

# Building an amphichronic semantic map: Insights from Southeastern Mande

Tatiana Nikitina (CNRS- LLACAN)



European Research Council  
Established by the European Commission

# Background

- Recent upsurge of interest in semantic maps as a means of modeling lexical polysemy patterns (Georgakopoulos & Polis 2018);
- outstanding issues:
  - the need to explore the potential of **amphichronic** maps (bringing together information on attested synchronic states and predictions of the system's diachronic development),
  - the need to accommodate, within the same model, **different types of meaning** relationships (polysemy, metaphorical relations, and pragmatic inference).

## Goals of this study

- address these issues at a micro-scale level,
- explore two meaning clusters in four closely related Southeastern Mande languages (Tura, Dan, Mwan, and Wan),
- focus on the categories of diminutivity and singulativity.

# Plan of the talk

- present the **Radial Category model** as developed for the study of diminutives;
- use this model to compare the use of **diminutives** in four closely related languages;
- apply the same model to an unrelated domain: the use of **singulatives** (in the same four language);
- **contrast** the two semantic domains;
- assess the **advantages** of the model;
- discuss what is **still missing**.

# The Radial Category Model

(Lakoff 1987, Juraafsky 1996)

- a structured polysemy network,
- explicitly defined relations between individual senses (inference, metaphorical transfer, abstraction),
- the relations are universal and *amphichronic*:
  - describes and predicts patterns of polysemy,
  - describes and predicts patterns of semantic change, the marker's origin (a model of "archeology of meaning")

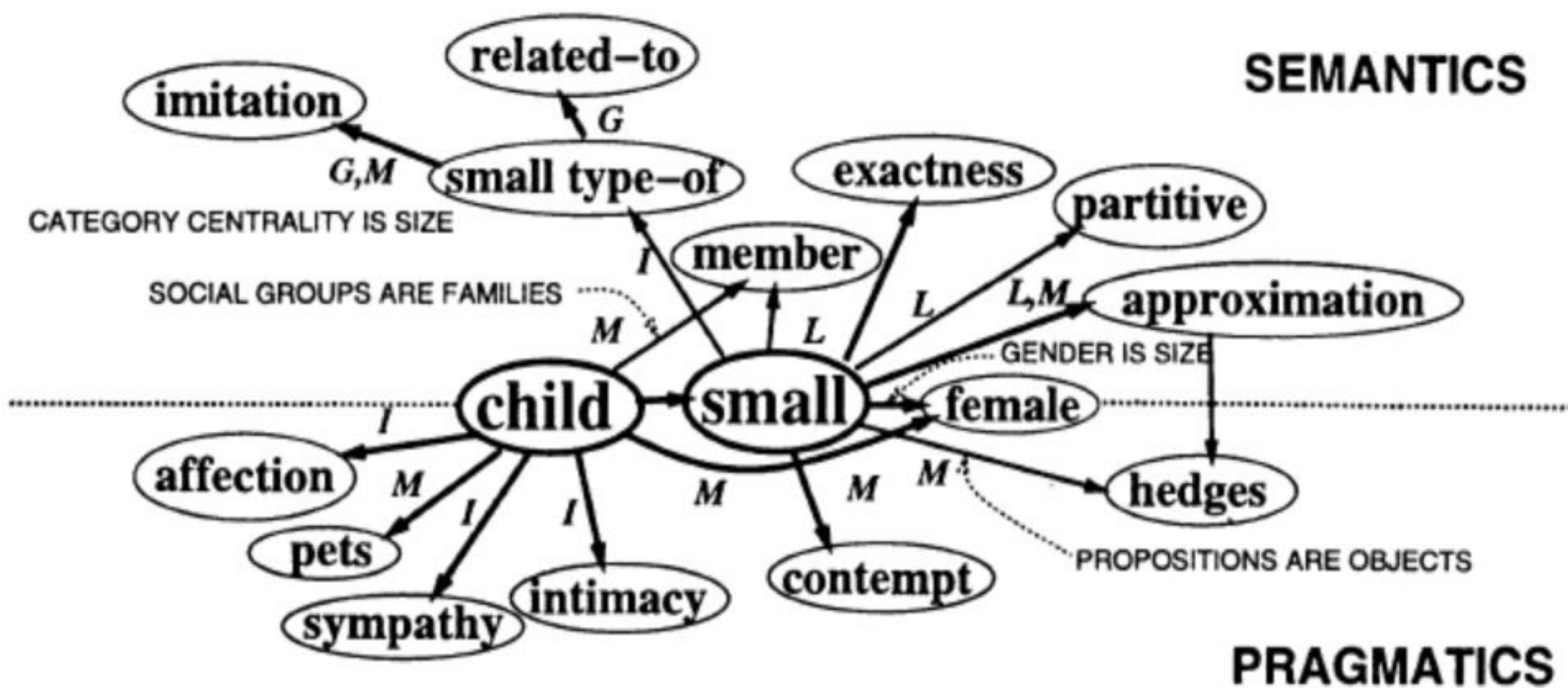


FIGURE 5. Proposed universal structure for the semantics of the diminutive.

# Southeastern Mande, Côte d'Ivoire

- Tura Idiatov 2008;
- Eastern Dan Vydrine & Kességbeu 2008;
- Mwan Perekhvalskaya & Yegbé 2008;
- Wan Nikitina in progress

# Diminutivity in SE Mande: overview

- Common origin: nouns for ‘child’ (Greenberg 1959; Matisoff 1991; Heine et al. 1991; Heine and Kuteva 2002; Heine and Leyew 2008);
- Tura, Eastern Dan, and Mwan:
  - similar or identical the use of diminutives;
  - differences in productivity/lexicalization patterns;
  - mapped onto the same radial network
- Wan
  - significant differences in the organization of the diminutive domain;
  - discontinuous categories, low frequency, low productivity;
  - synchronic picture makes sense in view of the comparative data.

# In combination with count nouns

- Small size

(1) Mwan:

- |    |                |                       |                   |
|----|----------------|-----------------------|-------------------|
| a. | <i>wèè -nè</i> | mortar + diminutive   | 'little mortar'   |
| b. | <i>mlè -né</i> | horn + diminutive     | 'little horn'     |
| c. | <i>pē -nè</i>  | thing + diminutive    | 'little thing'    |
| d. | <i>gōō -nè</i> | mountain + diminutive | 'little mountain' |

(2) Dan:

- |    |                       |                            |                     |
|----|-----------------------|----------------------------|---------------------|
| a. | <i>kó dōōdōō ná</i>   | hut + round + diminutive   | 'small round huts'  |
| b. | <i>blúù dōōdōō ná</i> | bread + round + diminutive | 'small round bread' |



# In combination with count nouns

- Small type (3) [Mwan]

*bòtò -né*      bag + diminutive      ‘small bag; wallet’

(4) a. [Mwan]

*bīēlē-nē*      ‘little mouse’

b. [Tura]

*bààkiâi-né*      ‘(smaller) pangolin’ (*Phataginus tricuspis* and *Uromanis  
tetradactyla*)

# In combination with count nouns

(5) [Tura]

- Small type

a. *gûbêlê -né* = *gûbêlê*(common) 'sweet banana' (a smaller and sweeter kind, up to 10 cm)

b. *kpâin -né* = *kpâin* 'centipede; millipede'

c. *wǣǣ -né* = *wǣǣ* (common) 'fly'

d. *zɛŋ -né* = *zɛŋ* 'sparrow'

e. *bîc -né* = *bîc* 'grasshopper'

f. *bóò -né* = *bóò* 'ground squirrel (esp.); marmot; jerboa'

(11) a. [Tura]

*lùvù-ṇḗ = lù-ṇḗ = lù-ṇḗ* 'hare (esp.)'

b. [Dan]

*sā-ná* 'hare'

c. [Mwan]

*lóo-nè = lōō-nè* 'hare'

(12) a. [Tura]

*yamà = yamà -né* 'domestic cat'

b. [Dan]

*yùmāā-ná* (arch.) 'cat'

*gwā-ná* 'cat'

c. [Mwan]

*séé-né* 'cat'

# In combination with count nouns

- Young age

(14) [Tura]

- |    |                       |                    |                              |
|----|-----------------------|--------------------|------------------------------|
| a. | <i>né -né</i>         | child + diminutive | 'young child'                |
| b. | <i>lôò -né = lôòḙ</i> | woman + diminutive | 'young girl'                 |
| c. | <i>mîḡ -né</i>        | man + diminutive   | 'boy; adolescent; young man' |

# In combination with count nouns

- Pejorative sense

(15) a. [Tura]

*mîṭ -nē*      man + diminutive

(pejor.) 'boy' (an adult man| who is still not married)

b. [Dan]

*gōdā -nā*      mister (term of address) + diminutive      (pejor.) 'boy'

# In combination with count nouns

(17) [Dan]

- Old age (!)

*gṣdā -nÁ*

mister (term of address) + diminutive

(16) [Dan]

‘man (of around 50 years of age)’

a. *dēbā -nÁ* woman + diminutive ‘elderly woman’ (of about 50 years of age)

b. *mī -nÁ* man + diminutive ‘man’ (from about 30 years up)

c. *nēē -nÁ* ?? + diminutive ‘old woman’ (of very advanced age)

d. *kwēē -nÁ* ?? + diminutive ‘old man’

# In combination with abstract nouns

- Category membership, activity participation

(19) a. [Tura]

wóô-né      ??goodness + child/diminutive      ‘person of good’

b. [Dan]

gwã -nÁ      gwã (name of a dance) + child/diminutive

(arch.) ‘member of “gwa” (one who can participate in the dance)’



# In combination with abstract nouns

- Recently acquired membership

(20) [Tura]

a. *bà -né*    circumcision + diminutive    ‘newly initiated; newly circumcised’

b. *a*        *wôô*        *tó*        *bà-né*        *á*

s/he:PRF RETR    become newly.initiated    PPS

‘S/he has already been initiated.’ (lit., ‘s/he had been newly initiated’)<sup>13</sup>

(21) [Dan]

*dẽ -nÁ*    ‘younger wife’ (one who became married later than her co-wife)



# Quantification senses

- Small amount: (22) [Dan]

*yĩ -ná* liquid + diminutive 'small quantity of a liquid'

(23) [Tura]

*e mini -né kê lɔ'*

s/he rice -DIM some bought

'He bought a little bit of rice.'

# Quantification senses

- Conventional unit:

(24) [Dan]

*yĩ-ná*    liquid + diminutive    'stream'

(25) a. [Tura]

*bàṛlǎ -né*      potash + diminutive      'potash used for the crafting of soap'

b. [Mwan]

*pīṛbē -nē*      metal + diminutive      'ring'

c. [Mwan]

*vlē -nē tē*      stone + diminutive + red      'flint'

d. [Dan]

*dīūr -nǎ*      tree/wood + diminutive      'small tree; stick'

# Scales

- Low intensity:

(26) [Tura]

*dǔǔ -né* (redupl. *dǔǔdǔǔ -né*, *dǔdǔǔ -né*) long + diminutive 'a little elongated'

# Scales

- Short duration, little progress:

(27) [Tura]

a. *é*      *ló-né*    *kê*      *wô'*      *líélé*    *dǒǒ-á* ... (Bearth 1986: 222)

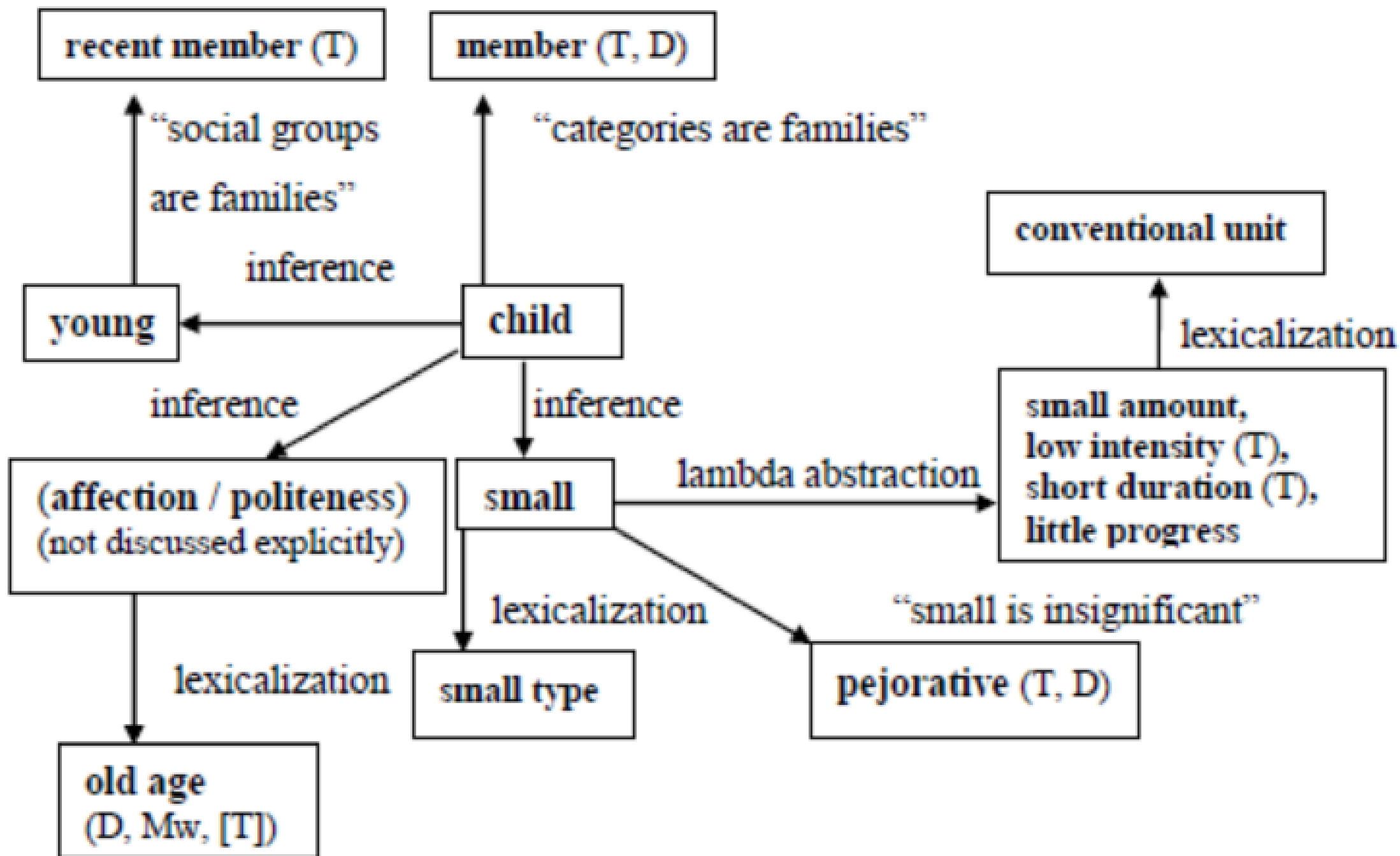
s/he      go-DIM    some      did      in.front    far-PPS

‘when he walked a little further...’

b. *e*      *tɔ́ɔ́-né*      *kê*      *wô'*

s/he      ascend-DIM    some      did

‘he ascended a little bit’



# Diminutivity in Wan

- not productive in any of the senses, highly lexicalized;
- alternative means used to express the same meanings:

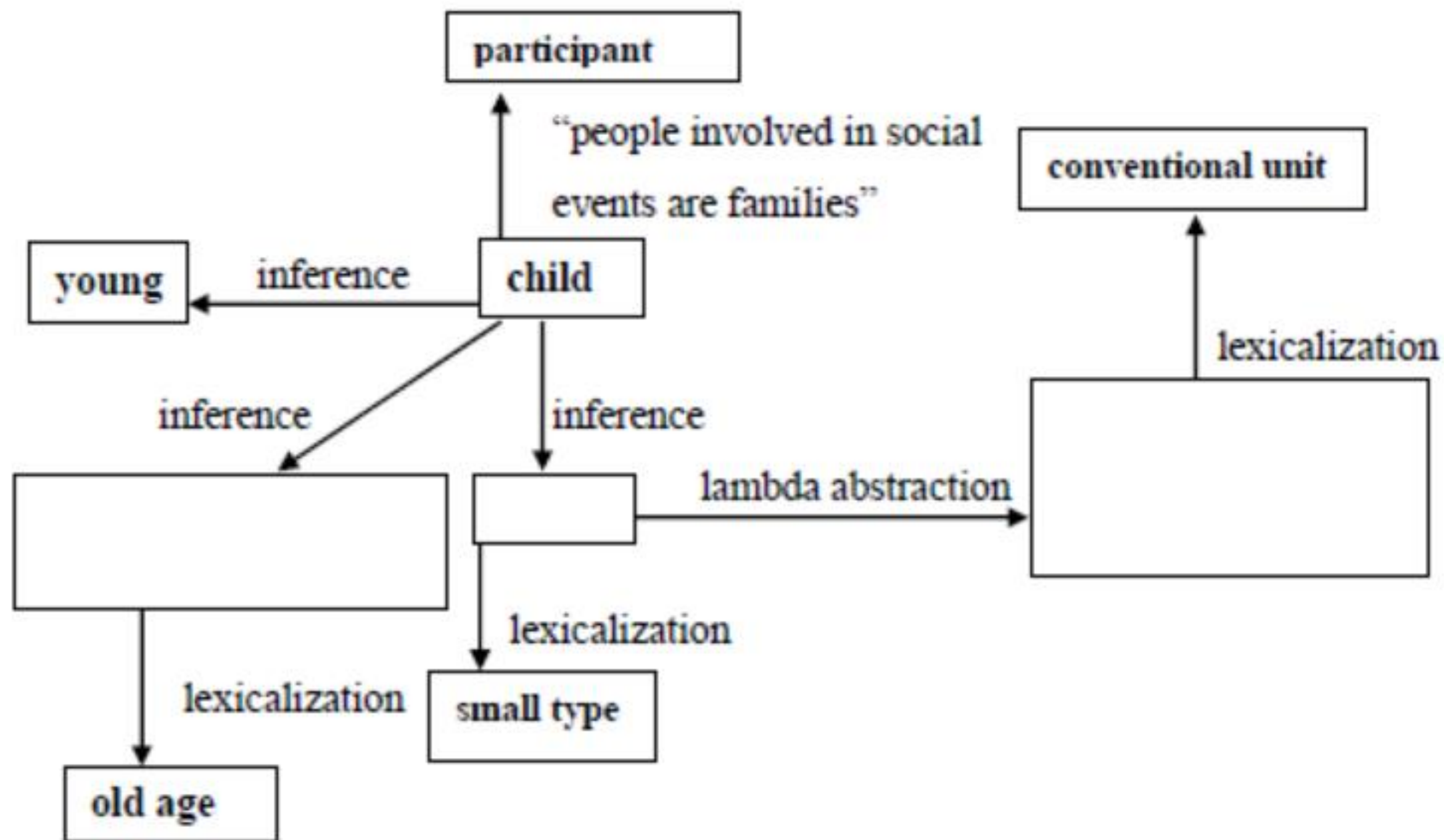
(35) a. *bā ní*      field + small      ‘small field’

b. *mī ní ní*      man + small      ‘a small person’

(42) a. *gàŋ kplén*      yams + piece      ‘tuber of yams’

b. *kālē kplén*      forest + piece      ‘patch of forest’

(43) *lē tōlē*      wife + new      ‘newly married wife’





# Interim summary

- a wide range of diminutive uses centers around the core meaning of 'child' in Tura, Dan, and Mwan;
- a strikingly different picture in Wan: disintegrated clusters of synchronically unrelated meanings;
- the semantic map model helps to make sense of this difference;
- and sheds light on the way diminutivity developed in the closely related Mande languages

# Singulativity

# Singulativity

Dan Bloo (Erman 2005):

- ‘seed’, ‘grain’ (of plant)
- ‘bone’
- ‘core’ (of fruit)

*sy*<sup>^</sup> ‘palm’ – *sy*<sup>^</sup> *gā* ‘palm grain’

*gɔ*<sup>^</sup> ‘head’ – *gɔ*<sup>^</sup> *gā* ‘skull’

# Conventional unit

<i>mlû</i>	‘riz’	<i>mlûgā</i>	‘grain du riz’
<i>kéé</i>	‘arachide’	<i>kéégā</i>	‘graine d’arachide’
<i>kwēē</i>	‘sel’	<i>kwēēgā</i>	‘grain du sel’
<i>yáń</i>	‘sable’	<i>yáńgā</i>	‘grain de sable’
<i>yèē</i>	‘coton’	<i>yèēgā</i>	‘balle de coton’
<i>wũ</i>	‘cheveux’	<i>wũgā</i>	‘un cheveu’
<i>kāâ</i>	‘poils’, ‘plumes’	<i>kāâgā</i>	‘un poil’, ‘une plume’

<i>gbôô</i>	‘guêpe(s)’	<i>gbôôgā</i>	‘une guêpe’
<i>zīō</i>	‘moustique(s)’	<i>zīōgā</i>	‘un moustique’
<i>zó</i>	1) ‘pointe’ ; ‘epingle’ 2) ‘abeille(s)’	<i>zógā</i>	‘une abeille’
<i>zlū</i>	‘fourmi(s)’	<i>zlūgā</i>	‘une fourmi’
<i>sō</i>	1) ‘dent(s)’ 2) ‘défense(s)’	<i>sōgā</i>	1) ‘une dent’ 2) ‘crochet’ (de serpent)
<i>sòò</i>	1) ‘ongle(s)’ 2) ‘griffe(s)’ 3) ‘sabot(s)’ (de cheval)	<i>sòògā</i>	1) ‘un ongle’ 2) ‘une griffe’ 3) ‘un sabot’
<i>dé</i>	1) ‘feuille(s) ; feuillage, herbe’ 2) ‘médicament’	<i>dégā</i>	‘une feuille’
<i>kplōō</i>	‘cauri(s)’	<i>kplōōgā</i>	‘cauri’
<i>súsōñ</i>	‘étoile(s)’	<i>súsōñgā</i>	‘étoile’
<i>síxkó</i>	1) ‘boîte d’allumettes’ (litt : ‘maison de feu’) 2) ‘allumette(s)’	<i>síxkógā</i>	‘allumette’

# Singulative

(2)a.     $\bar{n}$      $s\acute{o}$      $y\hat{x}^3$      $\bar{n}$      $k\bar{a}$      $n\hat{a}$   
          ma    dent    elle    me    faire    PROG  
          ‘J’ai mal aux dents.’/ ‘J’ai mal à la dent.’

(2)b     $\bar{n}$      $s\acute{o}g\bar{a}$      $y\hat{x}$      $\bar{n}$      $k\bar{a}$      $n\hat{a}$   
          ma    dent-unité    elle    me    faire    PROG  
          ‘J’ai mal à la dent.’

$y\hat{a}$     1) ‘yeux, oeil’ 2) ‘regard’  
          3) ‘couleur’

$s\hat{x}$     ‘corne(s)’

$t\acute{o}$     1) ‘oreille(s)’ 2) ‘bord’

$y\hat{a}g\bar{a}$     1) ‘oeil ; yeux’ 2) ‘oeil d’insecte  
          composé à facettes’

$s\hat{x}g\bar{a}$     ‘corne(s)’

$t\acute{o}n\acute{a}g\bar{a}$     ‘oreille(s), pavillon de l’oreille’

# Unit in quantifying expressions

(37) *pṣḍê nê ā kpâ â mē gā báá bá*  
village FOC je rencontrer sa personne unité quelque PP  
'J'ai rencontré quelques gens de ce village.'

(38) *gṣṣ dō ṣ gā plê* 'douze'  
dix- un son unité deux



# Functional / essential part

<i>zùx̄</i>	‘coeur’	<i>zùx̄gā</i>	‘coeur’
<i>nē</i>	1) ‘langue’ 2) ‘pied d’escargot’	<i>nēgā</i>	1) ‘langue’ 2) ‘mâchoire d’insecte’
<i>yǎ</i>	1) ‘oeil ; yeux’ 2) ‘regard’	<i>yǎgā</i>	1) ‘oeil ; yeux’ 2) ‘oeil d’insecte composé à facettes’
<i>tó</i>	1) ‘oreille(s)’ 2) ‘bord’ 3) ‘ouïes’	<i>tónágā</i>	‘oreille, pavillon de l’oreille’
<i>kûx̄</i>	‘sexe masculin’	<i>kûx̄gā</i>	‘sexe masculin’
<i>pēnē</i>	‘clitoris’	<i>pēnēgā</i>	‘clitoris’
<i>dúúúŋ</i>	‘balafon’	<i>dúúúŋgā</i>	‘mailloche de balafon’
<i>séé</i>	1) ‘arc’ 2) ‘flèche’	<i>séégā</i>	‘flèche’
<i>bū</i>	‘fusil’	<i>bū gā</i>	‘balle de fusil’
<i>dâa</i>	‘mâchette’	<i>dâagā</i>	‘couteau ; lame de couteau’



# Laudatory use

(39)     *â    b â    kó    b ā,    kó    g ā    m ŭ*  
         sa   POSS   maison   DEF   maison   grain   être  
‘Sa maison est très grande/belle.’

(41)     *y à       gb âw ú ŋ    g ā    s Ā    d ō    d â    ŋ    b â*  
         il-PRF   boubou   grain   joli   un   porter   REFL   PP  
‘Il a porté un très joli boubou.’

(42)     *bl ú    g ā    ŋ    w ō ˆ    n ū,    k ŋ    kw ấ ấ    â    k ā    b ā*  
         forêt   grain   que   ils-la   donner   pour   que nous   la   cultiver   DEF  
‘C’est une forêt dense/grande qu’on nous a donné pour cultiver.’

# Essence/nature

(51) *dāṇ̃* *bā* *dèè* *â* *gā* *yà* *tr̃*  
ciel DEF aujourd'hui sa nature elle-PRF devenir noir  
'Le ciel est sombre aujourd'hui.'

(52) *yí* *nè* *â* *gā* *ỹ* *tr̃tr̃* *dèè*  
eau FOC sa nature elle-être clair très  
'Que cette eau est claire!' (cf : *yí* 'eau' ; *yígā* 'rivière')

(53)a. *sé* *nè* *â* *gā* *{ỹ}* *nũææzā*  
terre FOC sa nature {elle-être} rouge  
'Cette terre est rouge.'

# Singulatives across Mande

The nouns are not always cognate, but the distribution is similar:

dan-blo	<i>kwēē</i>	‘sel’	<i>kwēēgā</i>	‘grain du sel’
toura	<i>wèì</i>	‘sel’	<i>wèìwěě</i>	‘grain de sel’
beng	<i>bīē</i>	‘sel’	<i>bīē wlé</i>	‘grain de sel’
gban	<i>gīē</i>	‘sel’	<i>gīē w̃lí</i>	‘grain de sel’
wan	<i>ò</i>	‘sel’	<i>ò ɔ̃ŋ</i>	‘grain de sel à gros grains’
bambara	<i>kògɔ́</i>	‘sel’	<i>kògòkísé</i>	‘grain de sel à gros grains’



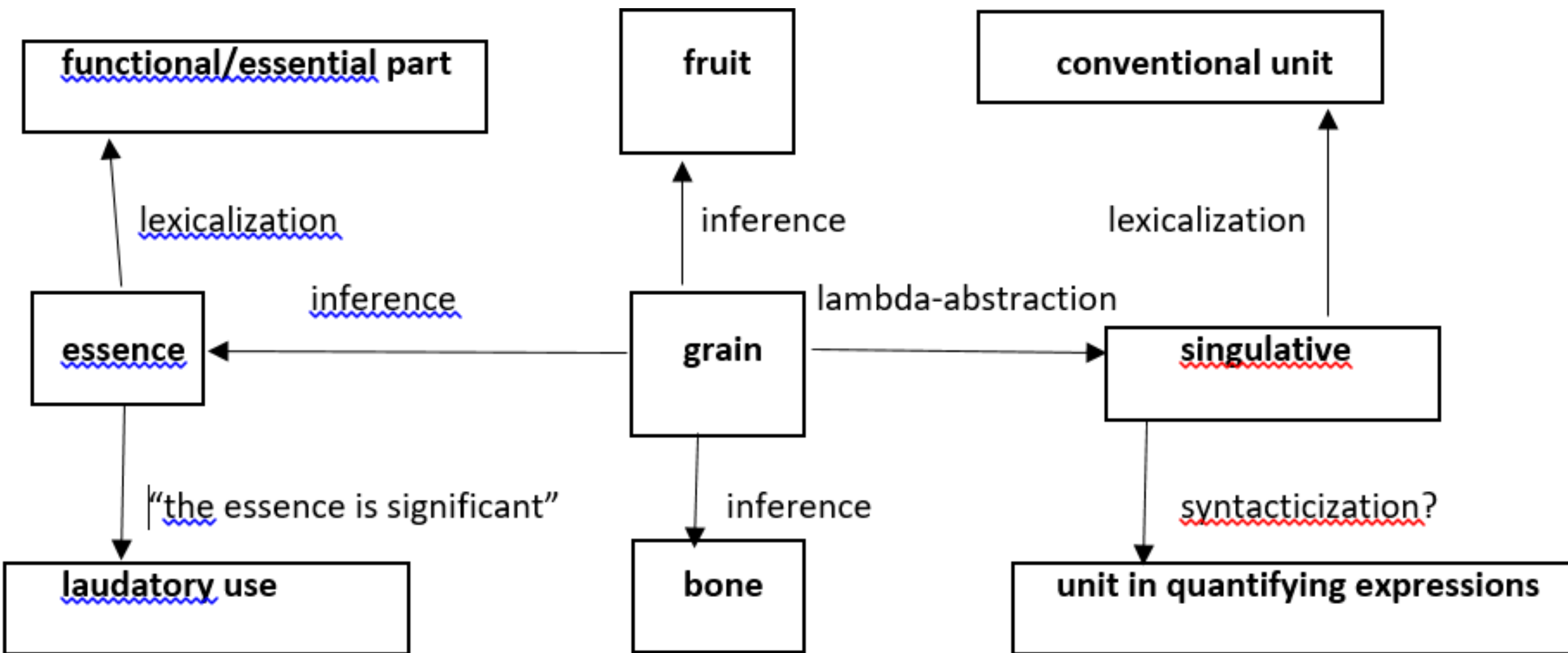
dan-blo	<i>wũ</i>	‘cheveux’	<i>wũgā</i>	‘cheveu’
mwan	<i>wĩlē</i>	‘cheveux’	<i>wĩbē</i>	‘cheveu’
wan	<i>mékāñ</i>	‘cheveu(x)’	<i>mékāñ ɔñ dō</i>	‘cheveu’
gban	<i>mlē</i>	‘cheveux’	<i>mlē wli</i>	‘cheveu’
beng	<i>ñlūcéñ</i>	‘cheveux’	<i>ñlūcéñ wlé</i>	‘cheveu’
gouro	<i>wì</i>	‘cheveux’	<i>wì wólé</i>	‘tresse’

dan-blo	<i>zɔ</i>	1) ‘pointe ; epingle’ 2) ‘abeille(s)’	<i>zɔgā</i>	‘abeille’
toura	<i>zɔɔ</i>	1) ‘pointe’ 2) ‘abeille(s)’	<i>zɔɔ wēē dō</i>	‘abeille’
gban	<i>zɔ</i>	‘abeille(s)’	<i>zɔ wli</i>	‘abeille’
mwan	<i>zrɔ</i>	‘abeille(s)’	<i>zrɔ bē</i>	‘abeille’
wan	<i>zrɔ</i>	‘abeille(s)’	<i>zrɔ ɔñ</i>	‘abeille’
gouro	<i>zòrɔ</i>	‘abeille(s)’	<i>zòrɔ-wólé</i>	‘abeille’
beng	<i>sɔmɔ</i>	‘abeille(s)’	<i>sɔmɔ wlé</i>	‘abeille’
bambara	<i>dí</i>	‘miel ; abeille(s)’	<i>díkisé</i>	‘abeille’

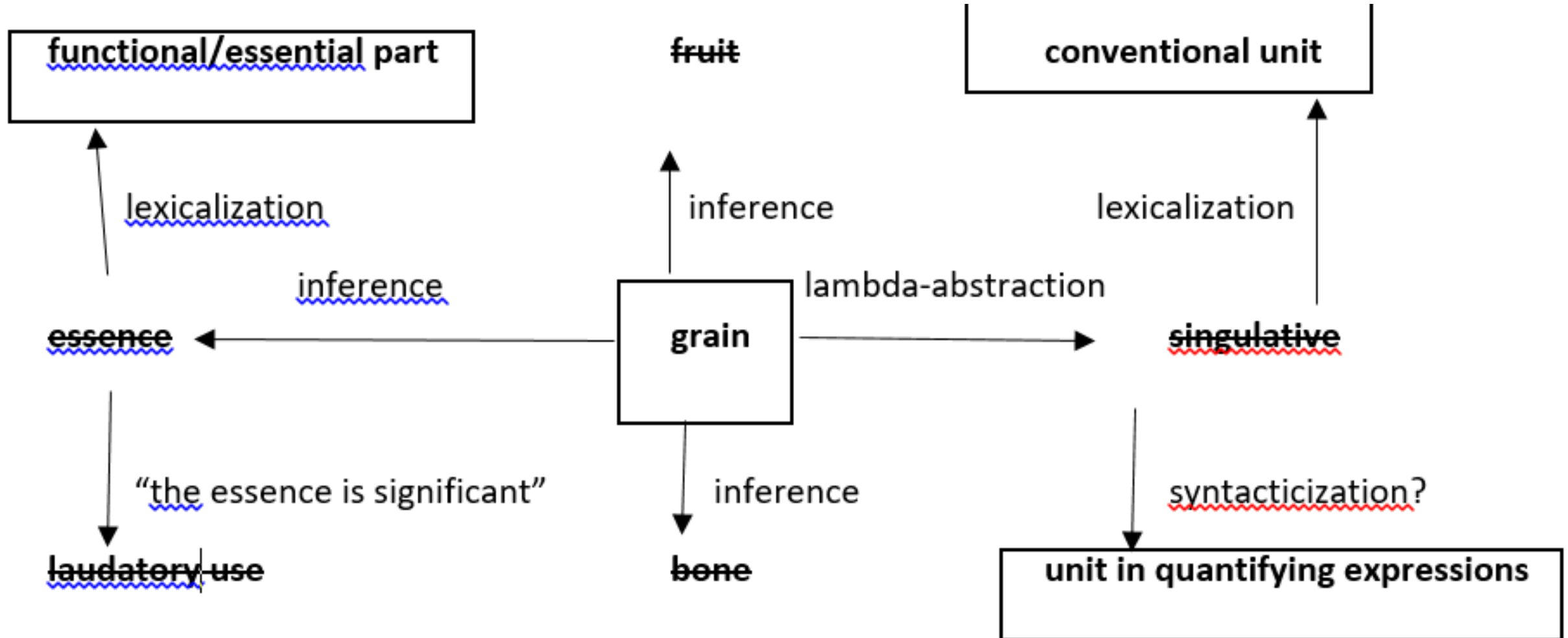
dan-blo	<i>dâa</i>	‘mâchette’	<i>dâagā</i>	‘partie de mâchette en fer’
toura	<i>lâãã</i>	‘couteau’	<i>lâãã wěě</i>	‘lame de couteau’
mwan	<i>wlā</i>	‘couteau’	<i>wlā bē</i>	‘lame de couteau’
gban	<i>gbě</i>	‘couteau’	<i>gbě wli</i>	‘lame de couteau’
gouro	<i>sěné</i>	‘couteau’	<i>sěné wólé</i>	‘lame de couteau’
wan	<i>sēñgē</i>	‘couteau’	<i>sēñgē ɔñ</i>	‘lame de couteau’
beng	<i>dũ</i>	‘couteau’	<i>dũ wlé</i>	‘lame de couteau’
bambara	<i>mùrú</i>	‘couteau’	<i>mùrùkíse</i>	‘lame de couteau’

dan-blo	<i>séé</i>	1) ‘arc’ 2) ‘flèche’	<i>séégā</i>	‘flèche’
toura	<i>sãá</i>	‘arc’	<i>sãáwěě</i>	‘flèche’
mwan	<i>sá</i>	‘arc’	<i>sá bē</i>	‘flèche’
beng	<i>ñũě</i>	‘arc’	<i>ñũě wlé</i>	‘flèche’
wan	<i>klãñ</i>	‘arc’	<i>klãñ ɔñ</i>	‘flèche’
bambara	<i>kálá</i>	‘arc’	<i>kálákíse</i>	‘flèche’

# Possible network for Dan



# The network in Wan



# Singulativity: summary

- A **similar set of uses** across Mande languages, centered on the meaning 'grain';
- differences in the use of the markers are surprisingly minor in light of their **lack of common ancestry**;
- the semantic map model helps to **make sense of the parallels** in the use of historically unrelated markers;
- as well as to **identify possible gaps** in the existing lexical descriptions.



# Diminutivity vs. singulativity

- Diminutive markers are **cognate**, singulatives are **not necessarily so**;
- the **same general types of semantic relations** are used to organize the networks;
- in both domains, **Wan differs** significantly from its related languages;
- yet its **disintegrated uses make sense** when viewed in the context of the polysemy networks of the other languages.

# Conclusion

Comparison of the two semantic domains, explored at the micro-scale level, highlights the **strengths** of the model:

- can capture cross-linguistic diversity without making assumptions about the synchronic status of meanings or relationships between meanings,
- can yield insights into relationships between languages,
- has the potential of accounting for the ways expressions compete with each other and take over new territory or recede over time.

The comparison also points to the **need for improvement**:

- cannot capture differences in **productivity**,
- cannot capture differences in **lexical restrictions**.



**Thank you**

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**METAPHOR:** A meaning shifts to a new domain, based on a general metaphor which maps between the old and new domains. The mapping will preserve certain features of the old domain (Sweetser 1990; Heine et al. 1991).

**INFERENCE OR CONTEXT-INDUCED REINTERPRETATION:** A morpheme acquires a new meaning which had been an inference or implicature of its old meaning. The historically earlier meaning of a morpheme causes the listener to naturally draw some inference; this inference gradually becomes conventionalized as the literal meaning of the morpheme (Traugott & König 1991; Heine et al. 1991; Bybee et al. 1994).

**GENERALIZATION OR BLEACHING:** A new sense is created from an old one by abstracting away specific features of meaning. The new meaning is more general and less informative than the old one.

to the generalization mechanism. Lambda-abstracting takes one predicate in a form and replaces it with a variable. The resulting expression is now a second-order predicate, since its domain includes a variable which ranges over predicates. For the diminutive, this process takes the original concept 'small( $x$ )', which has the meaning 'smaller than the prototypical exemplar  $x$  on the scale of size', and lambda-abstracting it to 'lambda( $y$ )(smaller than the prototypical exemplar  $x$  on the scale  $y$ )'.