cross-linguistic semantic associations, ranging from studies on semantic change, patterns of conceptualization, and linguistic paleontology. But CLICS has also been criticized for obvious shortcomings. Building on standardization efforts reflected in the CLDF initiative and novel approaches for fast, efficient, and reliable data aggregation, CLICS<sup>2</sup> expanded the original CLICS database. CLICS<sup>3</sup> - the third installment of CLICS - exploits the framework pioneered in CLICS<sup>2</sup> to more than double the amount of data aggregated in the database.

**Cite**

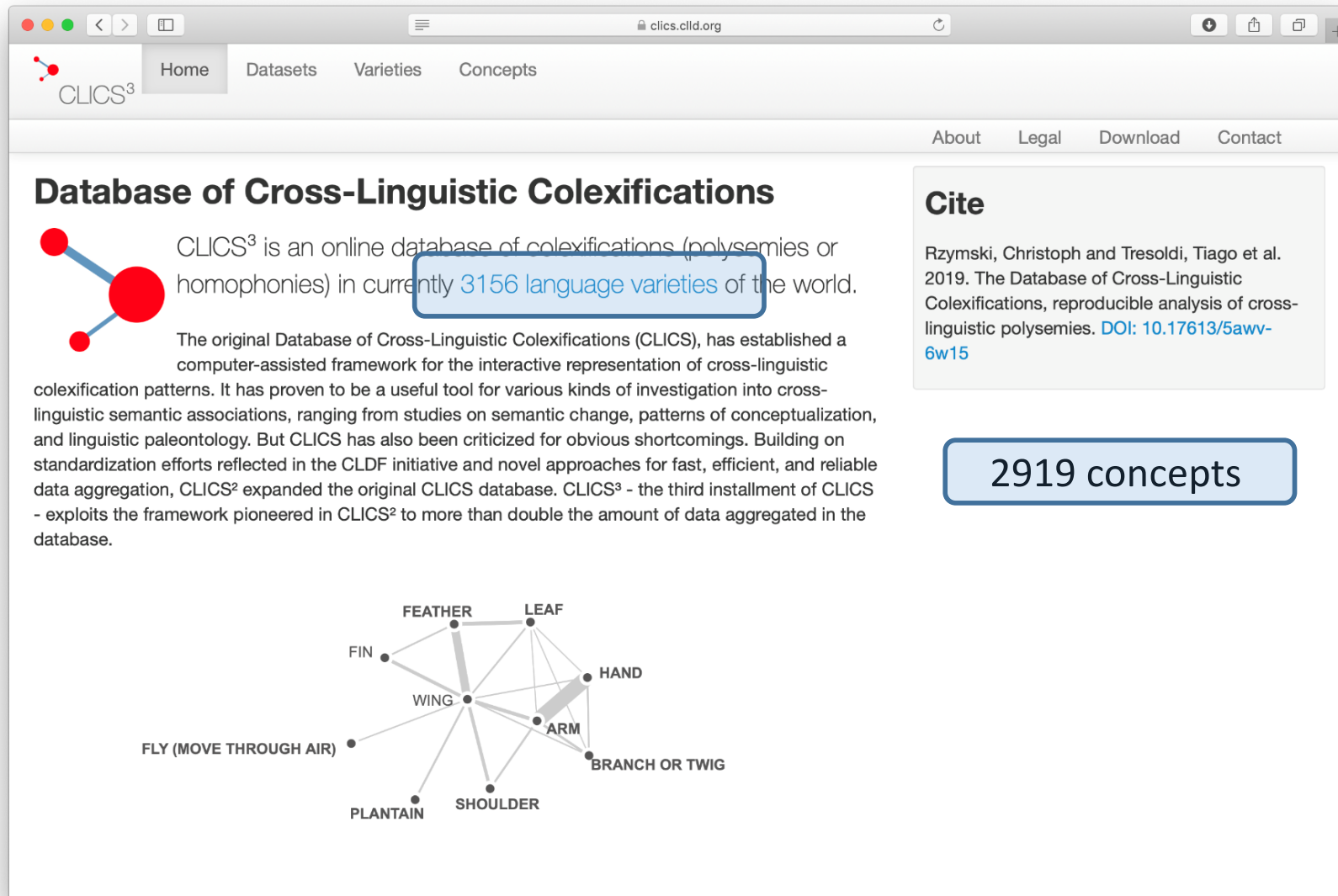
Rzymiski, Christoph and Tresoldi, Tiago et al. 2019. The Database of Cross-Linguistic Colexifications, reproducible analysis of cross-linguistic polysemies. DOI: [10.17613/5awv-6w15](https://doi.org/10.17613/5awv-6w15)

**2919 concepts**



```
graph TD
    WING --- FEATHER
    WING --- LEAF
    WING --- HAND
    WING --- ARM
    WING --- SHOULDER
    WING --- FLY["FLY (MOVE THROUGH AIR)"]
    FEATHER --- LEAF
    FEATHER --- FIN
    LEAF --- HAND
    LEAF --- ARM
    LEAF --- BRANCH["BRANCH OR TWIG"]
    FIN --- WING
    HAND --- ARM
    ARM --- BRANCH
    SHOULDER --- WING
    PLANTAIN --- WING
```

# Semantic maps – How do we collect data?



The screenshot shows the CLICS3 website interface. The main heading is "Database of Cross-Linguistic Colexifications". A red circular icon with three lines extending from it is positioned to the left of the text. The text states that CLICS3 is an online database of colexifications (polysemies or homophonies) in currently 3156 language varieties of the world. Below this, a paragraph describes the original CLICS database and its expansion into CLICS3. A network diagram at the bottom shows semantic associations between terms like FEATHER, LEAF, FIN, WING, HAND, ARM, BRANCH OR TWIG, SHOULDER, PLANTAIN, and FLY (MOVE THROUGH AIR). A "Cite" section on the right provides citation information for Rzymiski, Christoph and Tresoldi, Tiago et al. (2019). A blue box highlights the number "2919 concepts".

**Database of Cross-Linguistic Colexifications**

CLICS<sup>3</sup> is an online database of colexifications (polysemies or homophonies) in currently 3156 language varieties of the world.

The original Database of Cross-Linguistic Colexifications (CLICS), has established a computer-assisted framework for the interactive representation of cross-linguistic colexification patterns. It has proven to be a useful tool for various kinds of investigation into cross-linguistic semantic associations, ranging from studies on semantic change, patterns of conceptualization, and linguistic paleontology. But CLICS has also been criticized for obvious shortcomings. Building on standardization efforts reflected in the CLDF initiative and novel approaches for fast, efficient, and reliable data aggregation, CLICS<sup>2</sup> expanded the original CLICS database. CLICS<sup>3</sup> - the third installment of CLICS - exploits the framework pioneered in CLICS<sup>2</sup> to more than double the amount of data aggregated in the database.

**Cite**

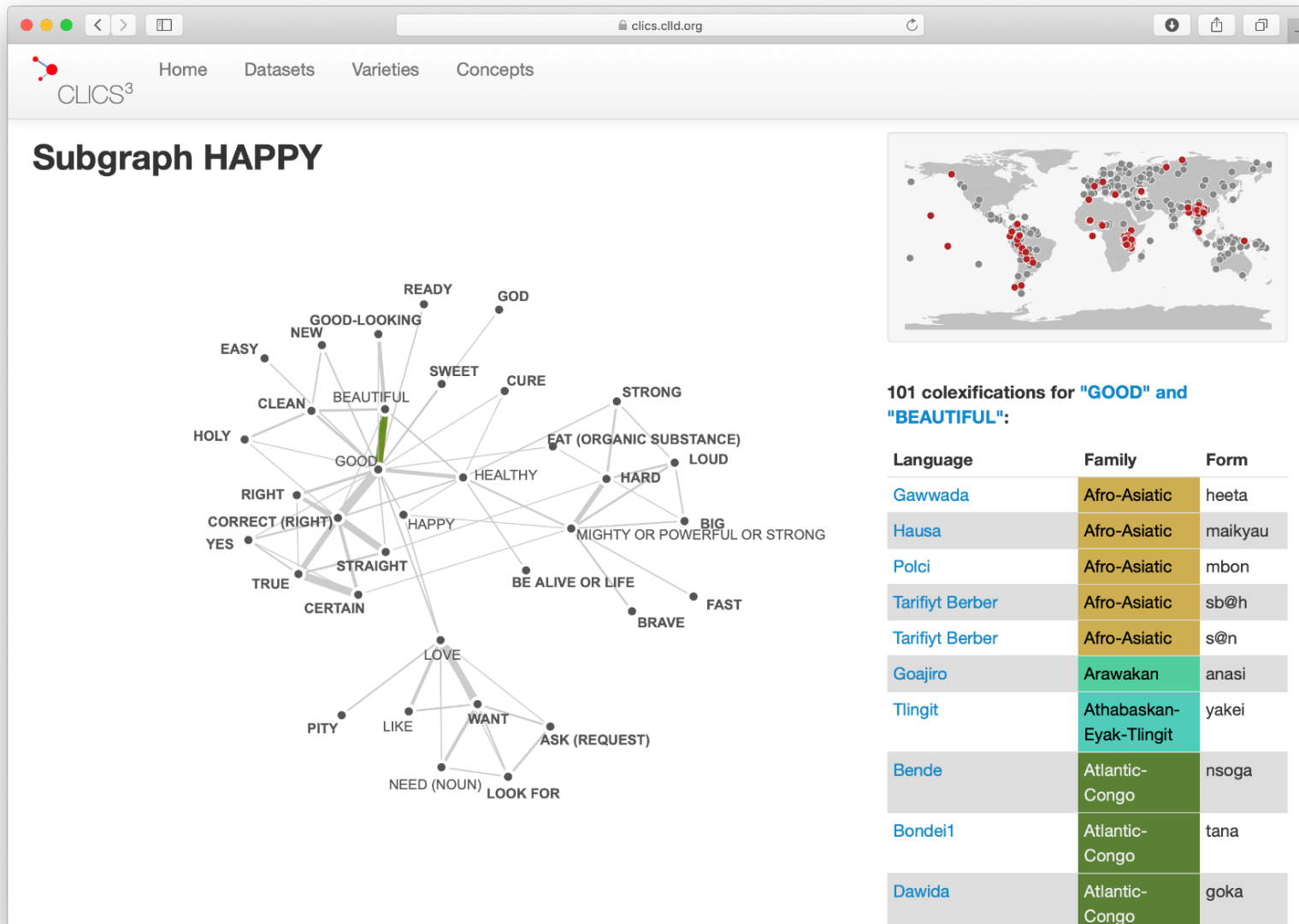
Rzymiski, Christoph and Tresoldi, Tiago et al. 2019. The Database of Cross-Linguistic Colexifications, reproducible analysis of cross-linguistic polysemies. DOI: [10.17613/5awv-6w15](https://doi.org/10.17613/5awv-6w15)

**2919 concepts**

FEATHER LEAF  
FIN WING HAND  
FLY (MOVE THROUGH AIR) ARM BRANCH OR TWIG  
PLANTAIN SHOULDER



# Semantic maps – How do we collect data?



# Inferring semantic maps

“ideally (...) it should be possible to generate semantic maps automatically on the basis of a given set of data”

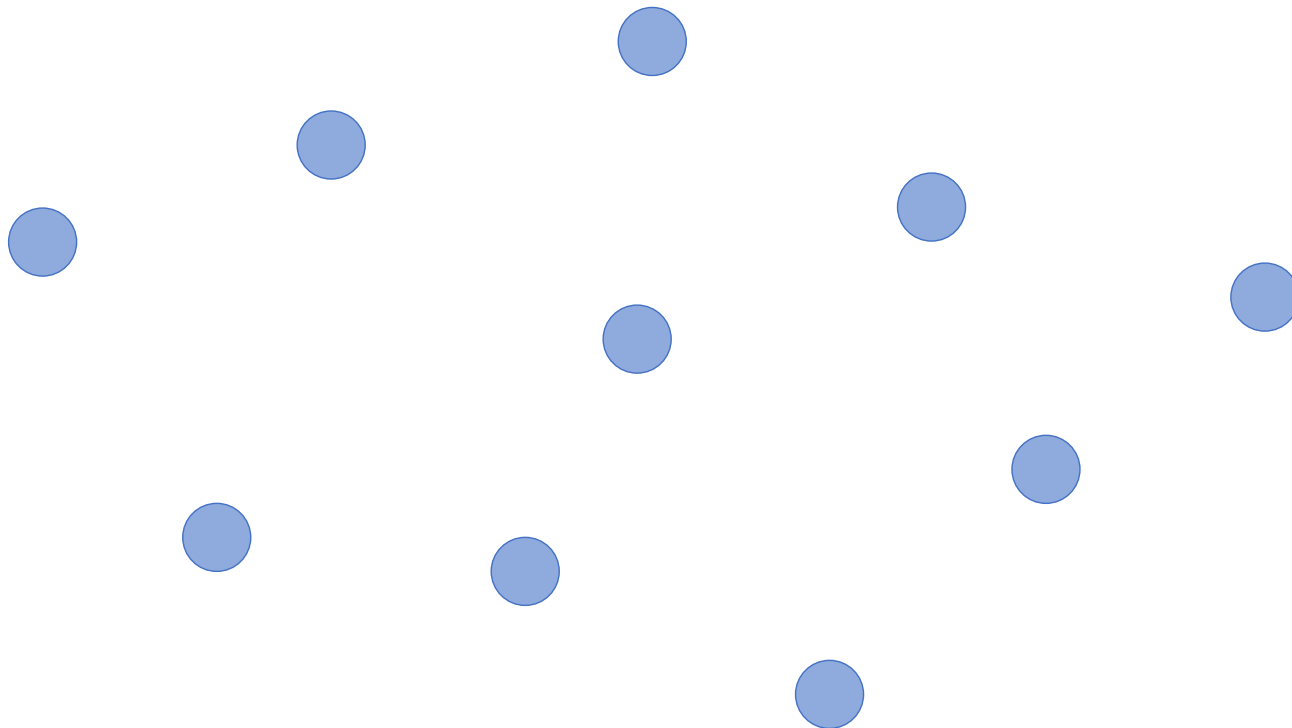
(Narrog & Ito 2007: 280)

## Inferring semantic maps

Regier, Khetarpal, and Majid showed that the semantic map inference problem is “formally identical to another problem that superficially appears unrelated: inferring a social network from outbreaks of disease in a population” (Regier *et al.* 2013: 91)

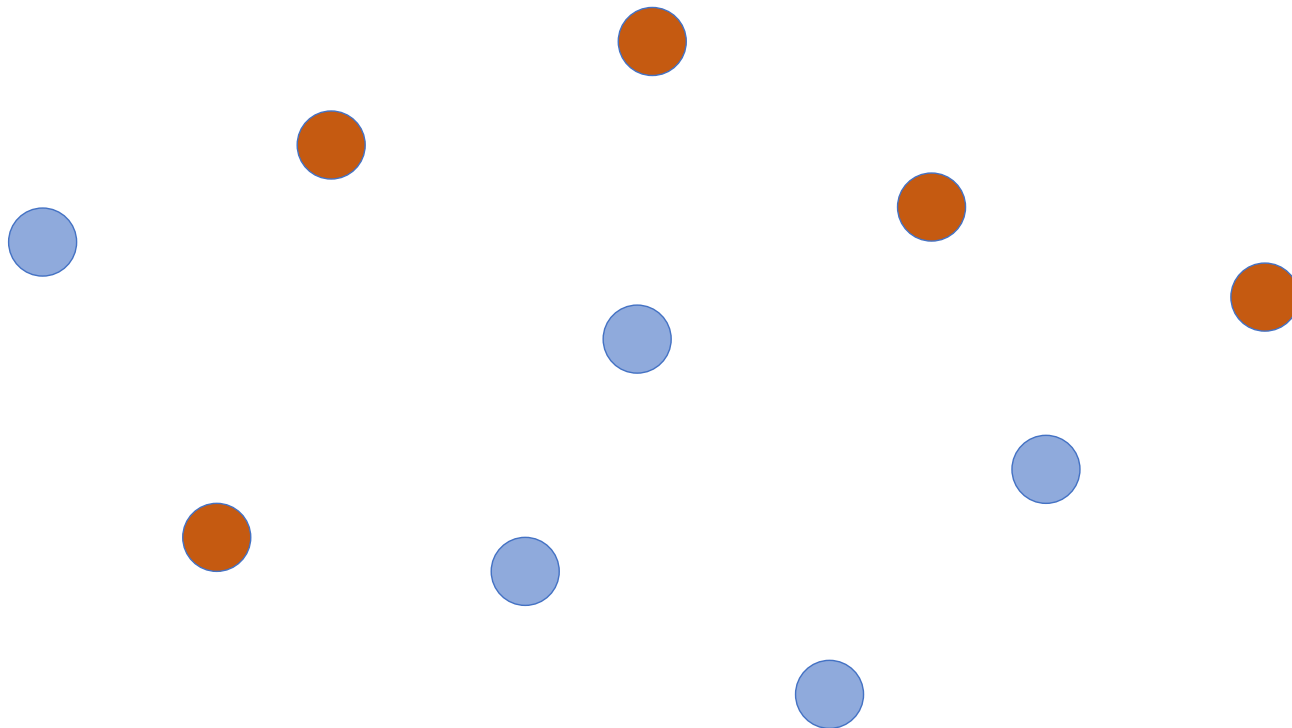
# Inferring semantic maps

- What's the idea?
  - Consider a group of social agents (represented by the nodes of a potential graph)



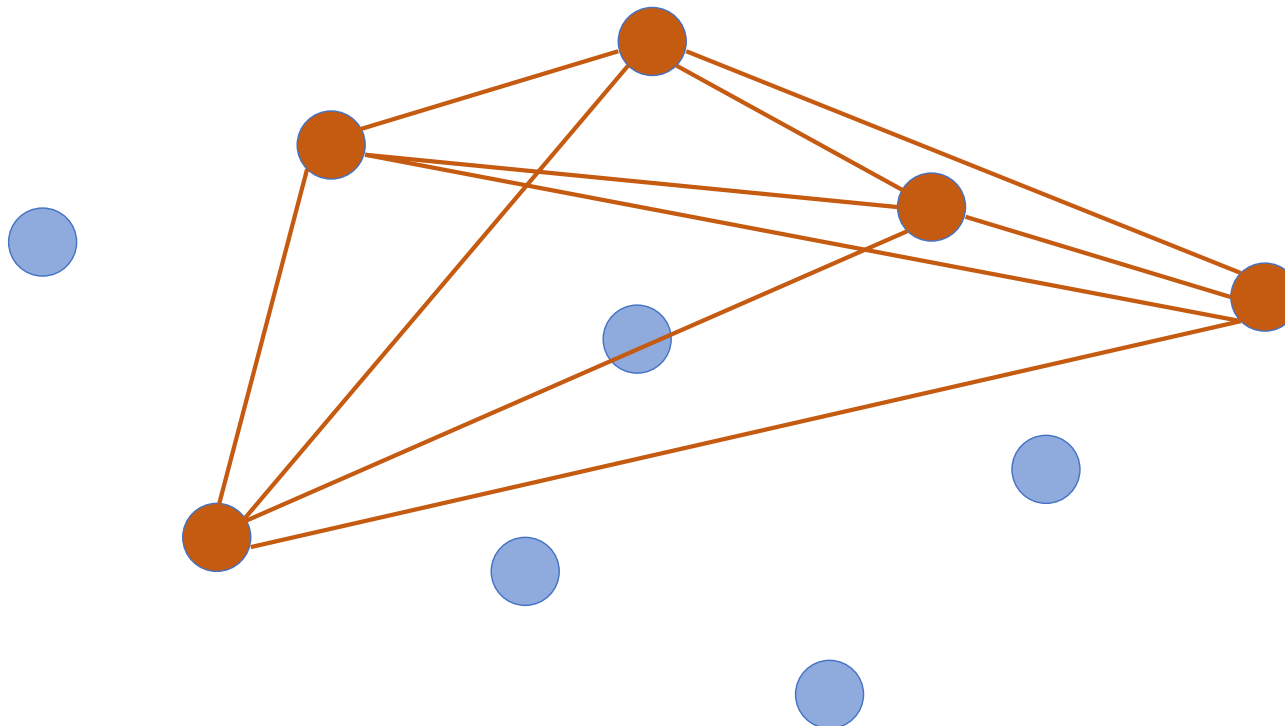
# Inferring semantic maps

- What's the idea?
  - If one observes the same disease for five of these agents (technically called a constraint on the nodes of the graph)



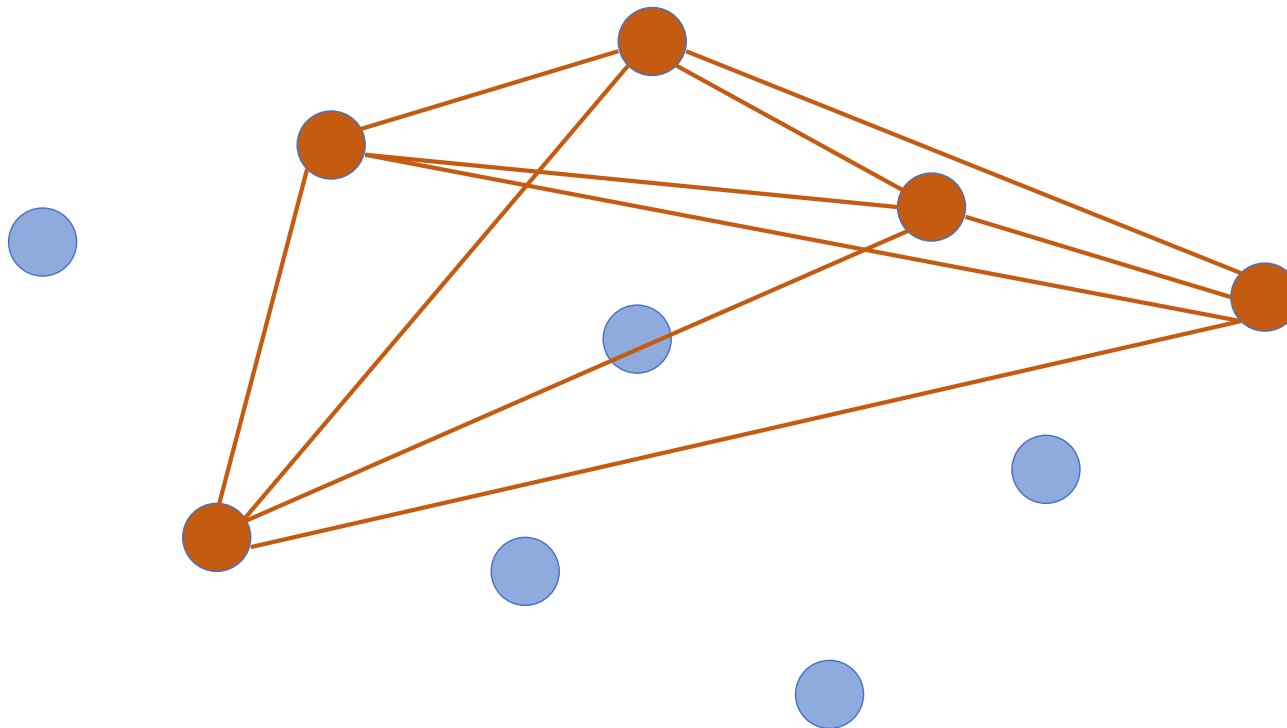
# Inferring semantic maps

- What's the idea?
  - One can postulate that all the agents met, so that all the nodes of the graph are connected (10 edges between the 5 nodes)



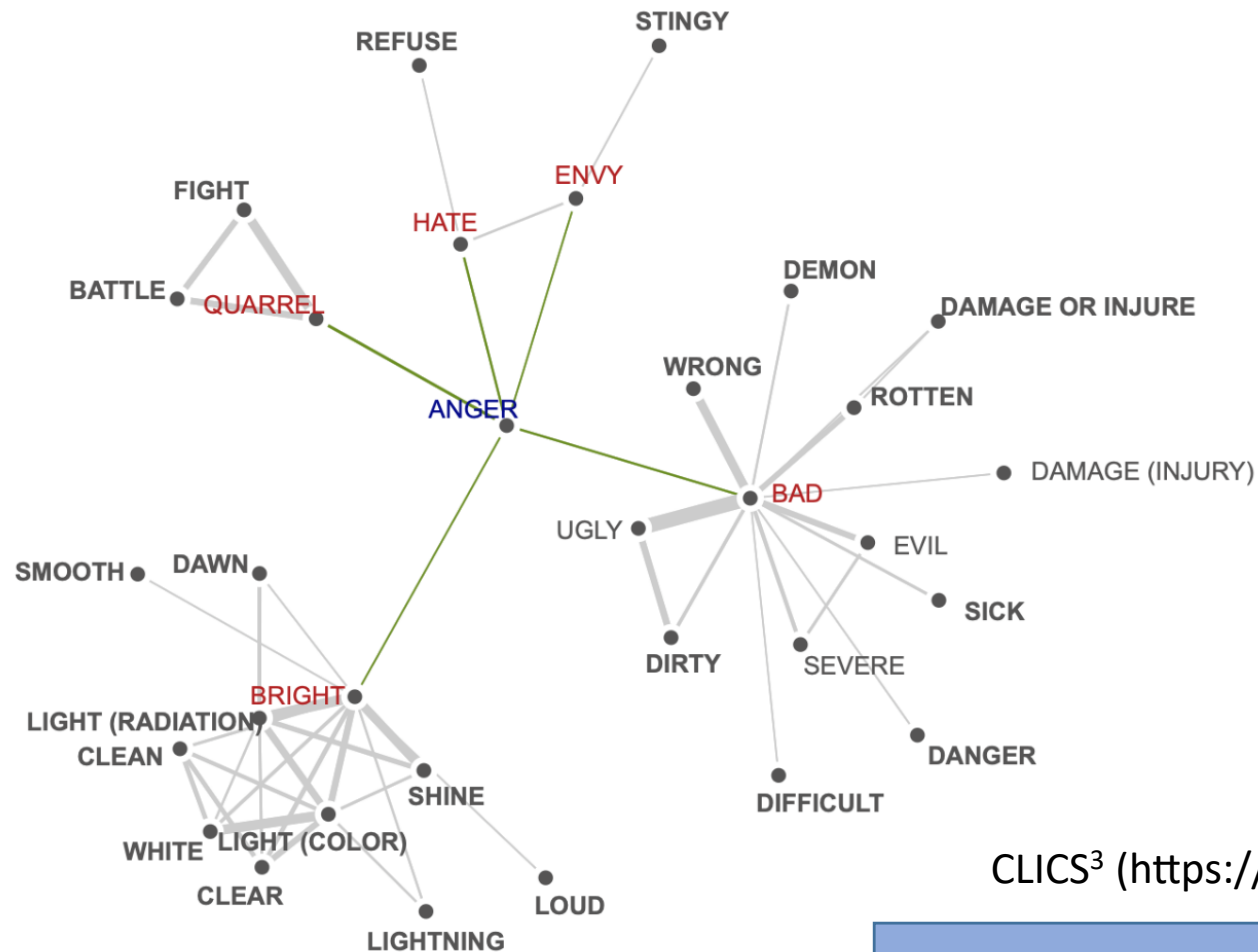
# Inferring semantic maps

- What's the idea?
  - This is neither a very likely, nor a very economic explanation



# Inferring semantic maps

- What's the idea?
  - But this is precisely what a colexification network does

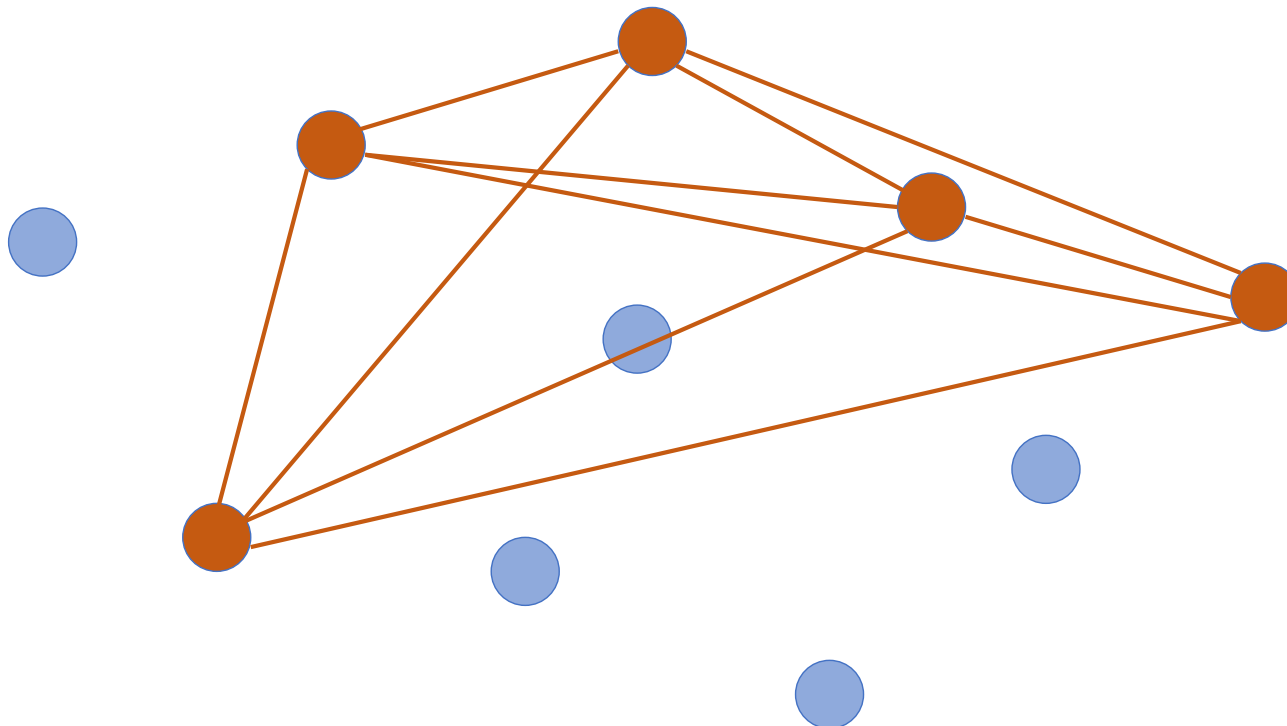


CLICS<sup>3</sup> (<https://clics.clld.org>)



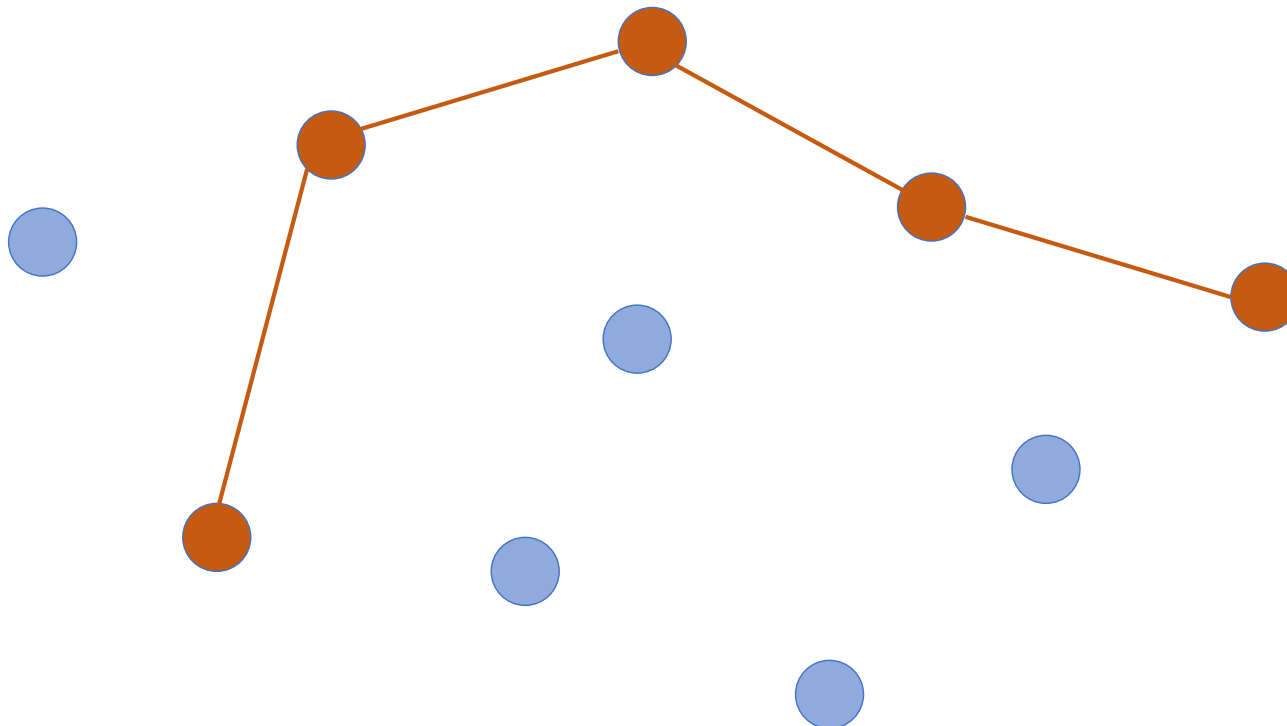
# Inferring semantic maps

- What's the idea?
  - The goal would be to find a more economical solution and to have all the social agents connected with as few edges as possible, but still accounting for all the observations



# Inferring semantic maps

- What's the idea?
  - The goal would be to find a more economical solution and to have all the social agents connected with as few edges as possible, but still accounting for all the observations

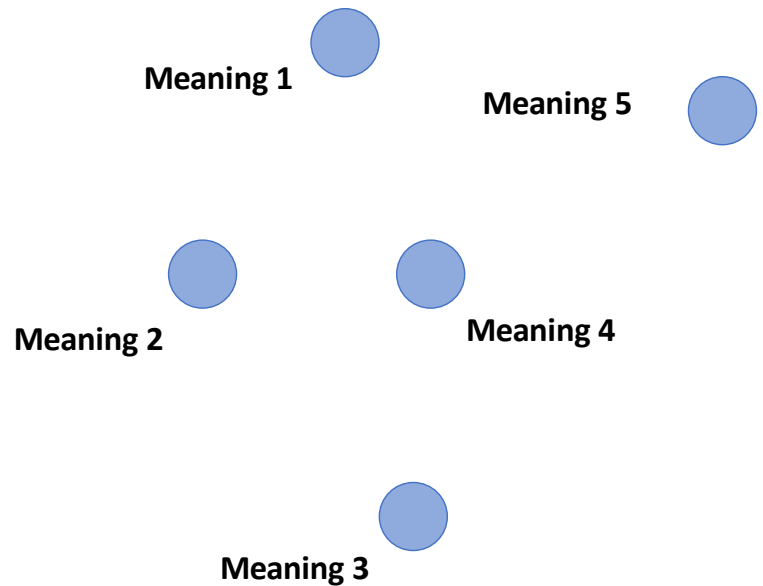


# Inferring semantic maps

- How does it transfer to semantic maps?

# Inferring semantic maps

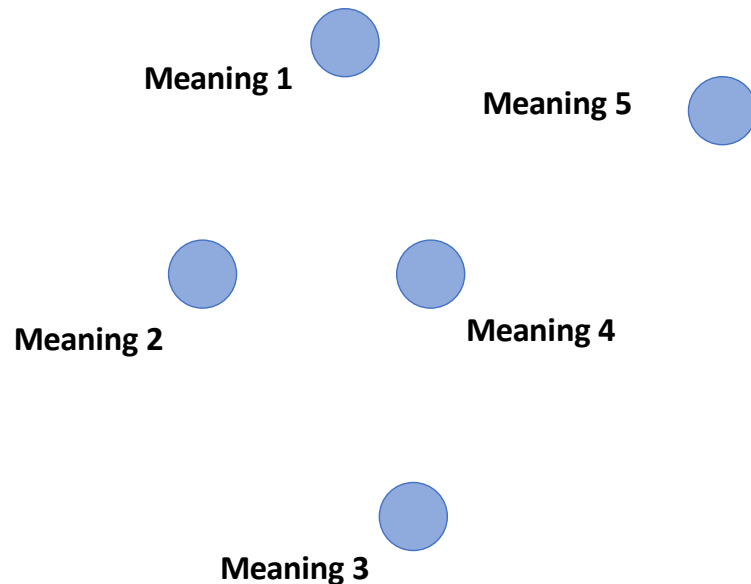
- How does it transfer to semantic maps?
  - Nodes are meanings



Meaning	1	2	3	4	5
---------	---	---	---	---	---

# Inferring semantic maps

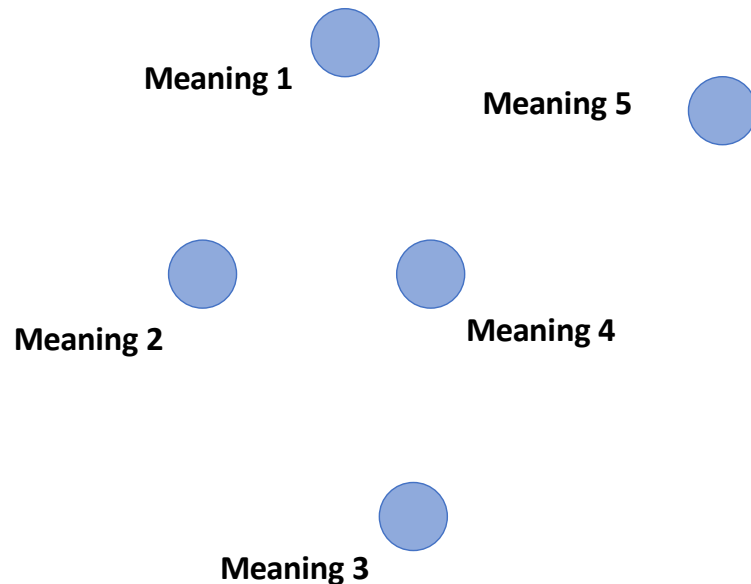
- How does it transfer to semantic maps?
  - Nodes are meanings
  - Constraints are patterns of co-expression (connectivity hypothesis)



Meaning	1	2	3	4	5
Polysemic item A	✓	✓			
Polysemic item B		✓	✓	✓	
Polysemic item C			✓	✓	✓

# Inferring semantic maps

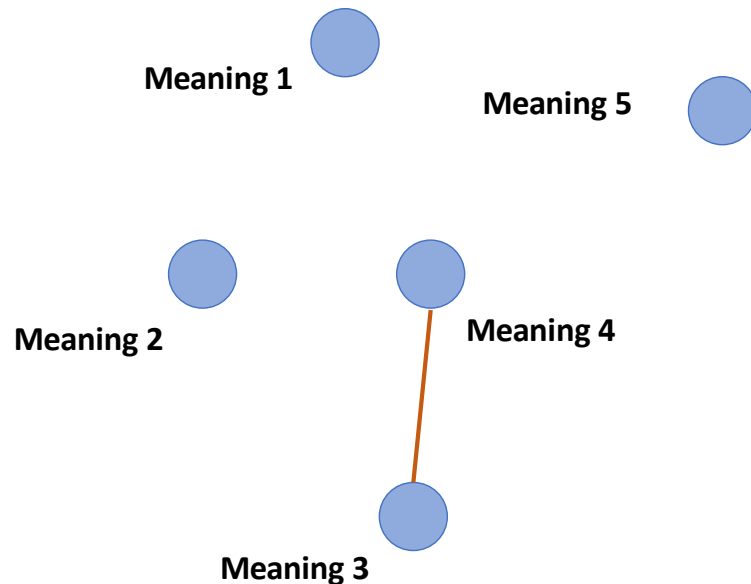
- How does it transfer to semantic maps?
  - Nodes are meanings
  - Constraints are patterns of co-expression (connectivity hypothesis)
  - One connects the nodes economically based on these constraints (economy principle)



Meaning	1	2	3	4	5
Polysemic item A	√	√			
Polysemic item B		√	√	√	
Polysemic item C			√	√	√

# Inferring semantic maps

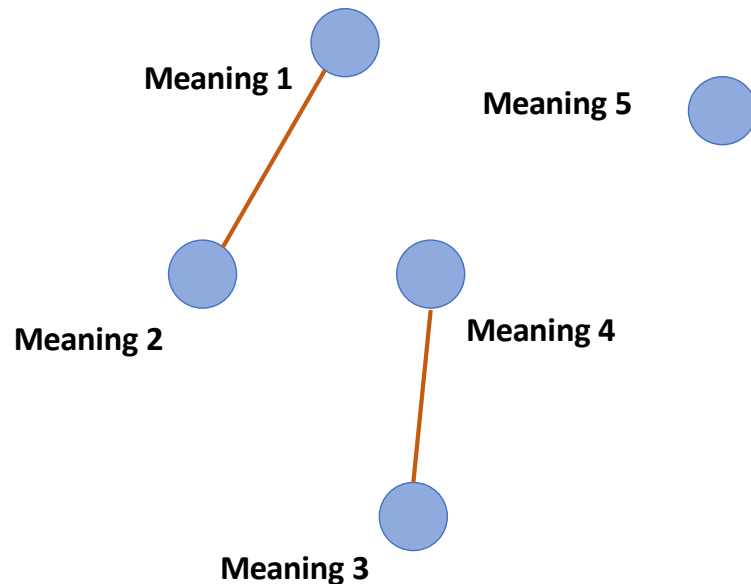
- How does it transfer to semantic maps?
  - Nodes are meanings
  - Constraints are patterns of co-expression (connectivity hypothesis)
  - One connects the nodes economically based on these constraints, starting with the edge(s) that accounts for the most frequent constraint(s)



Meaning	1	2	3	4	5
Polysemic item A	✓	✓			
Polysemic item B		✓	✓	✓	
Polysemic item C			✓	✓	✓

# Inferring semantic maps

- How does it transfer to semantic maps?
  - Nodes are meanings
  - Constraints are patterns of co-expression (connectivity hypothesis)
  - One connects the nodes economically based on these constraints, starting with the edge(s) that accounts for the most frequent constraint(s), and then going down the scale

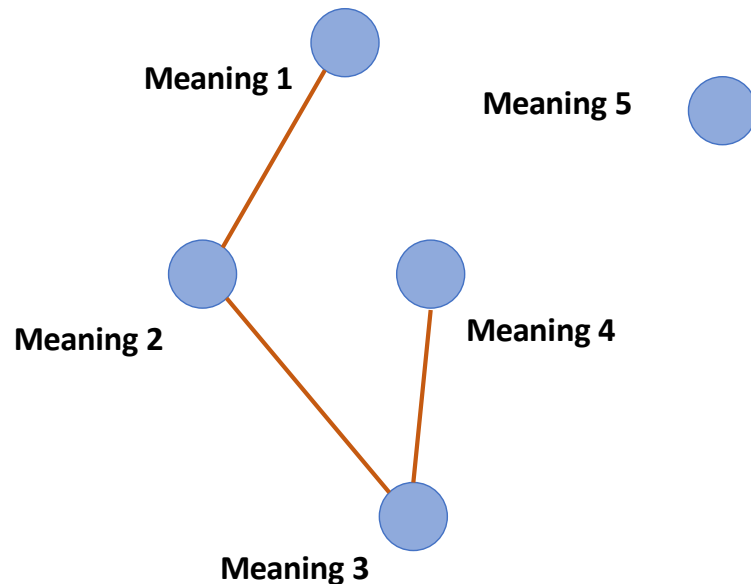


Meaning	1	2	3	4	5
Polysemic item A	√	√			
Polysemic item B		√	√	√	
Polysemic item C			√	√	√



# Inferring semantic maps

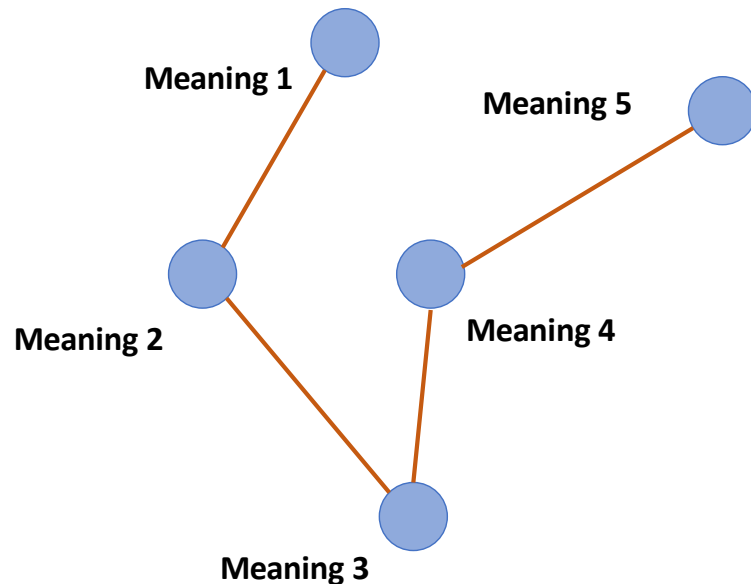
- How does it transfer to semantic maps?
  - Nodes are meanings
  - Constraints are patterns of co-expression (connectivity hypothesis)
  - One connects the nodes economically based on these constraints, starting with the edge(s) that accounts for the most frequent constraint(s), and then going down the scale



Meaning	1	2	3	4	5
Polysemic item A	✓	✓			
Polysemic item B		✓	✓	✓	
Polysemic item C			✓	✓	✓

# Inferring semantic maps

- How does it transfer to semantic maps?
  - Nodes are meanings
  - Constraints are patterns of co-expression (connectivity hypothesis)
  - One connects the nodes economically based on these constraints, starting with the edge(s) that accounts for the most frequent constraint(s), and then going down the scale



Meaning	1	2	3	4	5
Polysemic item A	✓	✓			
Polysemic item B		✓	✓	✓	
Polysemic item C			✓	✓	✓

# Inferring semantic maps

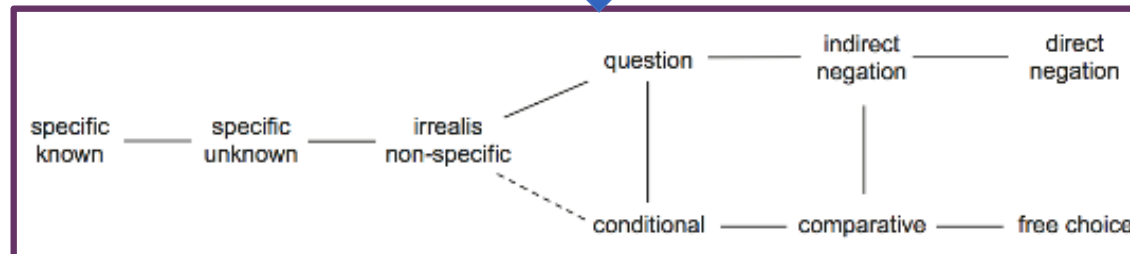
INPUT  
(lexical matrix)

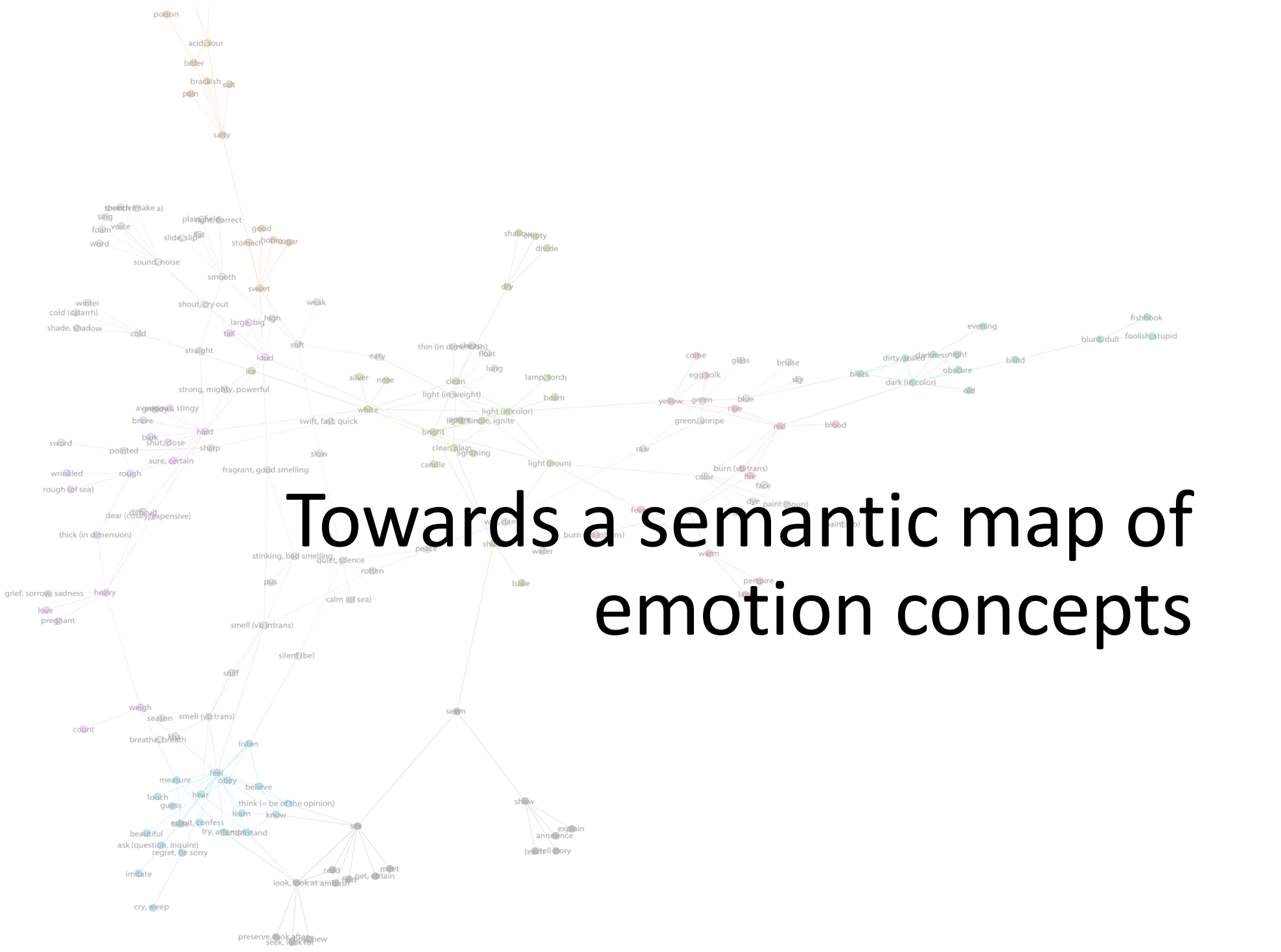
Language	Word	Specific Known SK	Specific Unknown SU	Irrealis Non-specific IR	Question QN	Conditional CD	Indirect Negation IN
German	"etwas"	1	1	1	1	1	1
German	"irgend"	0	1	1	1	1	1
German	"je"	0	0	0	1	1	1
German	"jeder"	0	0	0	0	0	1
German	"n-"	0	0	0	0	0	0
Dutch	"dan ook"	0	0	1	1	1	1
Dutch	"enig"	0	0	0	1	1	1
Dutch	"iets"	1	1	1	1	1	1
Dutch	"niets"	0	0	0	0	0	0
English	"any"	0	0	0	1	1	1
English	"ever"	0	0	0	1	1	1
English	"no"	0	0	0	0	0	0
English	"some"	1	1	1	1	1	0

ALGORITHM  
(python script)

```
# MAIN LOOP
objfn = C(G,T)
while (objfn < 0):
    print ("objective fn is currently", objfn,)
    max_score = 0
    # choose next edge greedily: the one that increases objfn the most
    for e in PossE:
        # temporarily add e to graph G
        G.add_edge(*e)
        score = C(G,T) - objfn
        G.remove_edge(*e)
        if (score > max_score):
            max_score = score
            max_edge = e
```

RESULT  
(semantic map)





# Towards a semantic map of emotion concepts

# Towards a semantic map of emotion concepts

## Which concepts?

The screenshot shows the Concepticon website interface. The browser address bar displays 'concepticon.clld.org'. The navigation menu includes 'Home', 'Concepts', 'Concept sets', 'Concept lists', 'Compilers', and 'Sources'. A secondary menu contains 'About', 'Legal', 'Download', and 'Contact'. The main content area features a 'Welcome to the Concepticon' section, a 'A Resource for the Linking of Concept Lists' section with a detailed text description, and a semantic map diagram. The diagram is a network graph with 'SIBLING' at the center, connected to various related terms like 'OLDER SIBLING', 'YOUNGER SIBLING', 'SISTER', and 'BROTHER'. To the right, there is a logo for 'arbitrarité' and a 'Cite' section with a 'cite' button. Below that is a 'Version' section with a 'cite' button.

**Welcome to the Concepticon**

This resource presents an attempt to link the large amount of different concept lists which are used in the linguistic literature, ranging from [Swadesh lists](#) in historical linguistics to [naming tests](#) in clinical studies and psycholinguistics.

**A Resource for the Linking of Concept Lists**

This resource, our Concepticon, links [concept labels](#) from different [conceptlists](#) to [concept sets](#). Each concept set is given a unique identifier, a unique label, and a human-readable definition. Concept sets are further structured by defining different relations between the concepts, as you can see in the graphic to the right, which displays the relations between concept sets linked to the concept set **SIBLING**. The resource can be used for various purposes. Serving as a rich reference for new and existing databases in diachronic and synchronic linguistics, it allows researchers a quick access to studies on semantic change, cross-linguistic polysemies, and semantic associations.

If you want to learn more about the ideas behind our Concepticon, have a look at our [about page](#) or read [List et al. 2016](#), presented at [LREC](#).

**Cite**

List, Johann Mattis & Rzymiski, Christoph & Greenhill, Simon & Schweikhard, Nathanael & Pianykh, Kristina & Forkel, Robert (eds.) 2019. Concepticon 2.2.0. Jena: Max Planck Institute for the Science of Human History. (Available online at <http://concepticon.clld.org>, Accessed on 2019-12-13.)  
DOI [10.5281/zenodo.3530342](https://doi.org/10.5281/zenodo.3530342)

**Version**

[concepticon.clld.org](#) serves the latest [released version](#) of data curated at [concepticon/concepticon-data](#). Older released version are accessible via DOI [10.5281/zenodo.596412](https://doi.org/10.5281/zenodo.596412) on ZENODO as well.

# Towards a semantic map of emotion concepts

Which concepts?

Showing 1 to 100 of 132 entries (filtered from 3,588 total entries)

ID	Name	Definition	Semantic field	Ontological category	Representation
1	CONTEMPTIBLE	Deserving of contempt or scorn.	Emotions and values	Property	1
3	BRAVE	Having or characterized by courage.	Emotions and values	Property	12
13	DECEIT	The act or practice of deceiving.	Emotions and values	Person/Thing	7
26	UNPLEASANT	Not to one's liking.	Emotions and values	Property	2
39	KEEN	Full of or characterized by enthusiasm.	Emotions and values	Property	2
40	ENVY	A feeling of discontent or covetousness with regard to another's advantages, success, possessions, etc.	Emotions and values	Person/Thing	8
45	EVIL	Intending to harm or being/acting ethically wrong.	Emotions and values	Property	12
56	BAD LUCK	An undesirable event such as an accident.	Emotions and values	Person/Thing	6
82	ANGER	Belligerence aroused by a real or supposed wrong (personified as one of the deadly sins).	Emotions and values	Person/Thing	8
91	INSOLENT	Unrestrained by convention or propriety.	Emotions and values	Property	2

# Towards a semantic map of emotion concepts

## Which concepts?

### Properties

AMAZING	GREEDY
ANGRY	HAPPY
ASHAMED	HONEST
ASTONISHED	IMPORTANT
BAD	INSOLENT
BEAUTIFUL	KEEN
BORING	KIND OR POLITE
BRAVE	LOVELY
CLEVER	MERRY
CONTEMPTIBLE	PASSIONATE
CORRECT (RIGHT)	PROUD
CRUEL	RUDE
CUNNING	SAD
DEAR	SHY
DILIGENT	SORROWFUL
DREADFUL	SURPRISED
EVIL	TRUE
EXACT	UGLY
FAITHFUL	UNPLEASANT
GENTLE	VULGAR
GLOOMY	WRONG
GOOD	

43

### Action/process

BE ANGRY	HOPE
BECOME ANGRY	KISS
CARP	LAUGH
CHOOSE	LIE (MISLEAD)
CRY	LIKE
DARE	LOVE
DELIGHT	PLAY
DESIRE	REGRET
EMBRACE	REJOICE
FEAR (BE AFRAID)	RESPECT (SOMEBODY)
FEAR OR FRIGHTEN	REVENGE
FLIRT	SMILE
FORGIVE	WANT
GRIEVE	WORRY
GROAN	
HATE	

30

### Entity/thing

ANGER	INCLINATION
ANXIETY	JEALOUSY
BAD LUCK	JOY
BLAME	MISTAKE
COWARD	PAIN
CUNNING PERSON	PITY
DANGER	PRAISE
DECEIT	RESPECT (NOUN)
ENVY	SHAME
FAULT	TEAR (OF EYE)
FEAR (FRIGHT)	TRUTH
GOOD LUCK	UNTRUTH
GRIEF	

25

# Towards a semantic map of emotion concepts

## Which concepts?

### Properties

AMAZING	GREEDY
ANGRY	HAPPY
ASHAMED	HONEST
ASTONISHED	IMPORTANT
BAD	INSOLENT
BEAUTIFUL	KEEN
BORING	KIND OR POLITE
BRAVE	LOVELY
CLEVER	MERRY
CONTEMPTIBLE	PASSIONATE
CORRECT (RIGHT)	PROUD
CRUEL	RUDE
CUNNING	SAD
DEAR	SHY
DILIGENT	SORROWFUL
DREADFUL	SURPRISED
EVIL	TRUE
EXACT	UGLY
FAITHFUL	UNPLEASANT
GENTLE	VULGAR
GLOOMY	WRONG
GOOD	

43



ANGRY	TRUE
ASHAMED	UGLY
BAD	WRONG
BEAUTIFUL	
BRAVE	
CLEVER	
CORRECT (RIGHT)	
CUNNING	
DEAR	
DILIGENT	
EVIL	
FAITHFUL	
GENTLE	
GOOD	
GREEDY	
HAPPY	
HONEST	
MERRY	
PROUD	
SAD	
SHY	
SURPRISED	

25 (attested)

Clics<sup>2</sup> (<https://clics.clld.org>)



# Towards a semantic map of emotion concepts

## Which concepts?

### Properties

AMAZING	GREEDY
ANGRY	HAPPY
ASHAMED	HONEST
ASTONISHED	IMPORTANT
BAD	INSOLENT
BEAUTIFUL	KEEN
BORING	KIND OR POLITE
BRAVE	LOVELY
CLEVER	MERRY
CONTEMPTIBLE	PASSIONATE
CORRECT (RIGHT)	PROUD
CRUEL	RUDE
CUNNING	SAD
DEAR	SHY
DILIGENT	SORROWFUL
DREADFUL	SURPRISED
EVIL	TRUE
EXACT	UGLY
FAITHFUL	UNPLEASANT
GENTLE	VULGAR
GLOOMY	WRONG
GOOD	

43



ANGRY	TRUE
ASHAMED	UGLY
BAD	WRONG
BEAUTIFUL	
BRAVE	
CLEVER	
CORRECT (RIGHT)	
CUNNING	
DEAR	
DILIGENT	
EVIL	
FAITHFUL	
GENTLE	
GOOD	
GREEDY	
HAPPY	
HONEST	
MERRY	
PROUD	
SAD	
SHY	
SURPRISED	

25 (attested)

Clics<sup>2</sup> (<https://clics.clld.org>)



ANGRY
BAD
BEAUTIFUL
BRAVE
CLEVER
CORRECT (RIGHT)
DEAR
DILIGENT
EVIL
FAITHFUL
GENTLE
GOOD
HAPPY
MERRY
PROUD
SAD
SURPRISED
TRUE
UGLY
WRONG

20 (colexified)

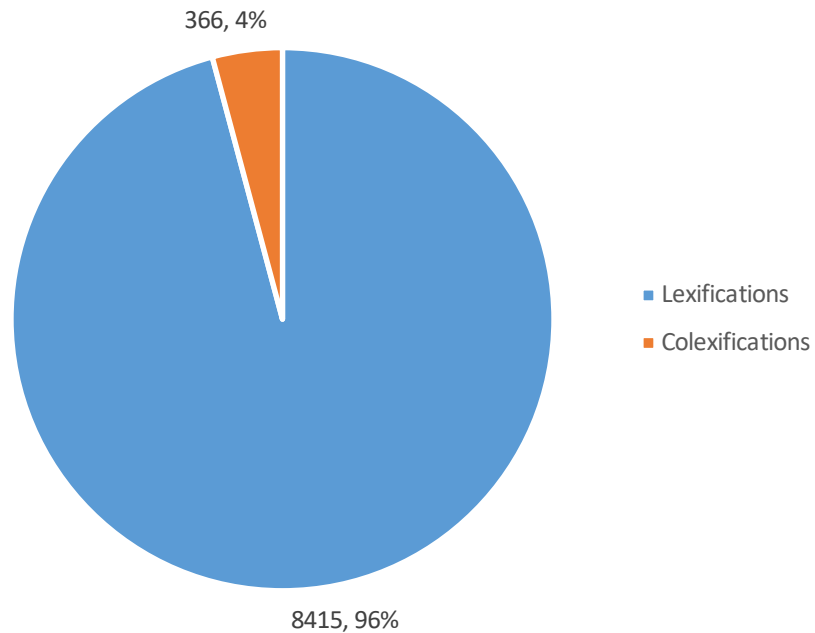
Clics<sup>2</sup> (<https://clics.clld.org>)

# Towards a semantic map of emotion concepts

## Emotions (properties) in CLICS<sup>2</sup> (colexifications in 1220 languages)

- ANGRY
- BAD
- BEAUTIFUL
- BRAVE
- CLEVER
- CORRECT (RIGHT)
- DEAR
- DILIGENT
- EVIL
- FAITHFUL
- GENTLE
- GOOD
- HAPPY
- MERRY
- PROUD
- SAD
- SURPRISED
- TRUE
- UGLY
- WRONG

Lexifications vs. colexifications



20 (colexified)

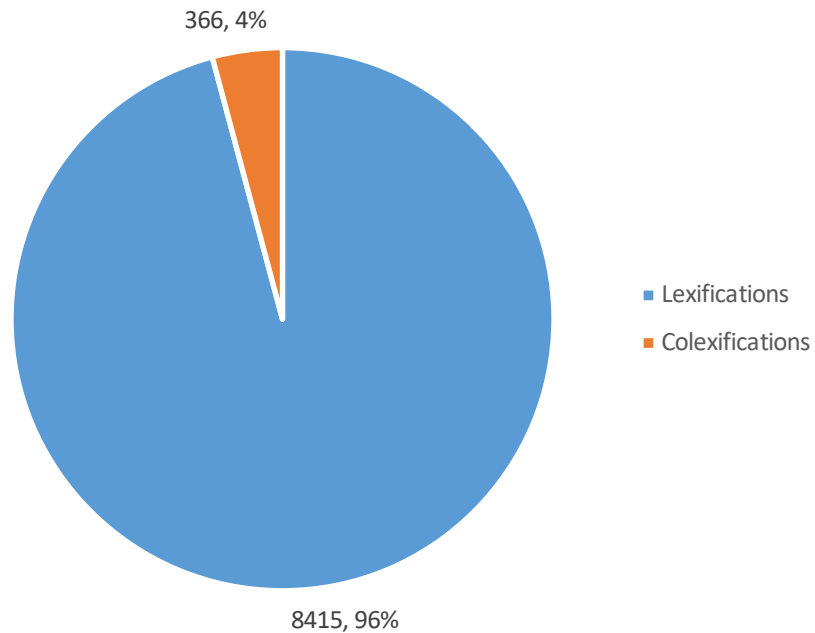
Clics<sup>2</sup> (<https://clics.clld.org>)

# Towards a semantic map of emotion concepts

## Emotions (properties) in CLICS<sup>2</sup> (colexifications in 1220 languages)

- ANGRY
- BAD
- BEAUTIFUL
- BRAVE
- CLEVER
- CORRECT (RIGHT)
- DEAR
- DILIGENT
- EVIL
- FAITHFUL
- GENTLE
- GOOD
- HAPPY
- MERRY
- PROUD
- SAD
- SURPRISED
- TRUE
- UGLY
- WRONG

Lexifications vs. colexifications



20 meanings



366 constraints



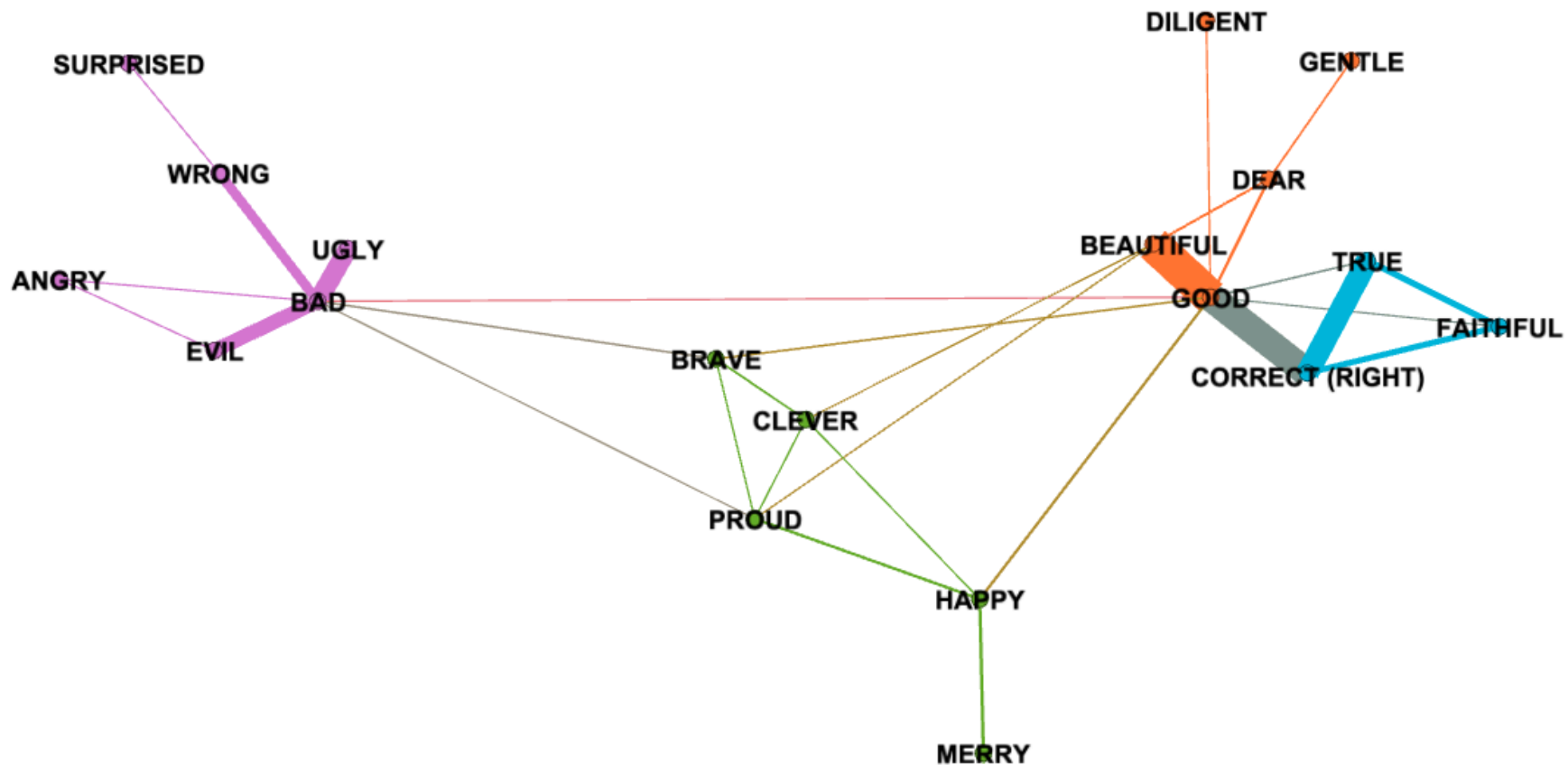
31 edges

20 (colexified)

Clics<sup>2</sup> (<https://clics.clld.org>)

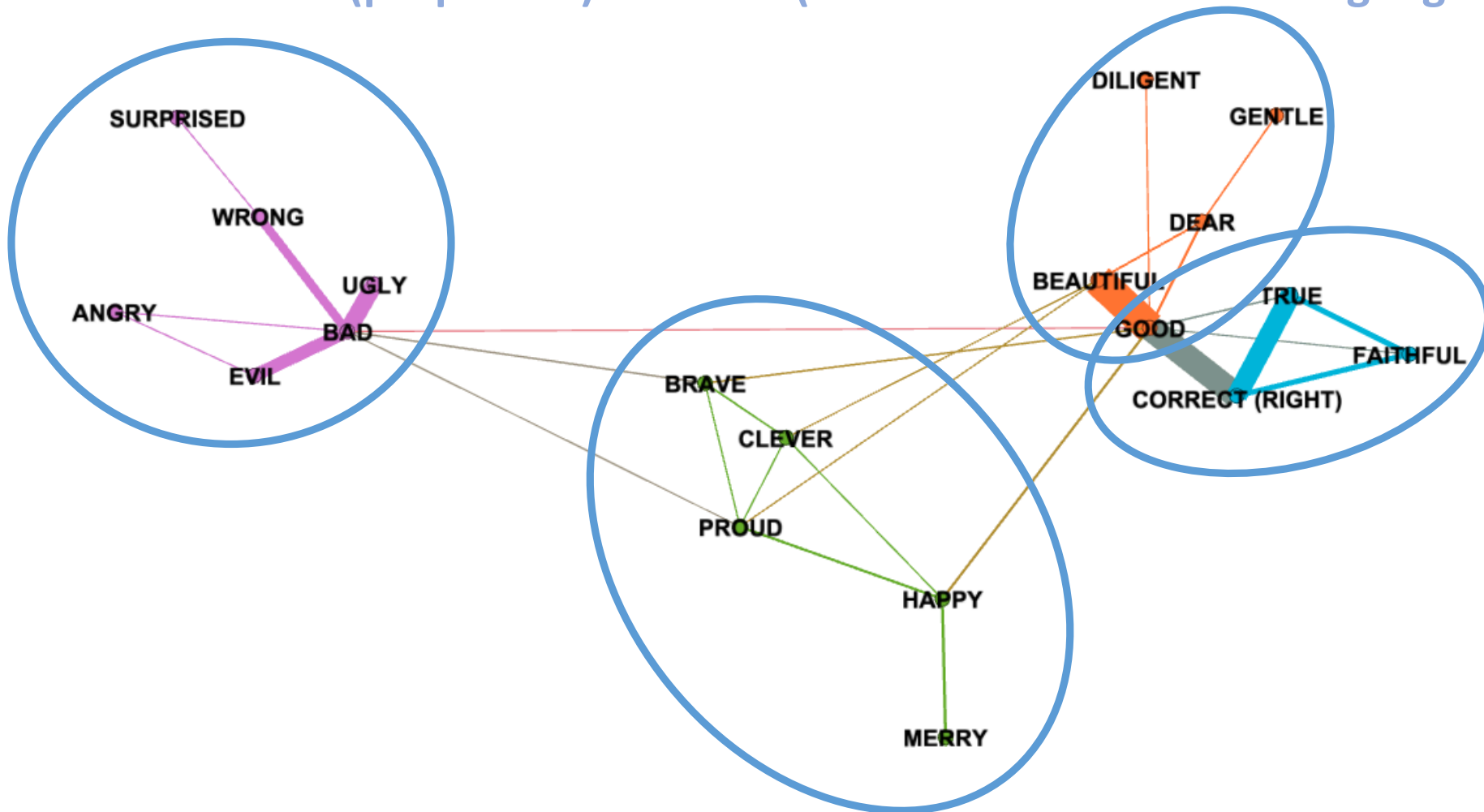
# Towards a semantic map of emotion concepts

Emotions (properties) in CLICS<sup>2</sup> (colexifications in 1220 languages)



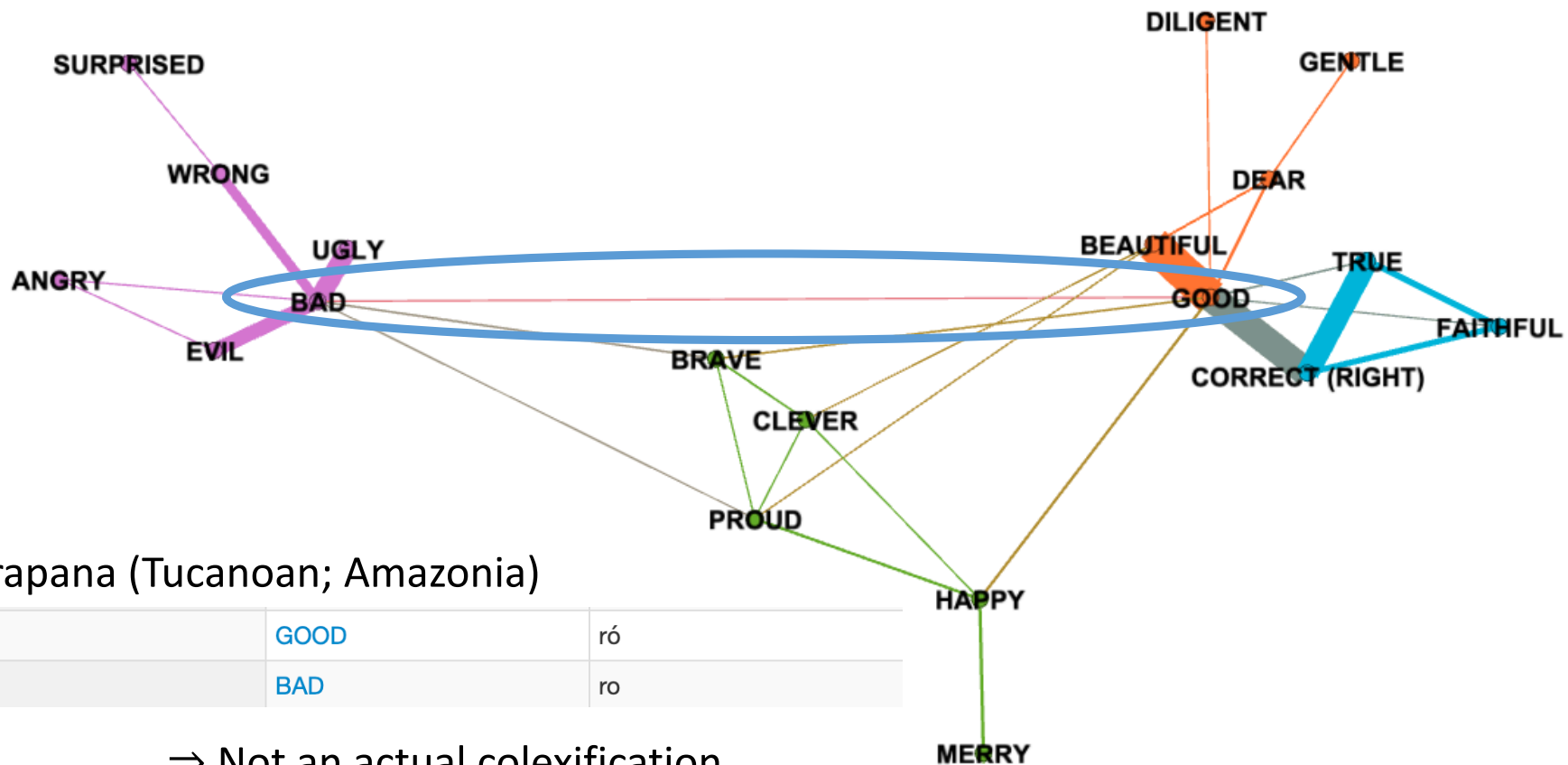
# Towards a semantic map of emotion concepts

Emotions (properties) in CLICS<sup>2</sup> (colexifications in 1220 languages)



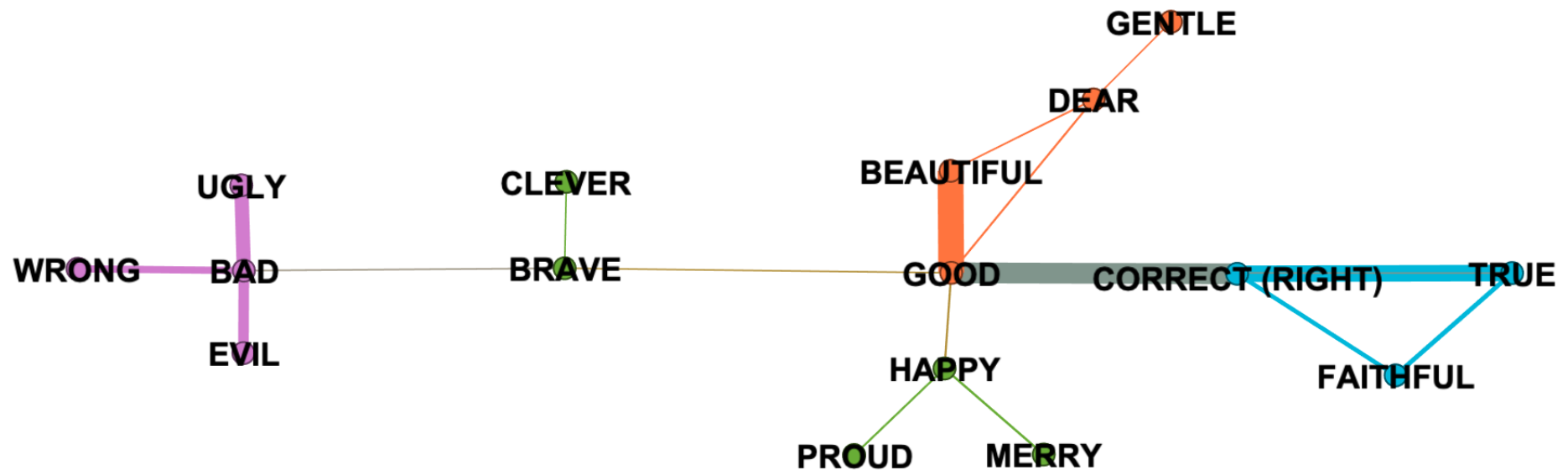
# Towards a semantic map of emotion concepts

Emotions (properties) in CLICS<sup>2</sup> (colexifications in 1220 languages)



# Towards a semantic map of emotion concepts

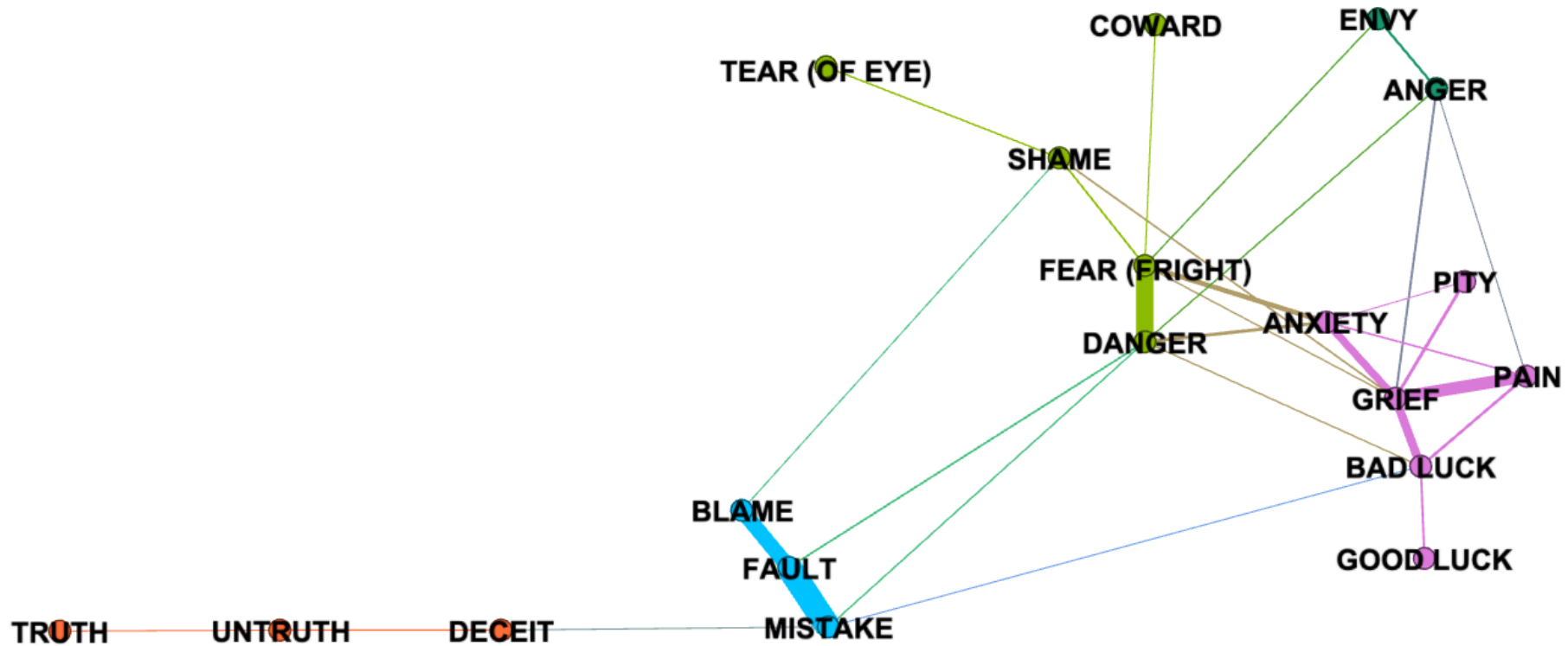
Emotions (properties) in CLICS<sup>2</sup> (colexifications in 1220 languages)



Semantic map based on colexification patterns attested in more than 1 language variety

# Towards a semantic map of emotion concepts

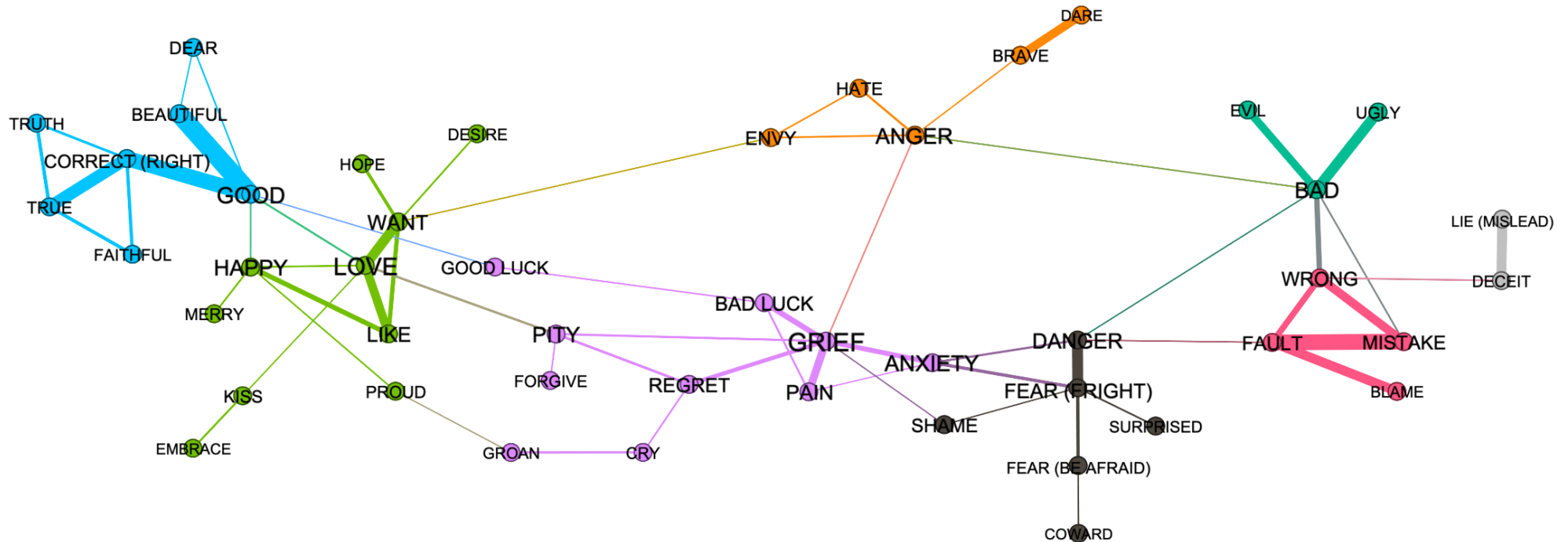
Emotions (thing) in CLICS<sup>2</sup> (colexifications in 1220 languages)



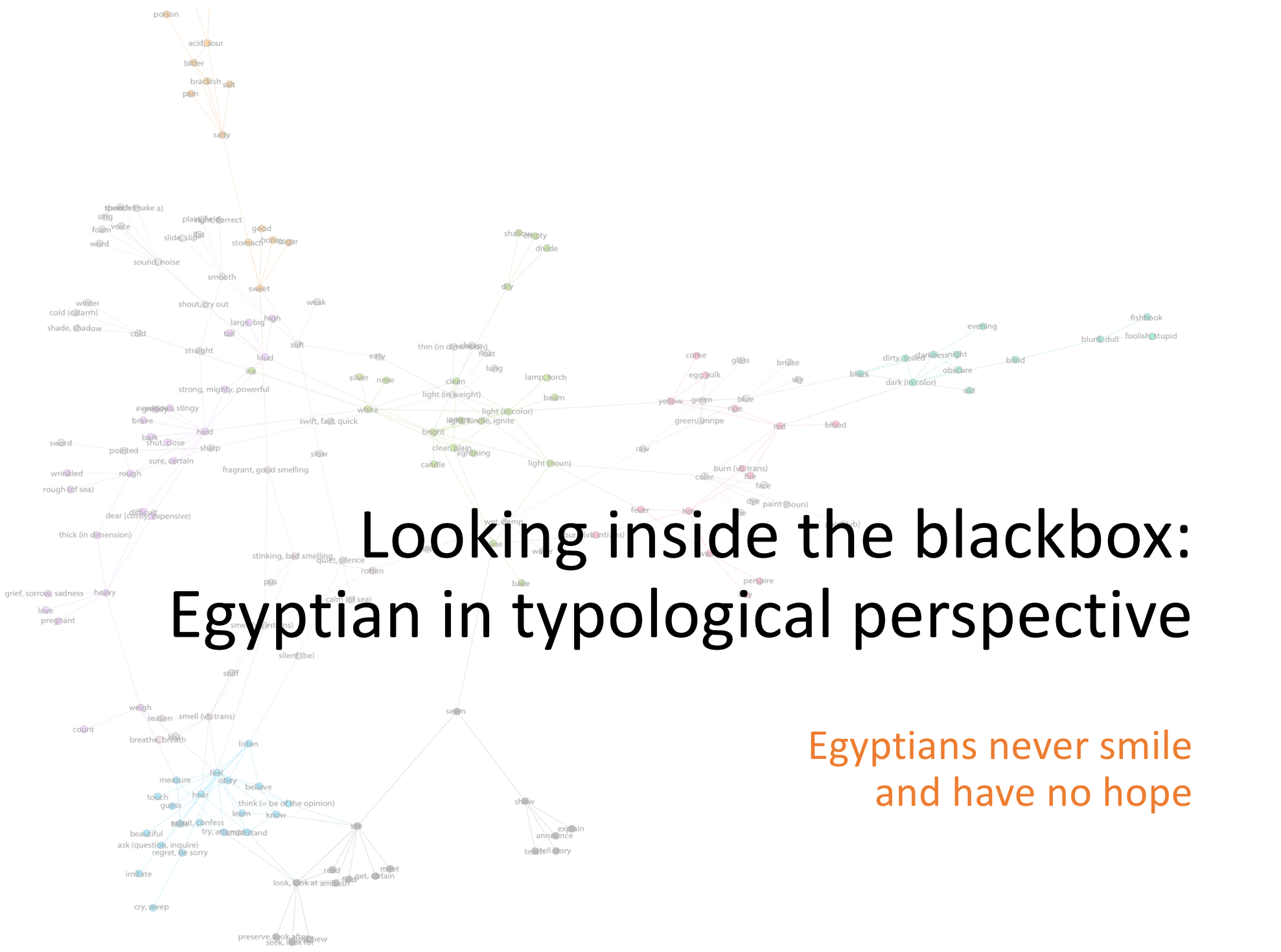


# Towards a semantic map of emotion concepts

## Emotions in the world languages



(63 nodes/151 edges > more than 2 languages > 47 nodes/66 edges)



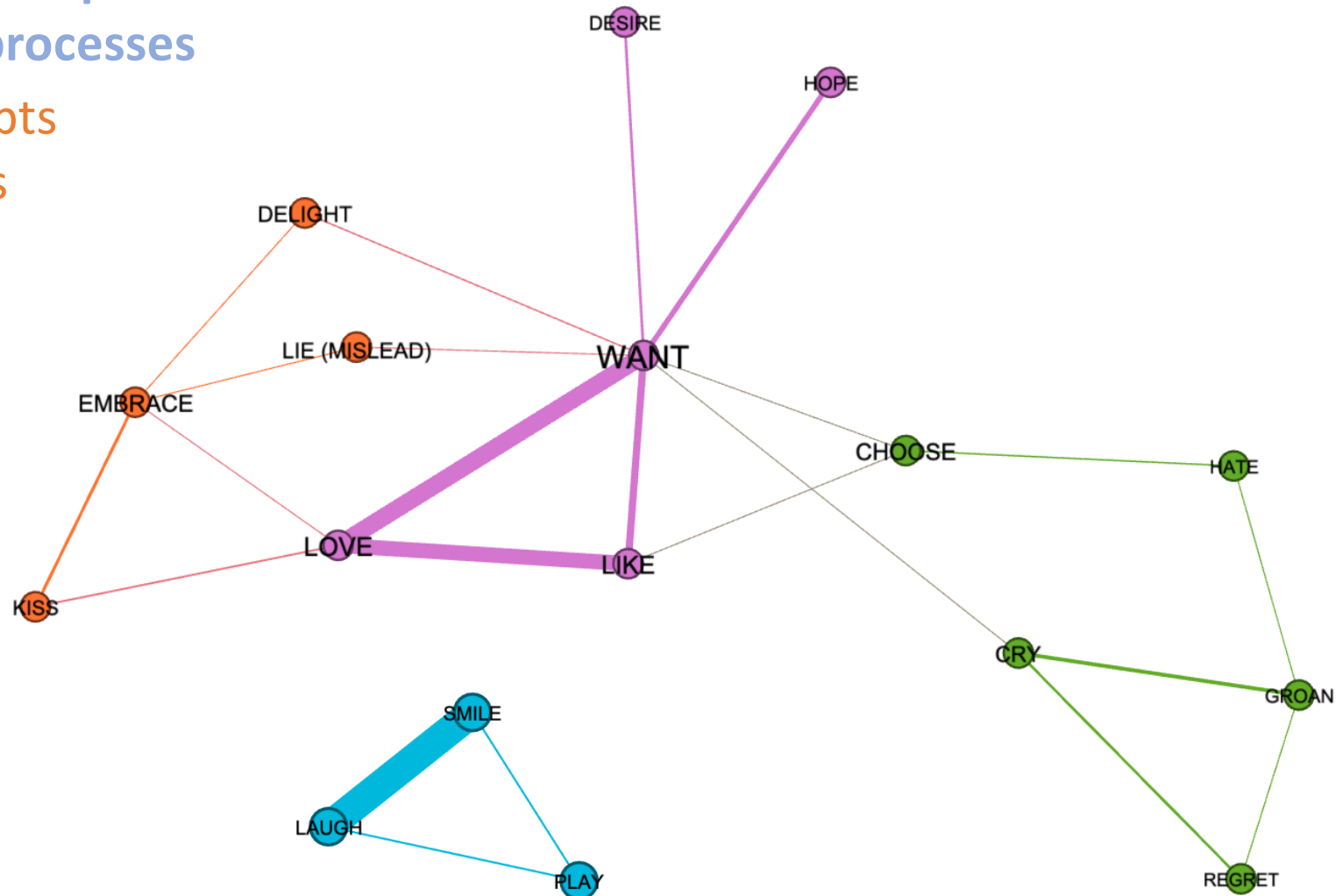
# Looking inside the blackbox: Egyptian in typological perspective

Egyptians never smile  
and have no hope

# Egyptian in typological perspective

## A semantic map of emotional processes

17 concepts  
23 links



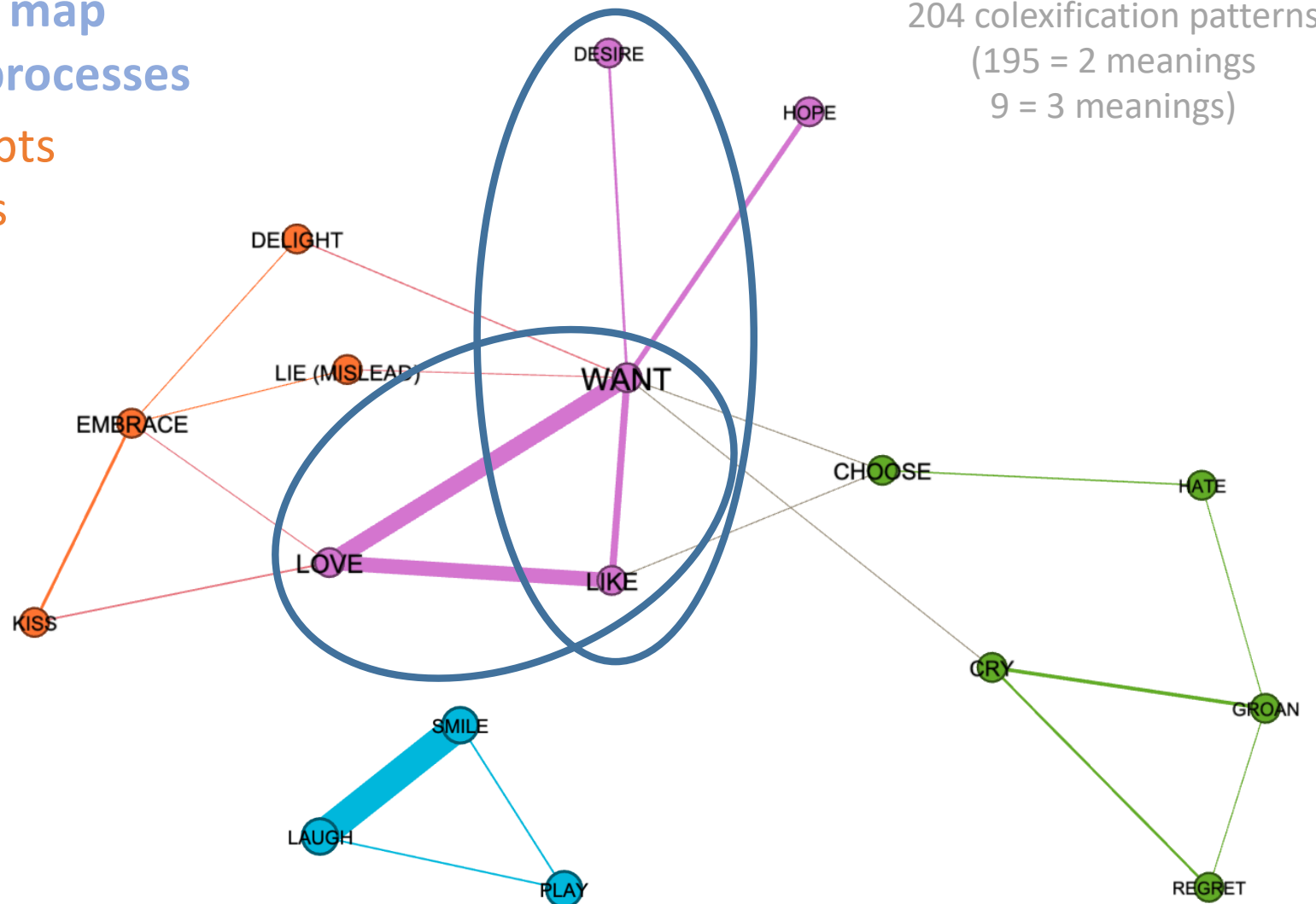
5 concepts are never colexified with other processes in the data set:

- Be angry
- Become angry
- Dare
- Fear (be afraid)
- Forgive

# Egyptian in typological perspective

## A semantic map of emotional processes

17 concepts  
23 links



5 concepts are never colexified with other processes in the data set:

- Be angry
- Become angry
- Dare
- Fear (be afraid)
- Forgive

# Egyptian in typological perspective

## Formal Concept Lattices as Semantic Maps

2017

Daria Ryzhova and Sergei Obiedkov

National Research University Higher School of Economics,  
Moscow, Russia

daria.ryzhova@mail.ru    sergei.obj@gmail.com

Concept Explorer

Files    Update: Clear dependent

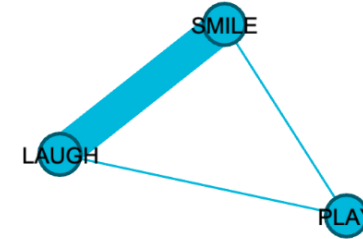
Document

emotions\_proc...  
context

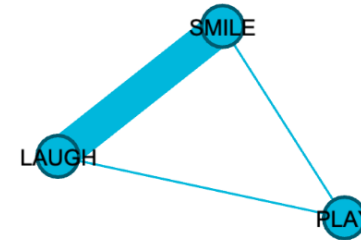
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
embrasser [French]											X	X						
uwakimikiki [Panare]											X	X						
gitbos [Archi (variety 2)]											X	X						
ondalas [Mari]																		
auee [Maori]													X		X			
tangihia [Maori]													X					
tangi [Rapa Nui]							X						X					
ciga [Aché]							X						X					
jaheo [Guarani]							X						X					
kuha [Proto Polynesian]						X												
buutbau [Aguaruna]							X											
hunay [Yagua]							X											
haya [Yavitero]							X								X			
oni [Uncunwee]							X								X			
limkidi [Botlikh (Miarso diale...]							X								X			
lashas [Aghul]					X										X			
sang2 [Nung-Fengshan]						X												
irwellen [Old High German]							X			X								
upu [Hawaiian]							X											
dewa [Araona]							X											
alwari [Uncunwee]							X											
ang3e1 [Dehong]							X											
ngli2mung6 [Nung-Ninbei]							X											
mau5mung6 [Zhuang-Longz...]							X											
mang6 [Sui]							X											
mjung33 [Southern Kam]							X											
na55pom35lo51 [Mang Ch]							X									X		
sujuw [Kazakh]										X								
swplarwn [Adyghe]		X						X				X						
sirel [Armenian]		X						X				X						
jaratwu [Bashkir]		X						X				X						
karut [Breton]		X						X				X						
durlaxa [Buryat]		X						X				X						
voyeti [Croatian]		X						X				X						
haudenvan [Dutch]		X						X				X						

Context Editor

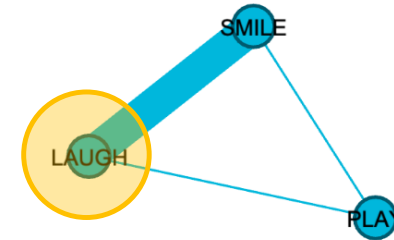
# Egyptian in typological perspective



# Egyptian in typological perspective



# Egyptian in typological perspective



belegt seit *syn*  
*lachen* cwBE: b cwBI.

I von Personen 5; bes.:  
 a) allein: lachen (aus Freude) 6.  
 b) spöttisch lachen über jem.  
 (mit m 7; Na mit n 8).  
 c) jemandem freundlich zu-  
 lachen (mit hft) 9.

seit <sup>xm</sup> meist *l*  
 seit <sup>219</sup> *l*, *l*e u.ä.  
 Det. <sup>a</sup> *l* meist *l*  
 seit <sup>m</sup> *l* *l* *l*

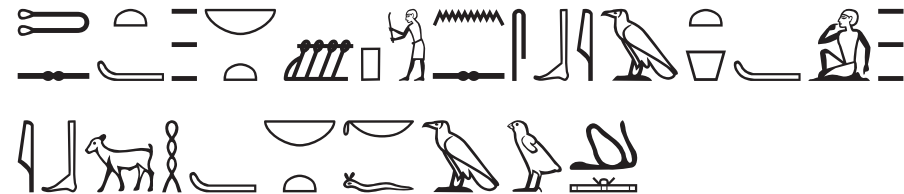
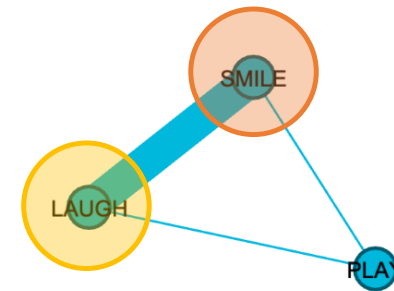
d) in dem Ausdruck:  
 lachenden Gesichts,  
 freundlich 10.

II. bildlich von den überschwemmen-  
 ten Feldern II. *syn*

Cf. Gobeil (2016: 192–193)



# Egyptian in typological perspective



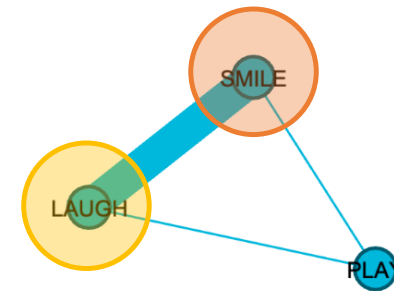
*ts.t nb.t šsp.n=s sbt*

*ibḥ nb kf3.w*

‘All the ‘dentitions’ started to laugh/smile,  
Every tooth is unveiled’ (Nile Hymnus, III, 7–8)

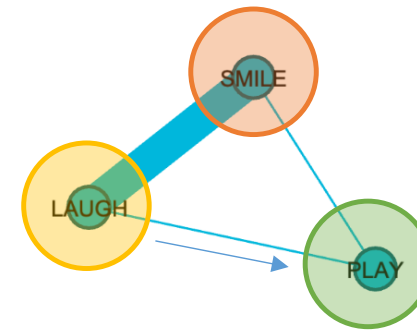
Cf. *nḥtḥ* in *PT*

# Egyptian in typological perspective



*wːt ir.t rjm, k.t sbj*  
 One eye cries, the other 'laughs'  
 (pLondon/Leiden VIII,2)

# Egyptian in typological perspective



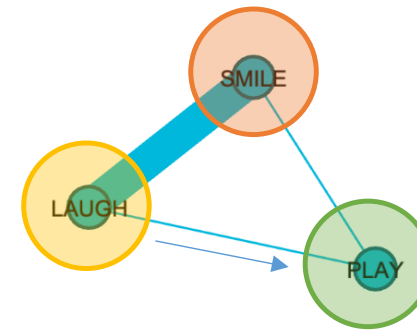
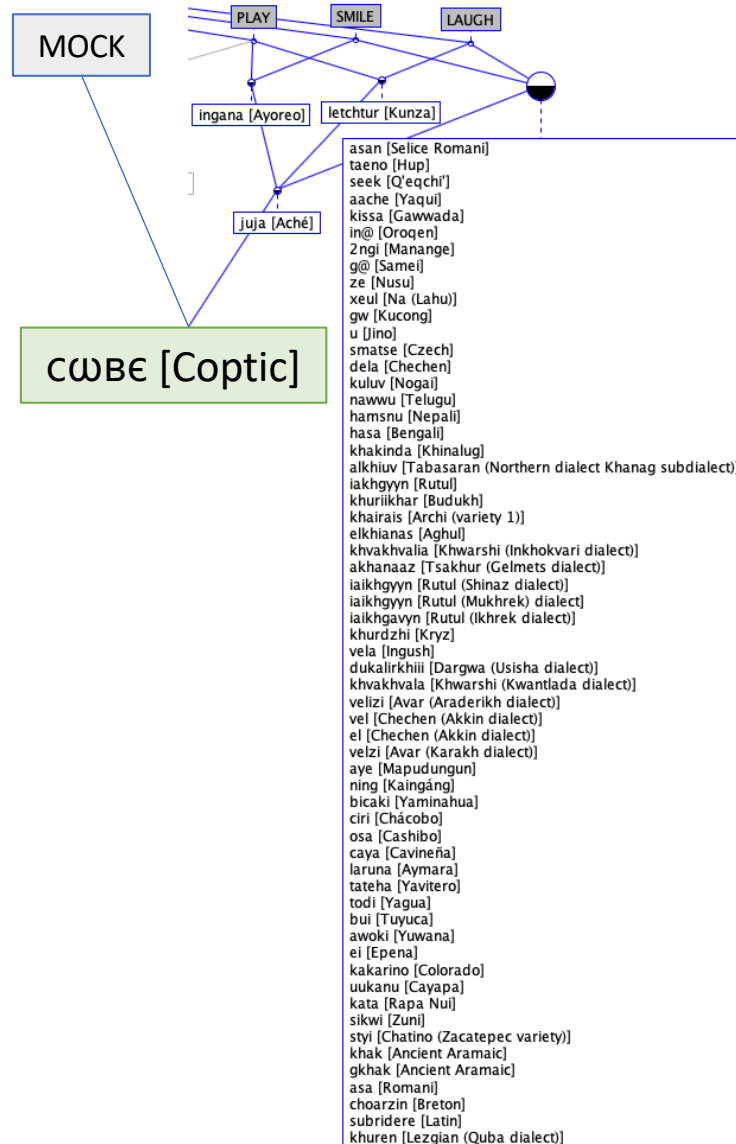
*wˤ.t ír.t rjm, k.t sbj*

One eye cries, the other 'laughs'  
 (pLondon/Leiden VIII,2)

Ἐκάθισεν ὁ λαὸς φαγεῖν καὶ πεῖν,  
 καὶ ἀνέστησαν **παίξουσιν**  
 δεαγεμοος νβιπλαος εογωμ εσω αγω  
 αγωωγν εσωβε

The people sat down to eat and drink,  
 and rose up to play (1 Cor 10,7)

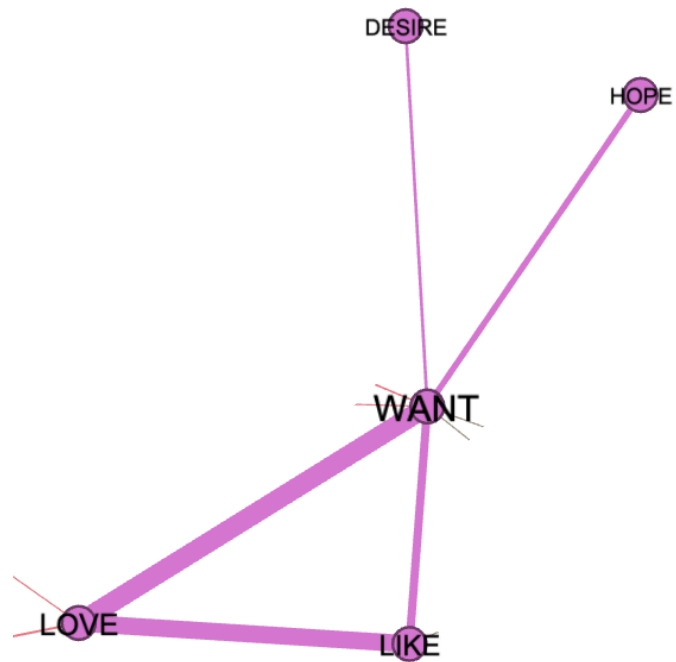
# Egyptian in typological perspective



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 αγωογν **εωβε**  
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# Egyptian in typological perspective



# Egyptian in typological perspective

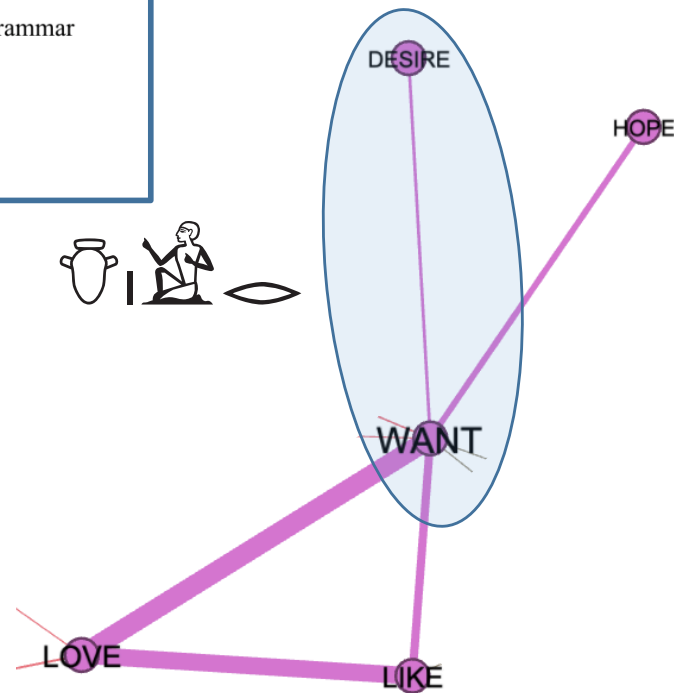
*On Forms and Functions*, 201-231

## The Verb *ib* and the Construction *ib=f r sdm\**

On modal semantics, graphemic contrasts, and gradience in grammar

Stéphane Polis & Andréas Stauder

Liège (F.R.S.-FNRS, ULg) & Paris (EPHE)



# Egyptian in typological perspective

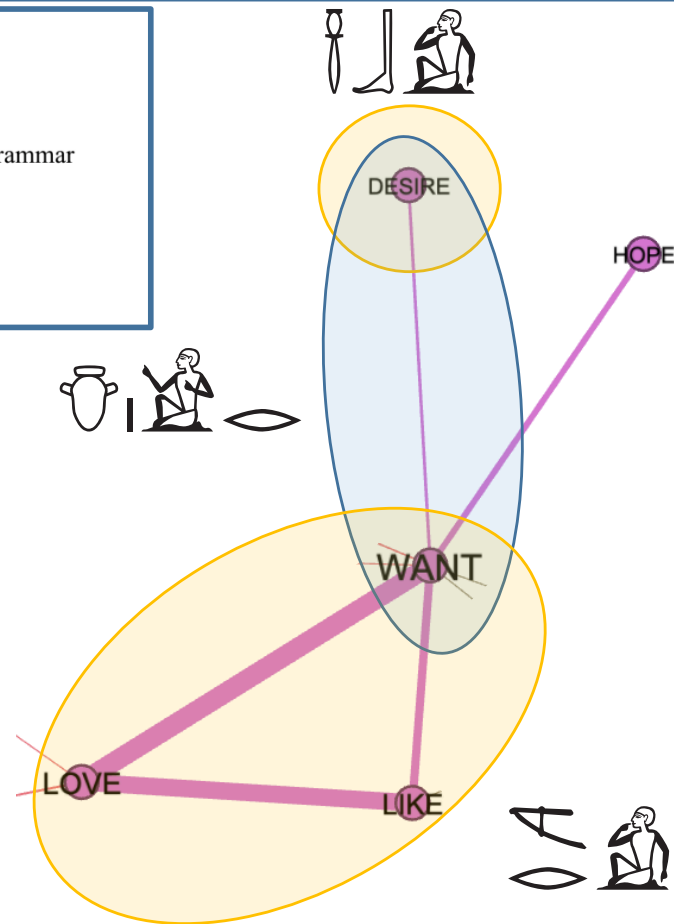
*On Forms and Functions*, 201-231

## The Verb *ib* and the Construction *ib=fr sdm*\*

On modal semantics, graphemic contrasts, and gradience in grammar

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*LingAeg* 17 (2009), 201-229

## Interaction entre modalité et subjectivité en néo-égyptien

Autour de la construction *mri* + *iw*<sub>circ.</sub> « souhaiter que »\*

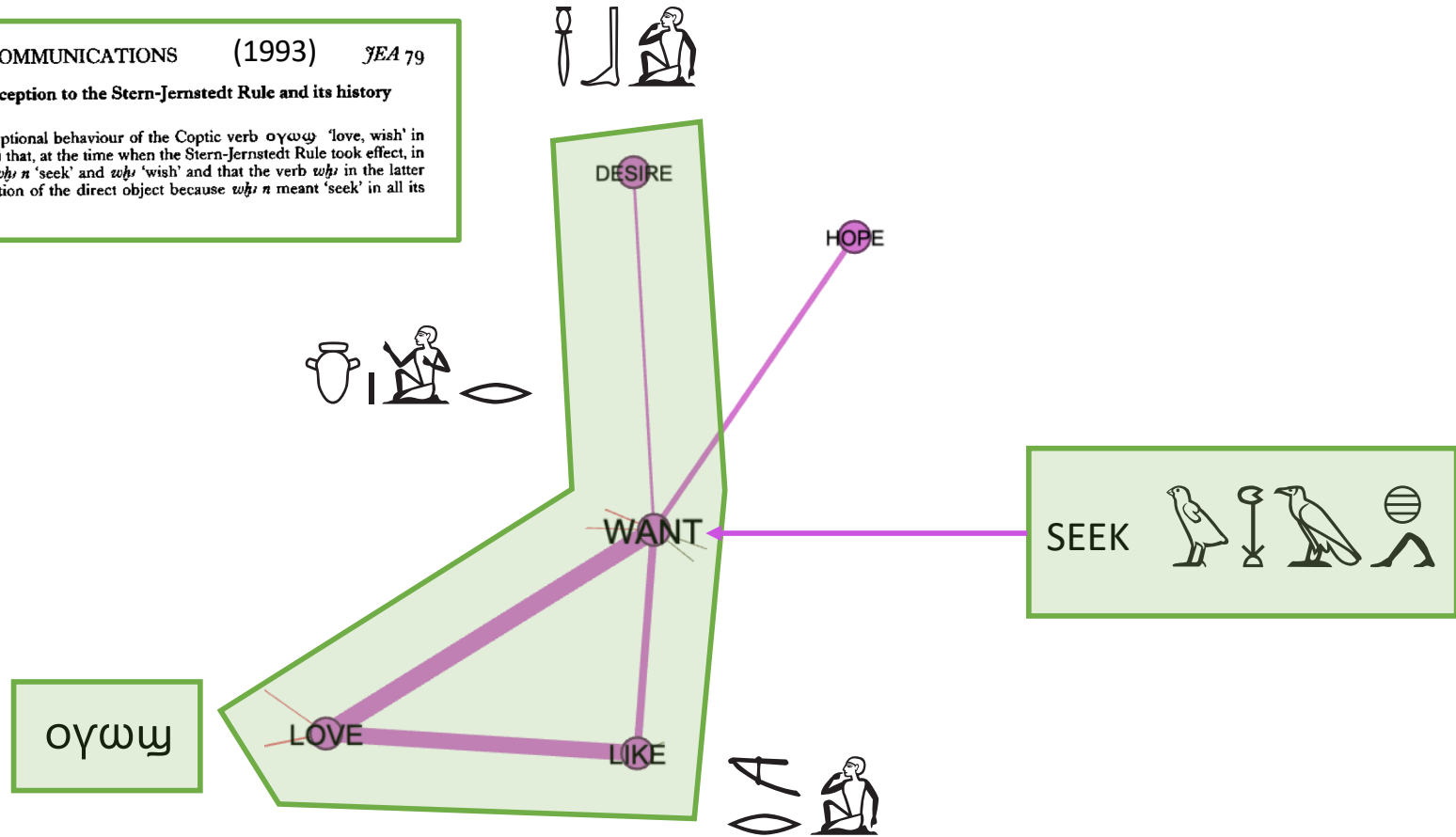
Stéphane Polis, Liège

# Egyptian in typological perspective

282 Depuydt BRIEF COMMUNICATIONS (1993) *JEA* 79

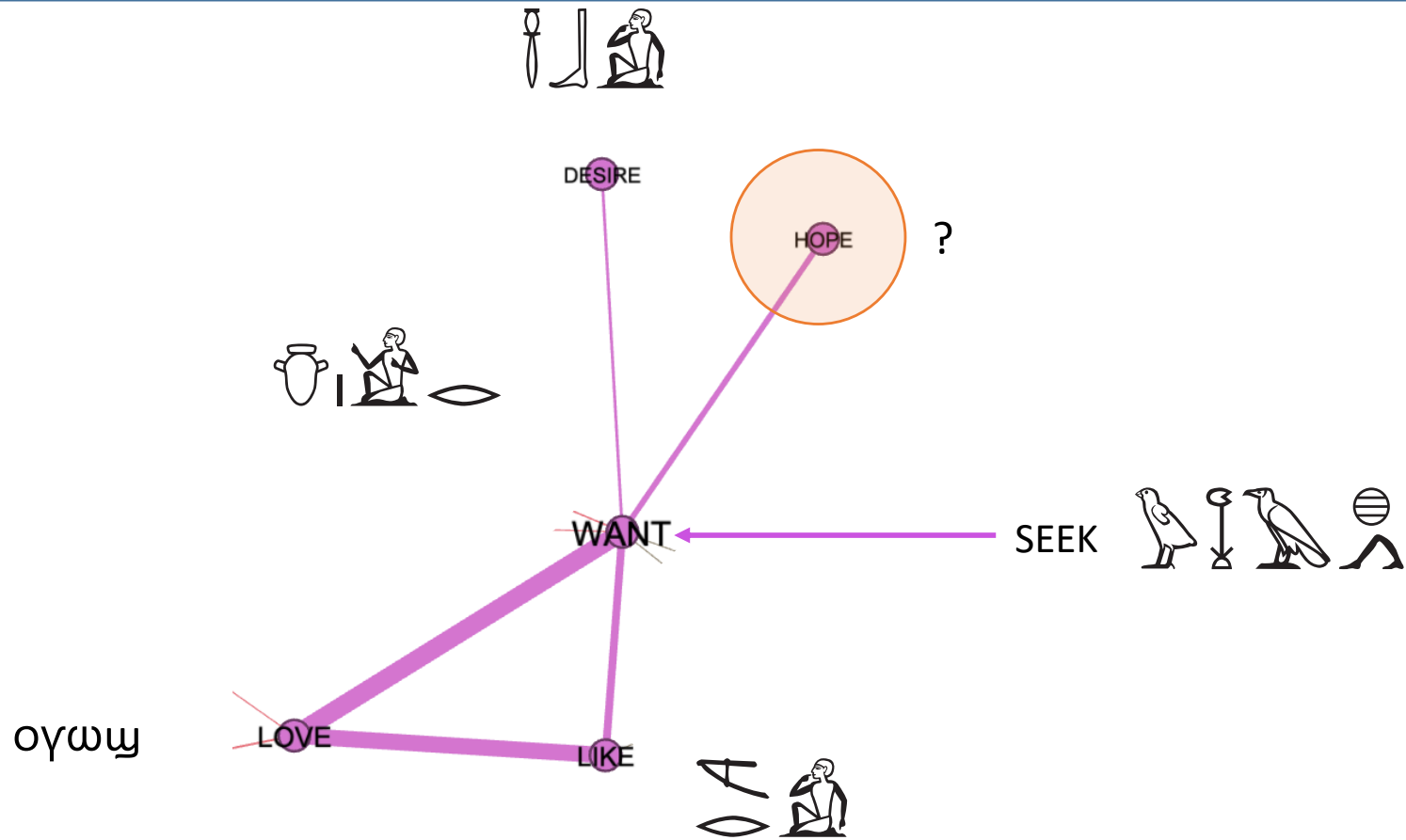
## For the sake of $\sigma\gamma\omega\psi$ , 'love': an exception to the Stern-Jernstedt Rule and its history

A historical explanation is offered for the exceptional behaviour of the Coptic verb  $\sigma\gamma\omega\psi$  'love, wish' in relation to the Stern-Jernstedt Rule. It is argued that, at the time when the Stern-Jernstedt Rule took effect, in early Demotic, there were two constructions  $w\dot{h}i\ n$  'seek' and  $w\dot{h}i$  'wish' and that the verb  $w\dot{h}i$  in the latter meaning was barred from the indirect connection of the direct object because  $w\dot{h}i\ n$  meant 'seek' in all its conjugations.

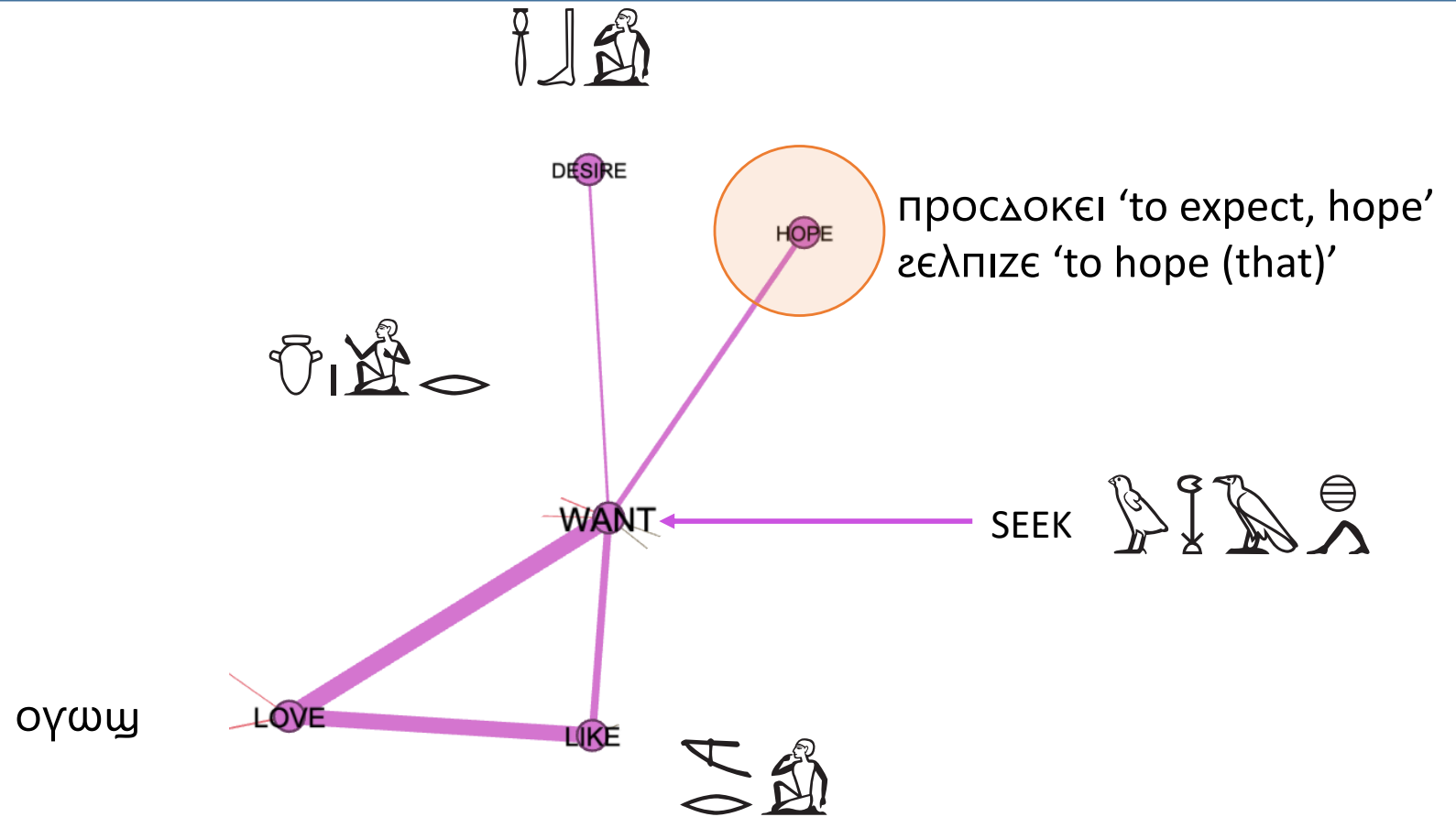




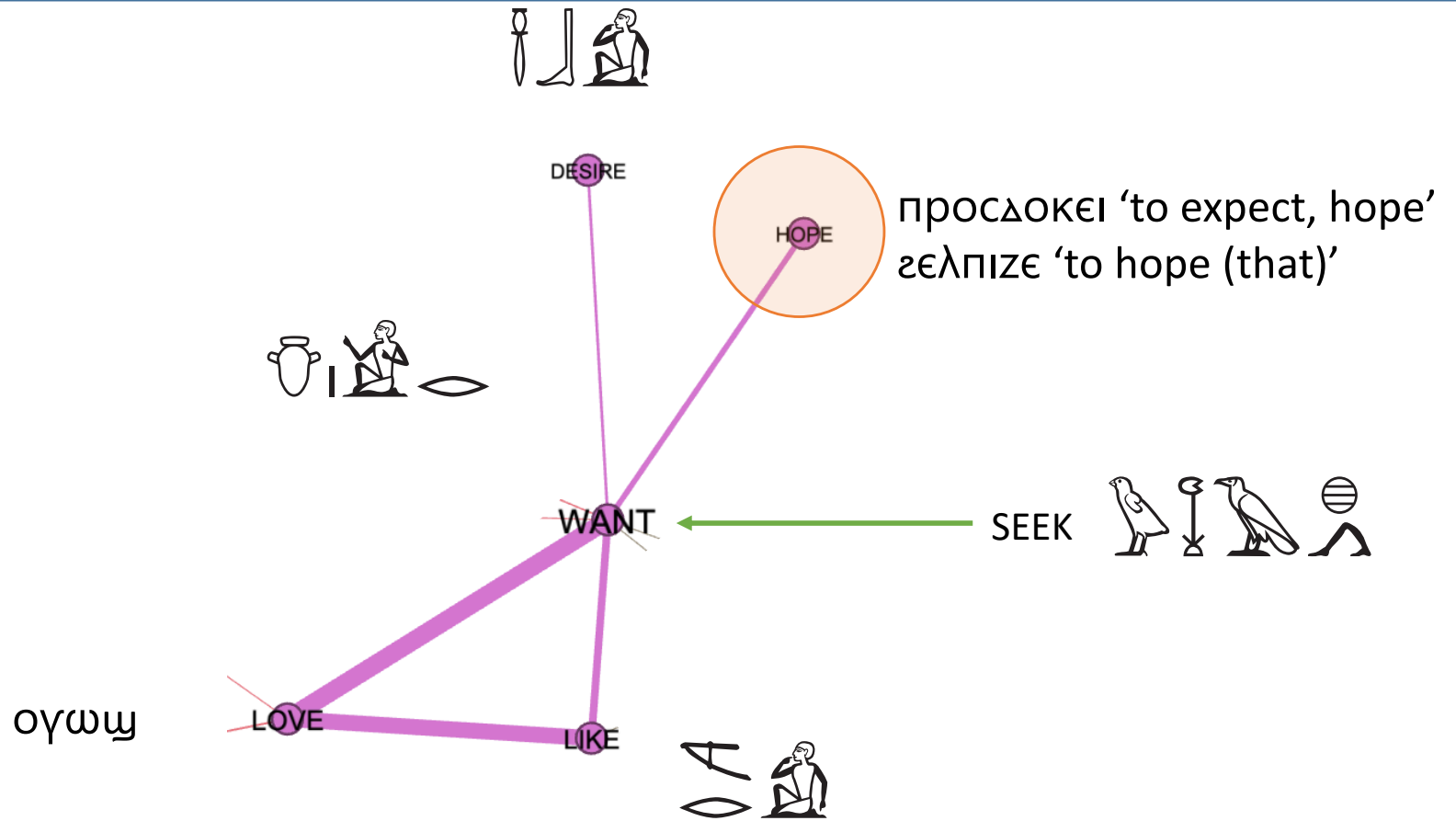
# Egyptian in typological perspective



# Egyptian in typological perspective



# Egyptian in typological perspective

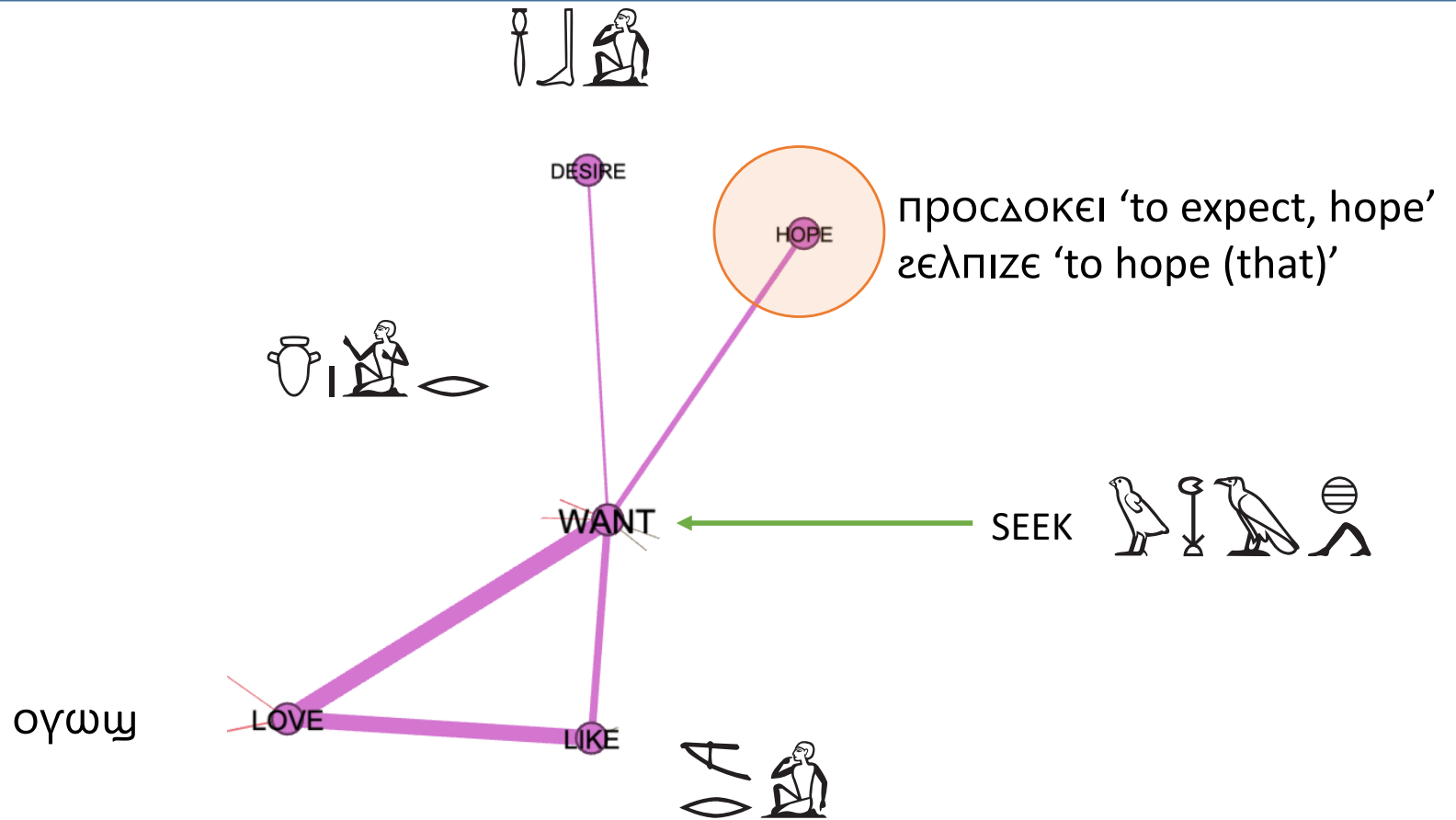


*iy.n=i im m p3 is dd m3=i p3 b3k*

'I came here in the tomb hoping to see the work (...)' (O. Senmut 78,1–2)

(r-)dd + sbjv.

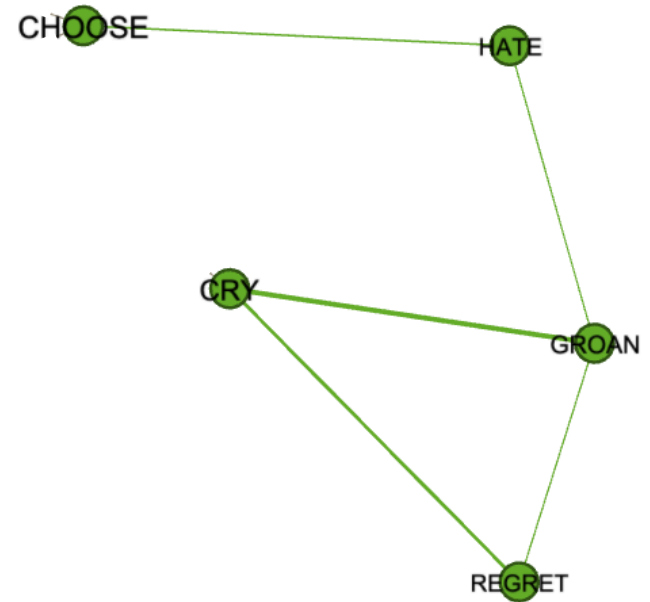
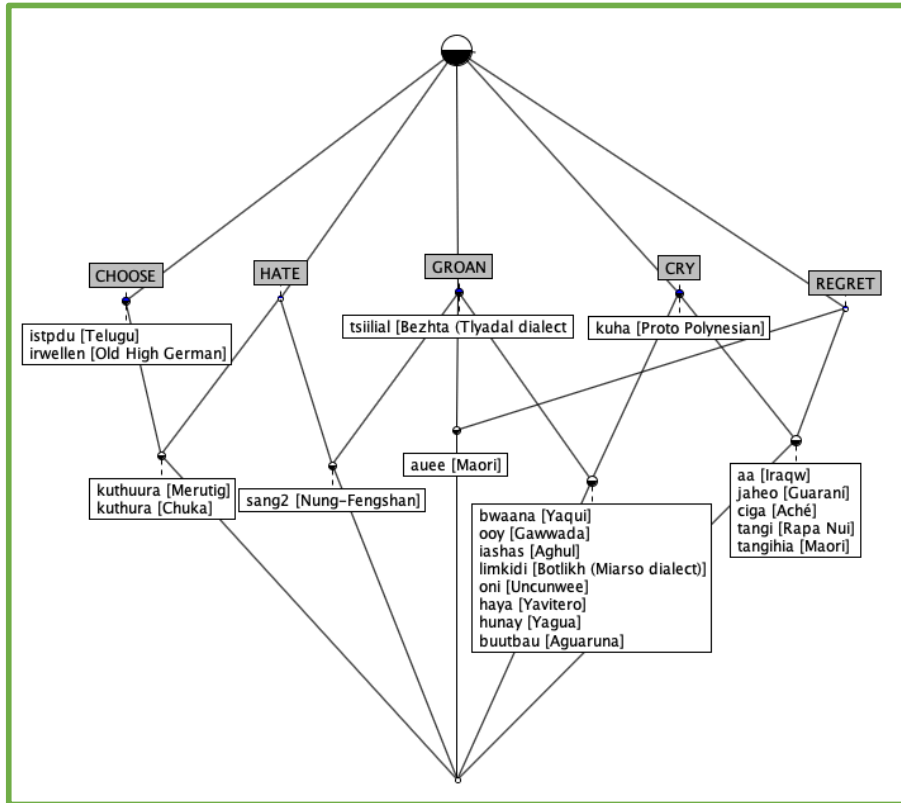
# Egyptian in typological perspective



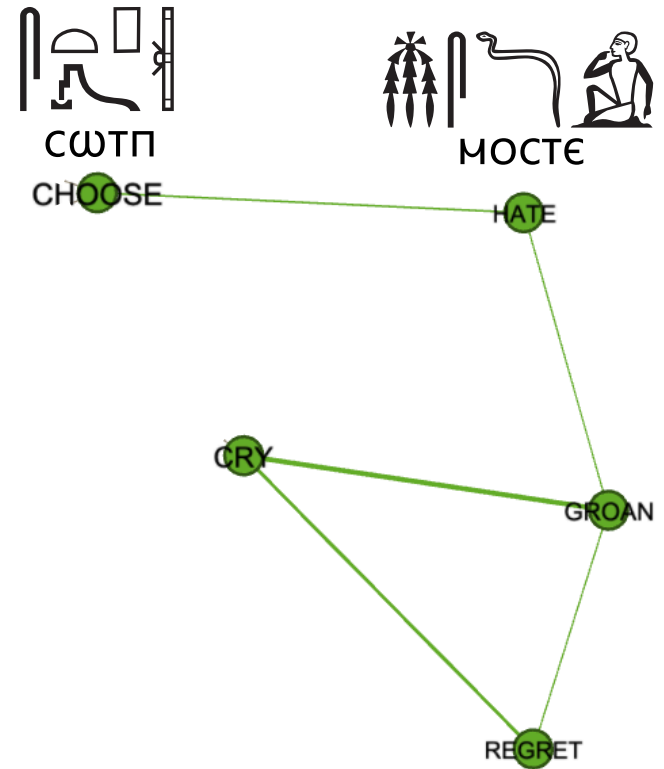
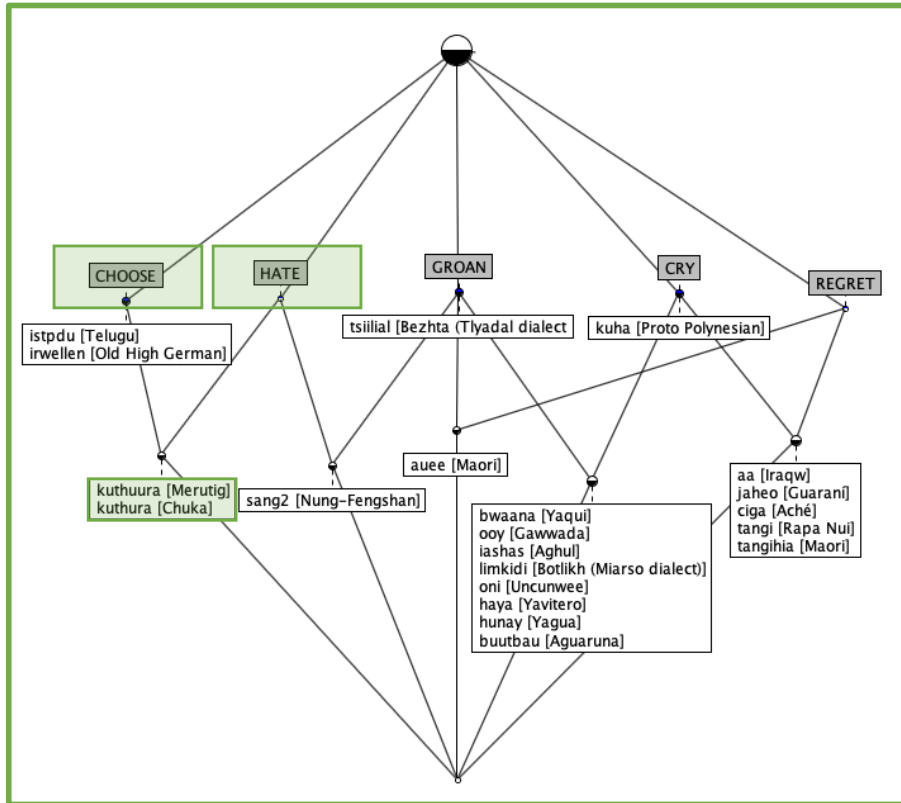
*i-ir=i nw r p3 kk.w r-dd h3y=f*

'I was looking at the darkness, hoping for it to fall' (*Wenamun* 1,42)

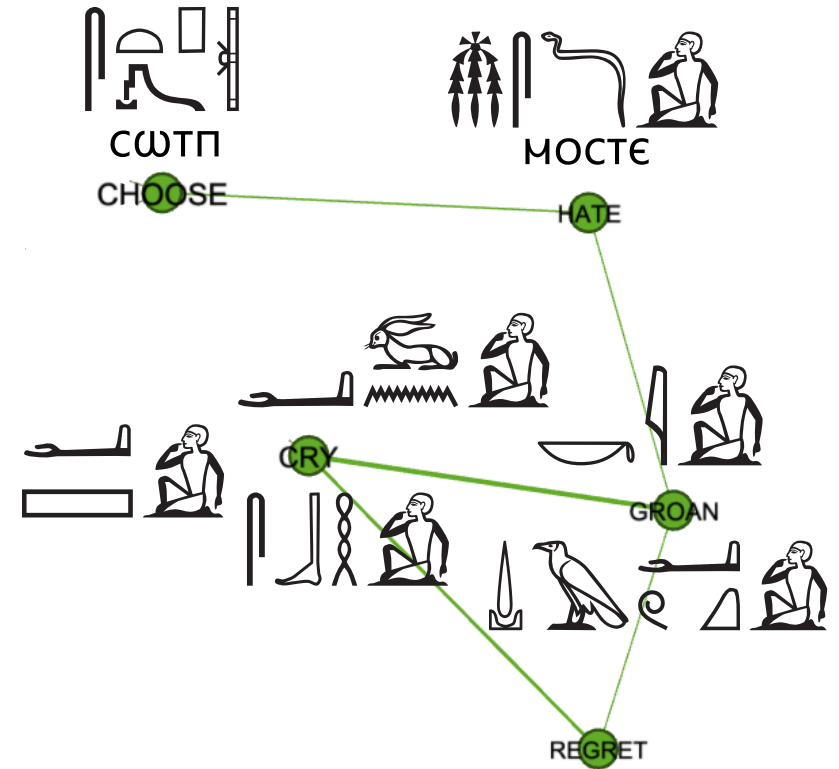
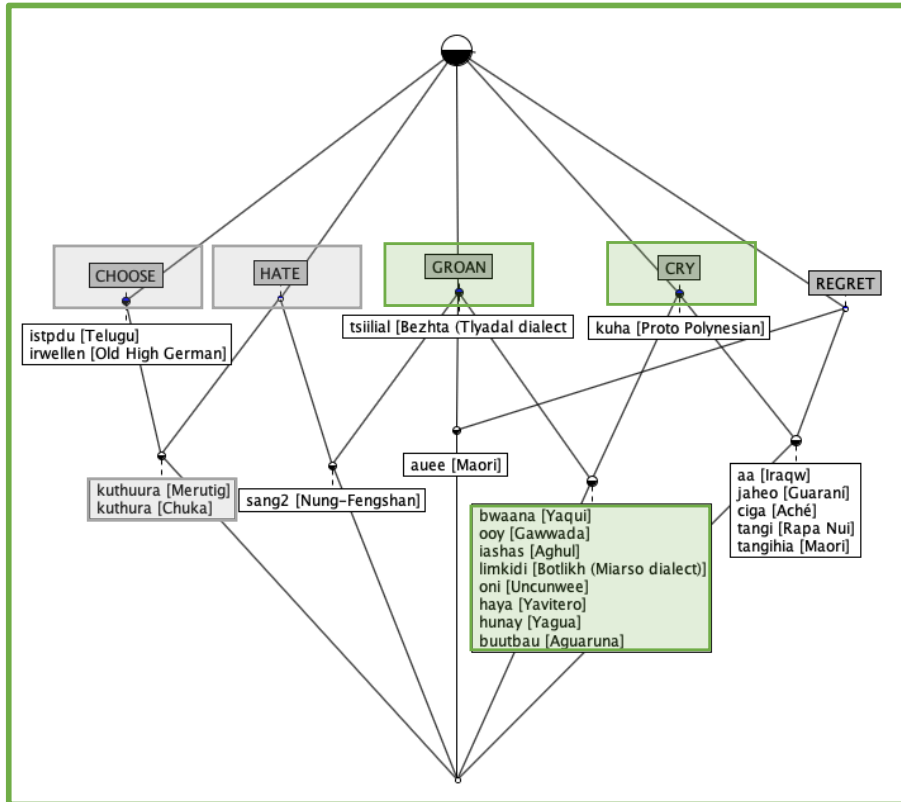
# Egyptian in typological perspective



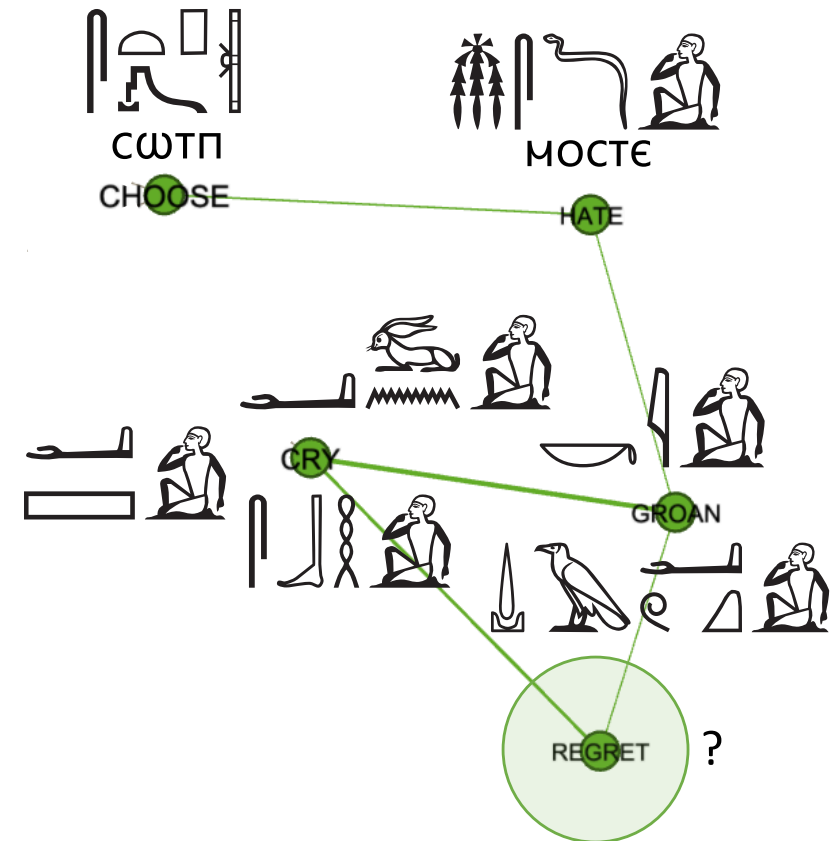
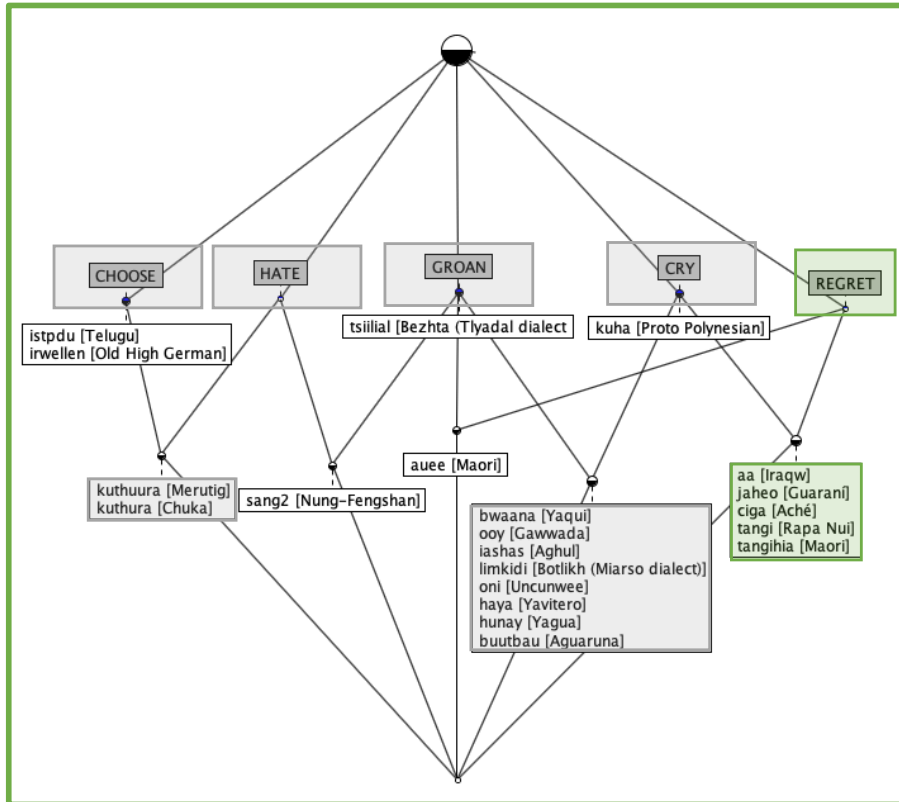
# Egyptian in typological perspective



# Egyptian in typological perspective



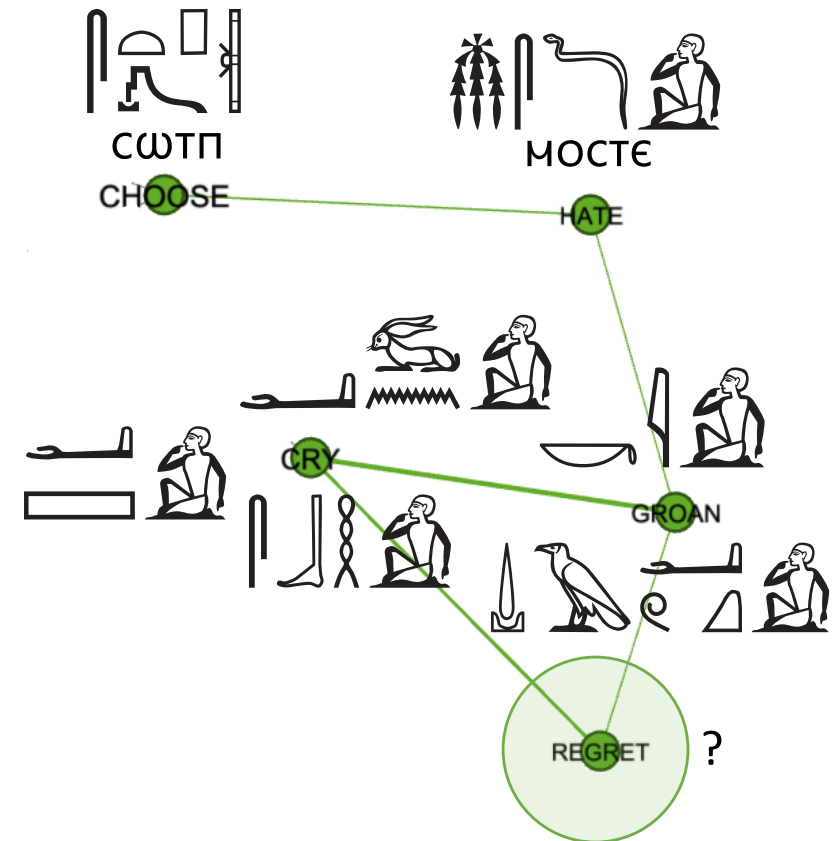
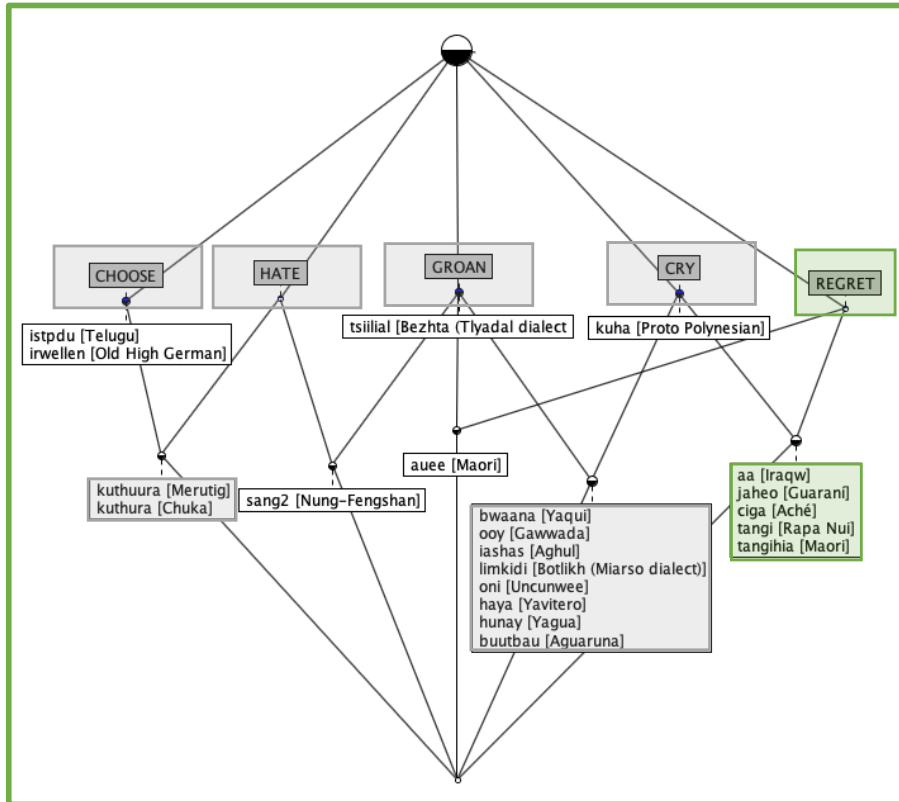
# Egyptian in typological perspective



Coptic ογωμζητ, lit. 'eat' (ογωμ) 'the heart, mind' (ζητ)  
 ρζητ, lit. 'do' (ρ) 'the heart, mind' (ζητ)



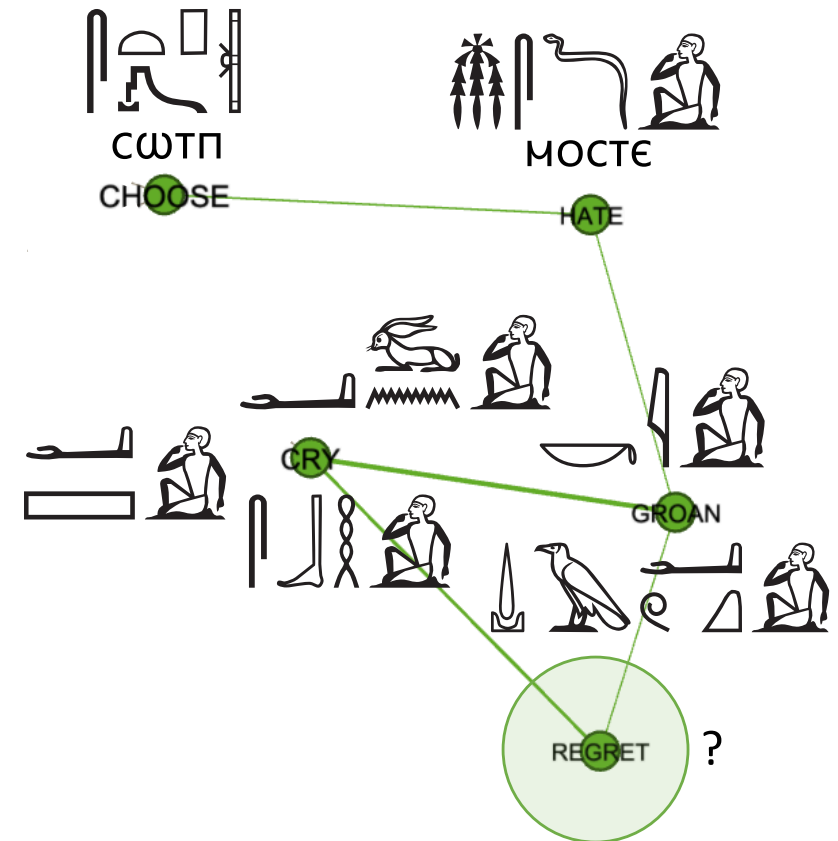
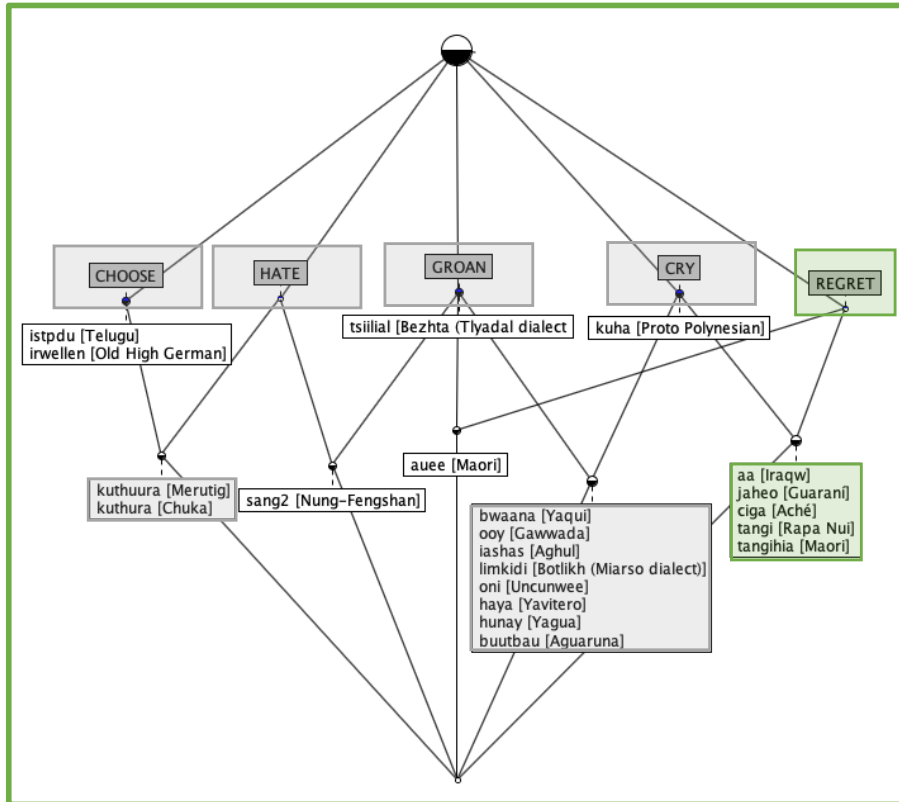
# Egyptian in typological perspective



*in-n3w rmt-swg jr h3tj=f, iw=f (r) ir rmt-rh*

'If a stupid man regrets/repents/reflects, he will be a wise man' (*Anchsheshonki, XIX,8*)

# Egyptian in typological perspective

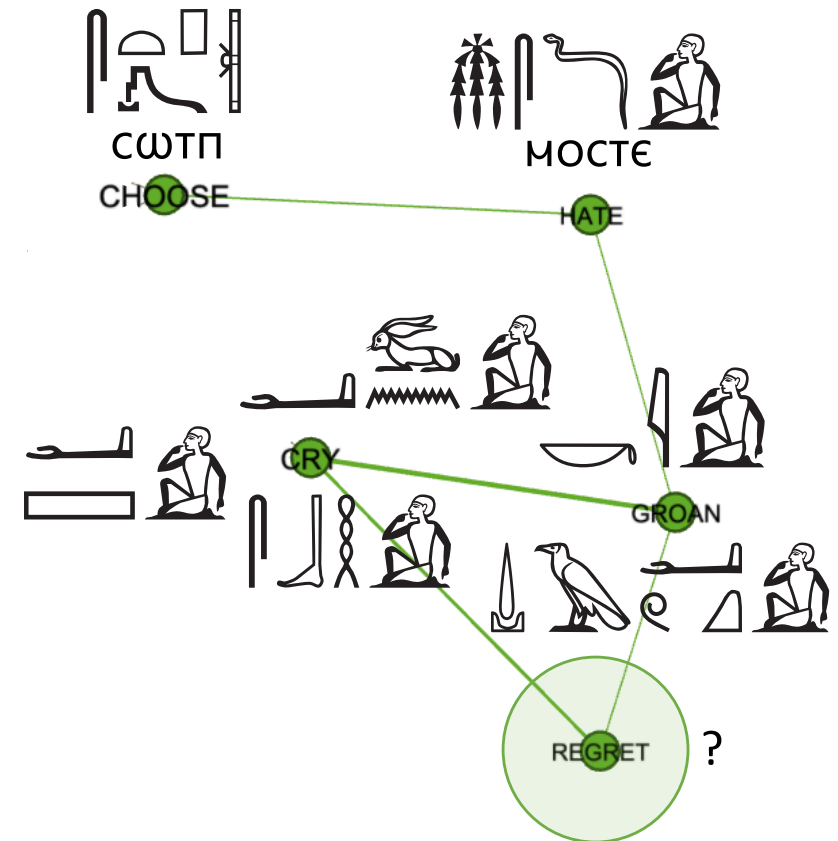
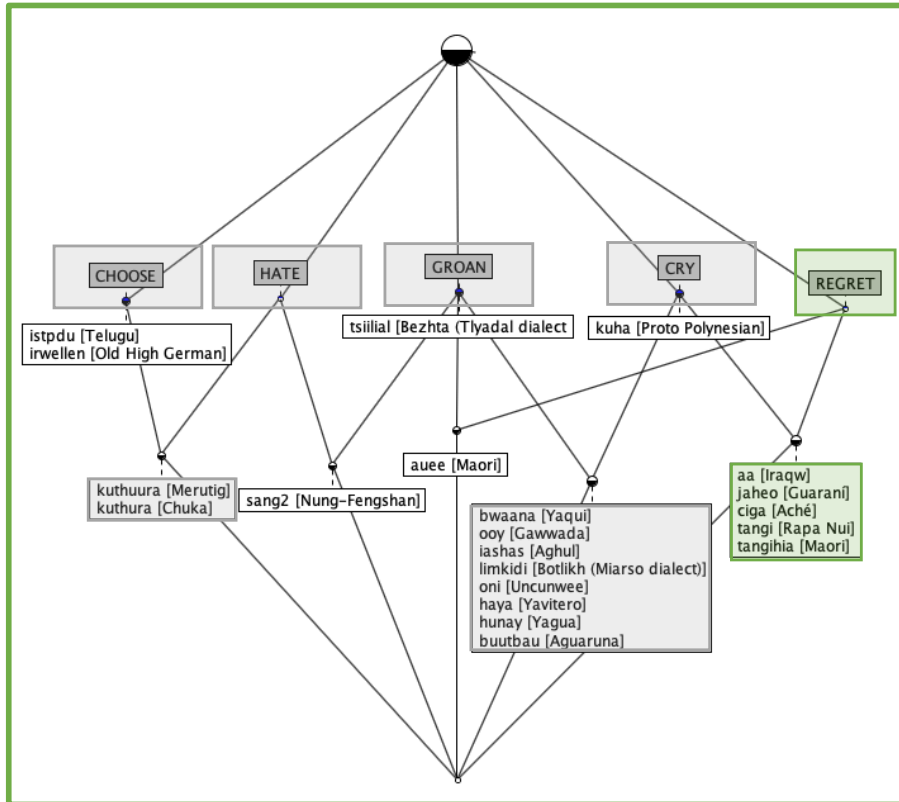


Before Demotic, no lexicalization, but



Before Demotic, no lexicalization, but

# Egyptian in typological perspective



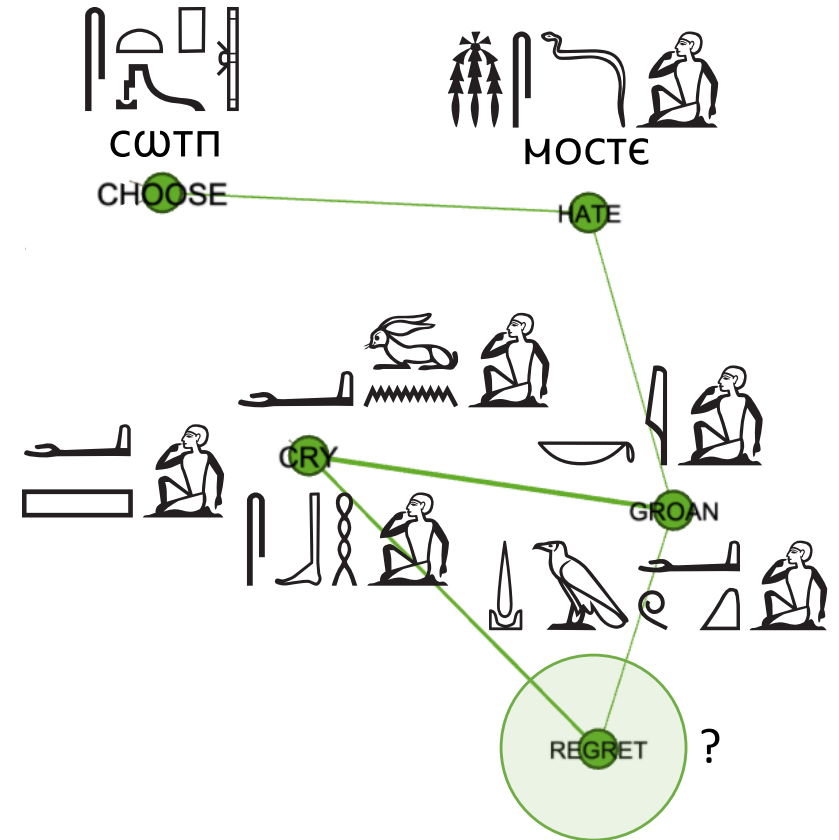
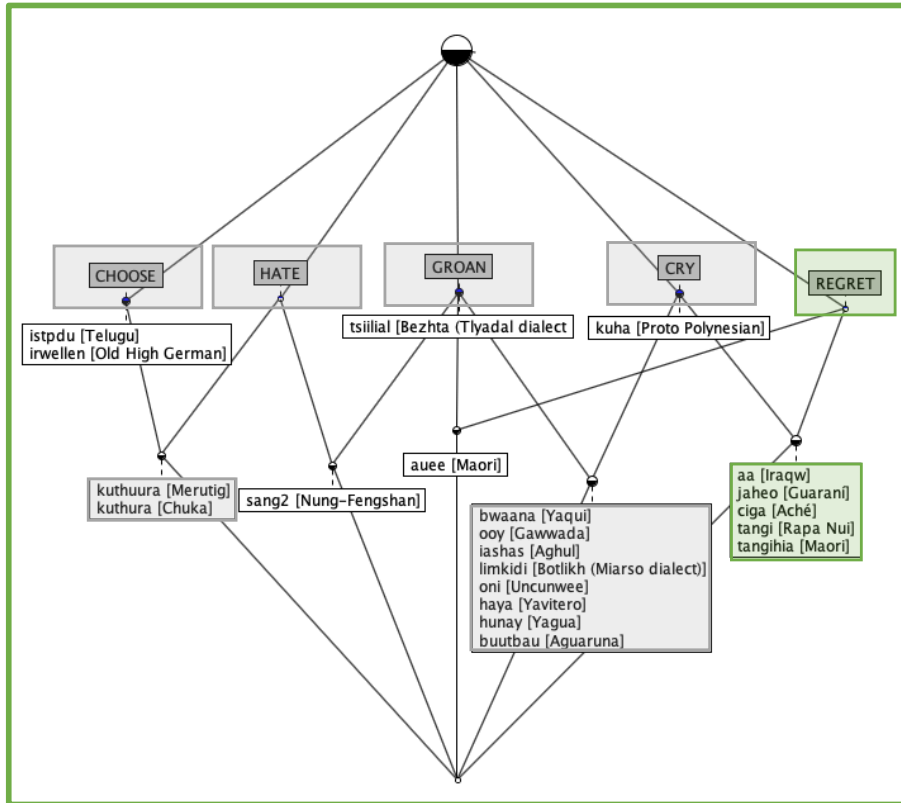
Before Demotic, no lexicalization, but



*ḥꜣ twi ḥr Km.t*

‘If only I was in Egypt’ (Qadesh, §188)

# Egyptian in typological perspective

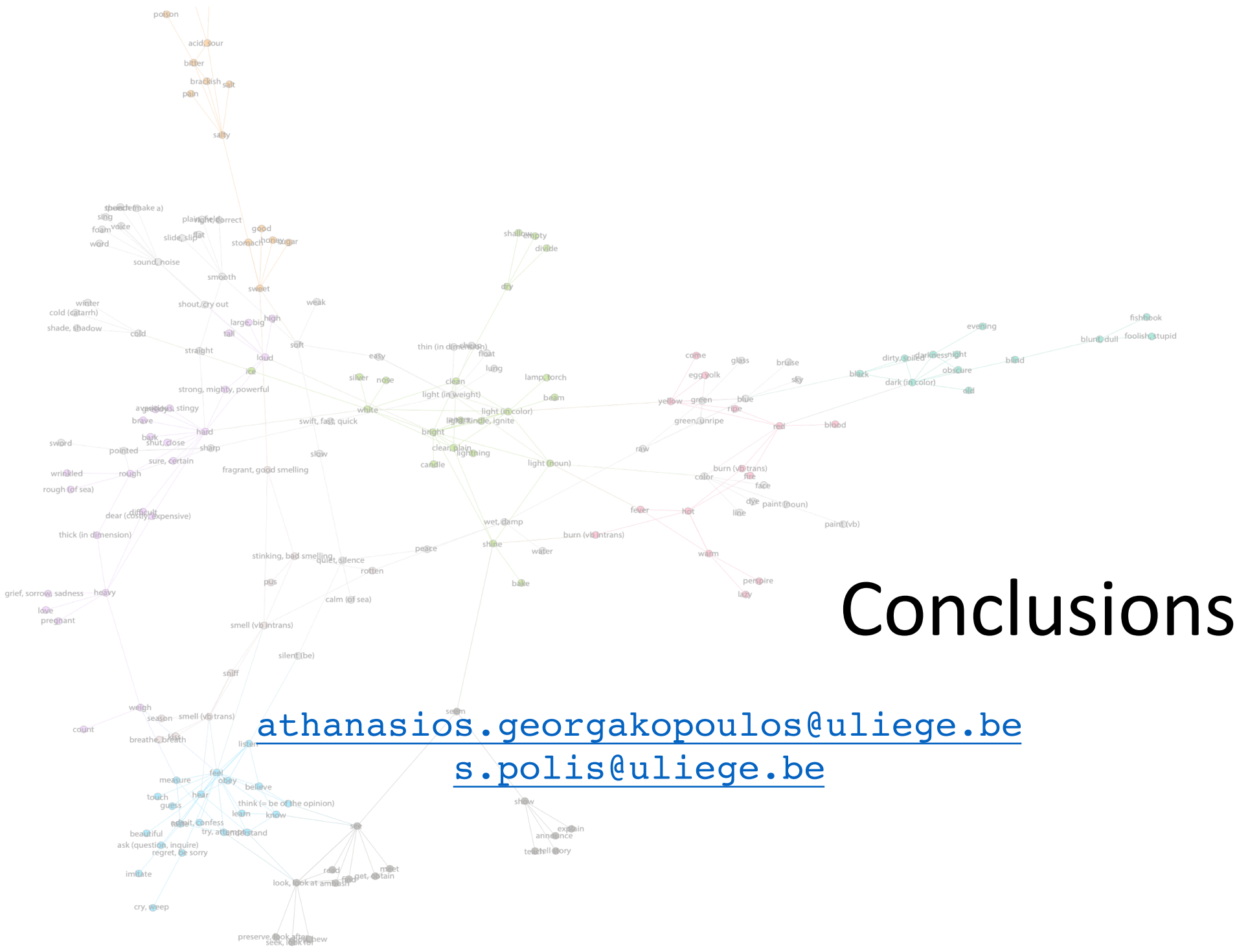


Before Demotic, no lexicalization, but



*nn ḥl n=k*

‘(may you be alive and healthy),  
without regrets’ (pAnastasi I, 2,7)



# Conclusions

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[s.polis@uliege.be](mailto:s.polis@uliege.be)