

Distinctive metaphors for HAPPINESS near-synonyms in Indonesian

Gede Primahadi Wijaya Rajeg

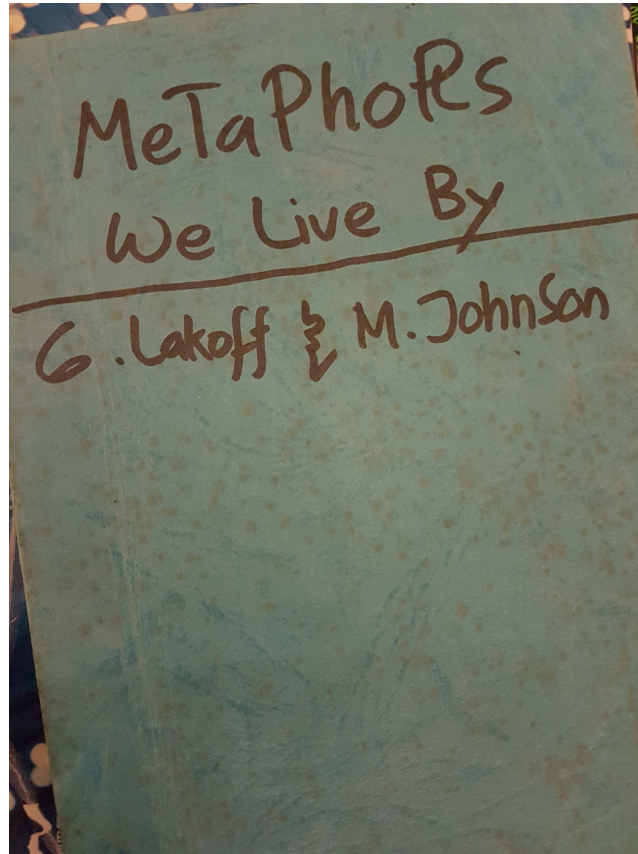
 <https://orcid.org/0000-0002-2047-8621>

Monash Linguistics and Applied Linguistics Seminar Series
21 May 2019

Overview

- Conceptual Metaphor Theory (CMT)
- Principal Metaphor Hypothesis
 - Key previous works (in English) – from introspective to usage-based, quantitative methods
- My study
 - Data & methods
 - Results
- Conclusion

Conceptual Metaphor Theory



Lakoff and Johnson (1980)

Conceptual Metaphor Theory

“The essence of metaphor is understanding and experiencing one kind of thing in terms of another.”

(Lakoff and Johnson 1980:5, italics in original)

ANGER IS FIRE



<https://bit.ly/30IFC0Q>

ANGER IS FIRE

(Rajeg 2014)

1. *penggunaan nama Tiga Diva (...) memantik kejengkelan*
use name three diva ignite annoyance

Erwin Gutawa dan Jay Subyakto
NAME and NAME

‘The use of the name of *Tiga Diva* ignited Erwin Gutawa’s and Jay Subyakto’s *annoyance*’

2. *kasus penyiksaan (...) menyulut kegeraman sejumlah pihak*
case torture ignite fury several party

‘The torture case (...) *ignited* the *fury* of several parties’



Rajeg, Gede Primahadi Wijaya. 2014. Metaphorical profiles of five Indonesian quasi-synonyms of ANGER: Multiple distinctive collexeme analysis. In *Proceedings of the International Congress of the Linguistic Society of Indonesia*. figshare. doi:[10.4225/03/58578ddba1fd2](https://doi.org/10.4225/03/58578ddba1fd2).

ANGER IS FIRE

(Rajeg 2014)

3. **Api** kemarahan **berkobar** **membakar** *darah* *di* *hati*
fire anger blazing burn blood at liver

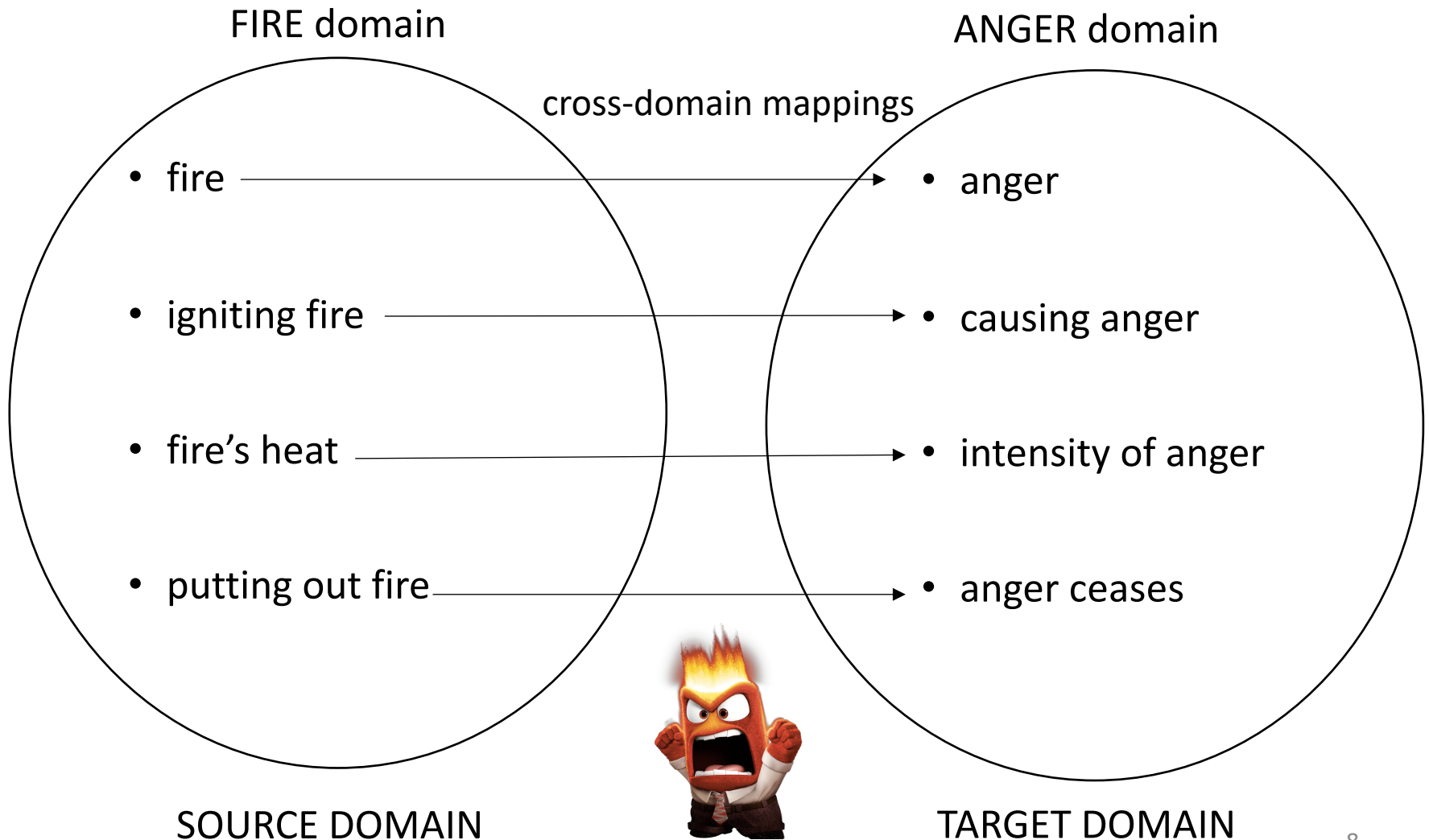
'The *fire* of *anger* *blazes*, *burning* the blood in the liver'

4. *Sesungguhnya* *sedekah* (...) *dapat* **memadamkan** kemurkaan *Allah*
in.fact alms can extinguish wrath Allah

'Indeed, alms (...) can *extinguish* Allah's *wrath*.'



ANGER IS FIRE



Few more examples for ANGER

(Lakoff 1987)

(HOT) SUBSTANCE IN A CONTAINER

- *bursting* with anger
- *brimming* with rage
- keep one's anger *bottled up inside*
- Billy's just *blowing off steam*.
- *simmer* down!
- you make my blood *boil*.

AN OPPONENT

- You need to *subdue* your anger.
- He was *battling* his anger.
- He *surrendered* to his anger.

(DANGEROUS) ANIMAL

- That *awakened* my ire.
- He *unleashed* his anger.
- He has a *ferocious* temper.
- She was *bridling* with anger.
- He started *snarling*.



<https://bit.ly/2GYxtbq>



<https://bit.ly/2VstMhJ>

Lexeme-specific approach

(Stefanowitsch 2004, 2006)

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<https://bit.ly/2GYxtbq>



<https://bit.ly/2VstMhJ>

- Stefanowitsch, Anatol. 2004. HAPPINESS in English and German: A metaphorical-pattern analysis. In Michel Achard & Suzanne Kemmer (eds.), *Language, Culture, and Mind*, 137–149. Stanford, CA: CSLI.
- Stefanowitsch, Anatol. 2006. Words and their metaphors: A corpus-based approach. In Anatol Stefanowitsch & Stefan Th. Gries (eds.), *Corpus-based approaches to metaphor and metonymy*, 63–105. Berlin: Mouton de Gruyter.

Principal Metaphor Hypothesis

vis-à-vis semantically similar emotions

Kövecses (1990) on PRIDE

- PRIDE
 - Broad category
 - “Subsumes such varied concepts as self-esteem, conceit, and vanity” (p. 88)
- “special emphasis will be placed on the question of *what kind of pride is characterized by which metaphors*” (p. 88, my italics)

Kövecses (1990) on PRIDE

“My suggestion will be that each of these members of the pride category differ from the prototype of pride, differ from each other, and do so primarily in terms of **the principal metaphors** and metonymies **that characterize them.**” (p. 88, my boldface)

Kövecses (1990) on PRIDE: *self-esteem*

“Self-esteem was primarily described in terms of the OBJECT and VALUE metaphors.” (p. 208)

- don't *overestimate* yourself (p. 99)
- she *values* herself *highly* (p. 99)
- He *cast off* his dignity (p. 101)
- He *disposed of* his dignity (p. 101)

Kövecses (1990) on PRIDE: *conceit*

“Characteristic of conceit are the metaphors THE CONCEITED PERSON IS UP/HIGH and THE CONCEITED PERSON IS BIG metaphors.” (p. 208)

- Do you think he’s a little bit *uppish*? (p. 102)
- She has a *swollen* opinion of herself. (p. 102)

Kövecses (1990) on PRIDE: *vanity*

“And vanity is set apart from the other senses by means of the VANITY IS A (SENSUAL OR INDULGENT) PERSON metaphor.” (p. 208)

- Her vanity is just *insatiable*. (p. 105)
- It only *fed* her vanity. (p. 105)
- She *indulged* her vanity. (p. 105)

Kövecses (1991) on HAPPINESS

- Two prototypical models of HAPPINESS
 - HAPPINESS-AS-A-VALUE
 - HAPPINESS-AS-AN-EMOTION/IMMEDIATE RESPONSE
- Each model is
 - characterised by certain metaphors
 - referred to by different lexical items

HAPPINESS-AS-A-VALUE



<https://bit.ly/2LXTMCd>

- HAPPINESS IS LIGHT (p. 30)
 - When she heard the news, she *lit up*.
 - There was a *glow* of happiness in her face.
 - She was *shining* with joy.
- HAPPINESS IS A (DESIRED) HIDDEN OBJECT (p. 38)
 - I have *found* happiness.
 - The *pursuit* of happiness is our inalienable right.
 - I am *searching for* happiness.
- HAPPINESS IS A VALUABLE COMMODITY (p. 38)
 - You can't *buy* happiness.
 - She *gave* him a lot of happiness.

HAPPINESS-AS-AN-EMOTION

- HAPPINESS IS FLUID IN A CONTAINER (p. 33)
 - He *bubbled over* with joy.
 - The sight *filled* them with joy.
 - He was *overflowing* with joy.
- HAPPINESS IS A CAPTIVE ANIMAL (p. 35)
 - His feelings of happiness *broke loose*.
- HAPPINESS IS AN OPPONENT (p. 36)
 - She was *overcome* by joy.
 - Happiness *took complete control over* him.
- HAPPINESS IS NATURAL FORCE (p. 37)
 - I felt a *surge* of happiness.

Kövecses's (1991) verdict on *happiness* and *joy*

“What seems more appropriate to assume is that *happiness* appears to be more inclusive word in that it can refer to *happiness as a value* and **occasionally** to *happiness as an emotion* as well, and that the word *joy* seems to be **primarily** reserved for denoting the emotion.” (p. 40, italics in original, my boldface)

Questions

Assuming the metaphors identified can occur with more than one emotion synonym:

- *how do we assess (or claim/judge?)* that metaphor X, but not metaphor Y, is the primary characteristic of word 1 but not word 2?
- In other words, *how do we operationalise/measure* the primacy or importance of certain metaphor characterising certain synonyms?

Usage-based approach to Principal Metaphor Hypothesis

Quantitative corpus linguistics

Stefanowitsch (2004, 2006)

Metaphorical Pattern Analysis (MPA)

“A metaphorical pattern is a multi-word expression from a given source domain (SD) into which one or more specific lexical item from a given target domain (TD) have been inserted.” (2006:66)

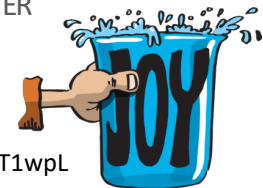
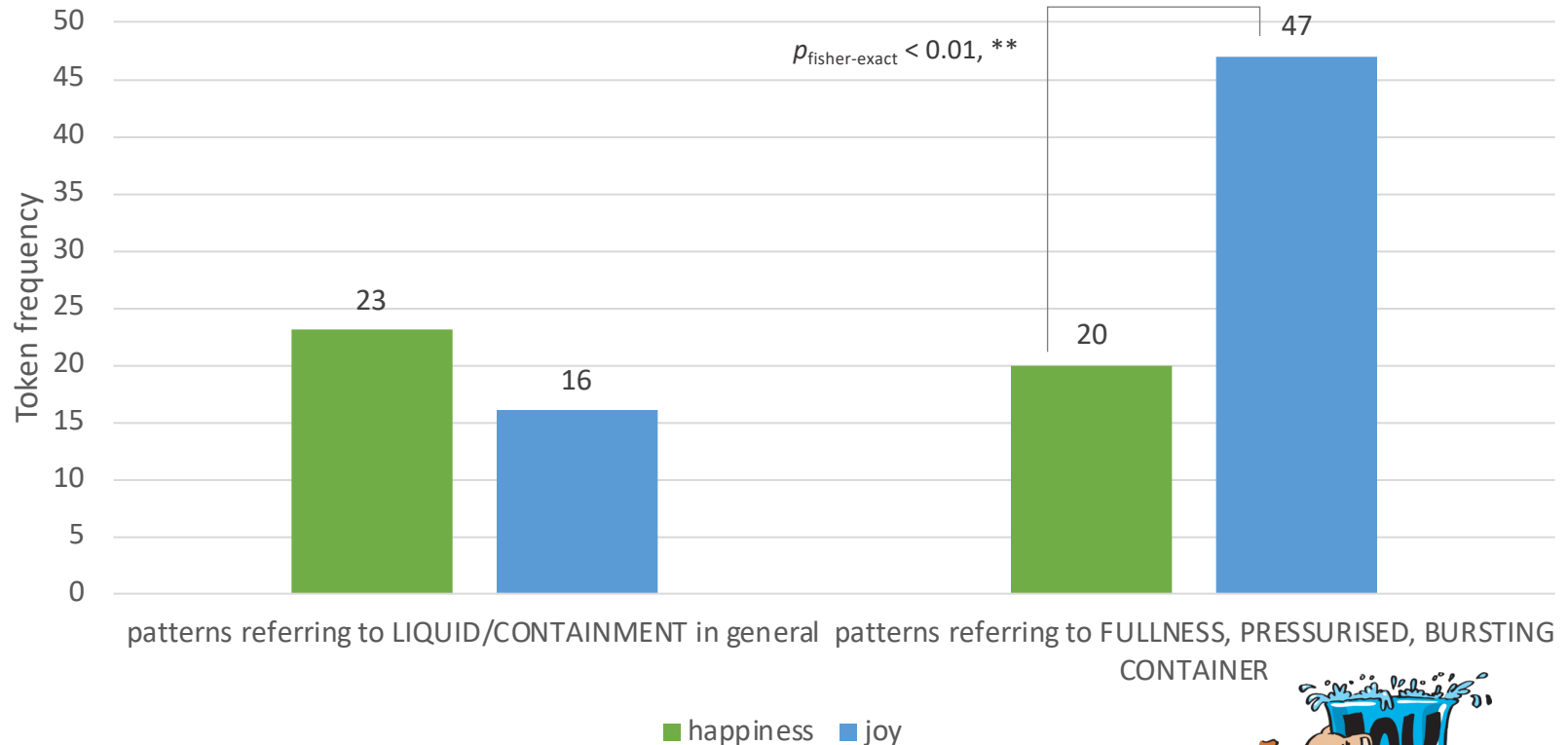
- *bubble/burst/overflow* with joy, *outpouring of joy*, *source of happiness* (2004:138)
 - syntactic/semantic frame from the source domain LIQUID

Stefanowitsch (2006:96-99): *happiness vs. joy*

- Depart from Goddard's (1998) hypothesis
 - *happiness* is less intense and shows “muted quality” than the German *Glück(lich)*, which is more like *joy(ful)*
 - German *Freude* (equivalence of *joy*) is more intense than *Glück*, similar like *joy* is more intense than *happiness*.
 - “[s]peaking metaphorically, emotions such as *Glück* and *bonheur* fill a person to overflowing, leaving no room for any further desires or wishes” (Goddard 1998:93, cited from Stefanowitsch 2004:140, my boldface)

Stefanowitsch (2006:96-99): *happiness vs. joy*

Distribution of metaphorical patterns evoking LIQUID IN A CONTAINER metaphor (Stefanowitsch 2006:100 Table 6)

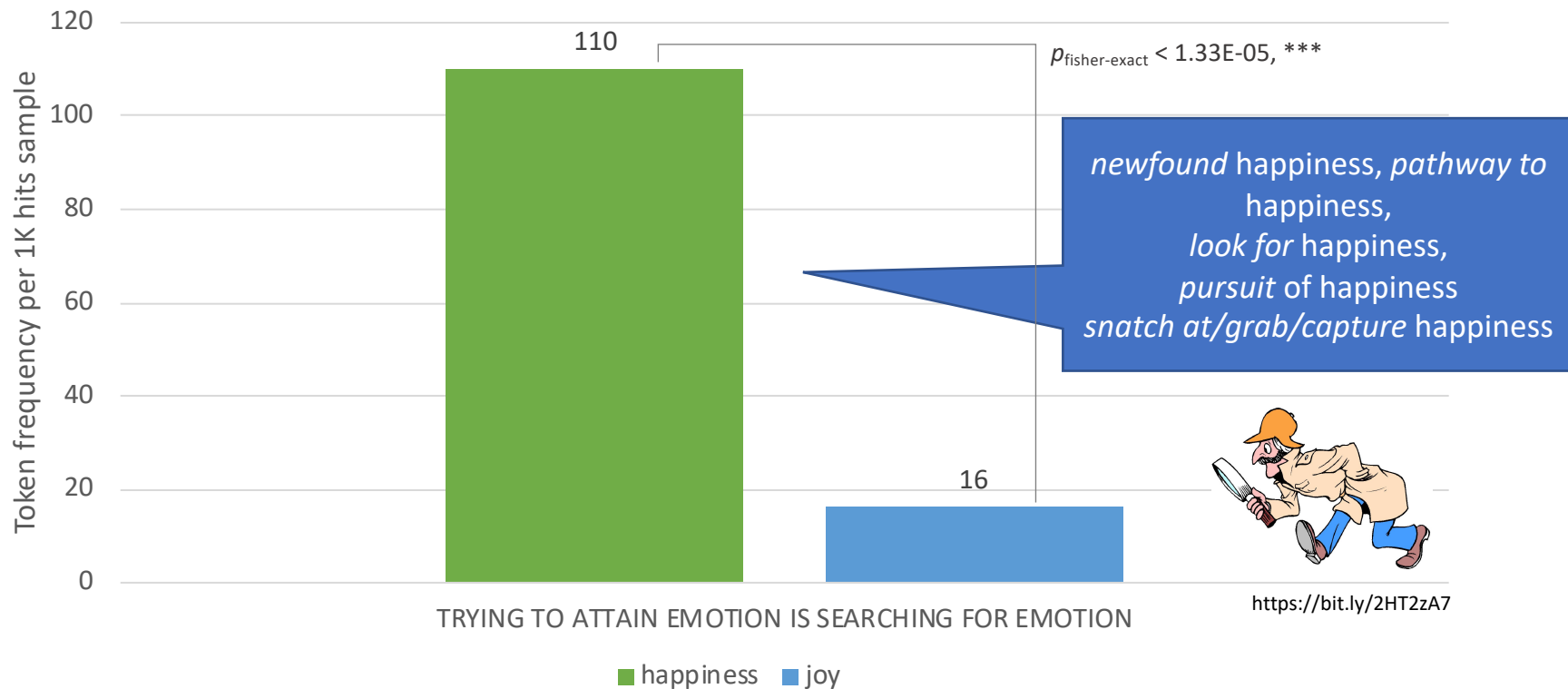


See also Stefanowitsch (2004:141-142)

<https://bit.ly/2WT1wpL>

Stefanowitsch (2006:96-99): *happiness vs. joy*

Distribution of metaphor referring to the so-called QUEST model
(data from Stefanowitsch 2006:97)



See also Stefanowitsch (2004:143)

Stefanowitsch (2006)

“if metaphorical mappings interact with individual lexical items such that there are differences, for example, between near-synonyms or antonyms, then the existence and nature of these differences must be accounted for.” (p. 70).

My study

(Rajeg 2019a: Ch. 7)

Target words

- Based on the results in Shaver et al. (2001) on the categorical structure of Indonesian emotion lexicon
- 5 prototypical members/terms for the category of HAPPINESS in Indonesian
 - *senang* 'happy/happiness' as the basic category-label

Target words

Top-5 representative members of *senang*:

- *ceria* 'cheerful'
- *gembira* 'excited; enthusiastic'
- *riang* 'very happy; joyous'
- *bahagia* 'happy'
- *senang* 'happy'

Ordering reflects measure of their categorical prototypicality (Shaver et al. 2001:217)

Focus is on the nominalised form with *ke-/-an* affix deriving abstract nouns

Corpus data

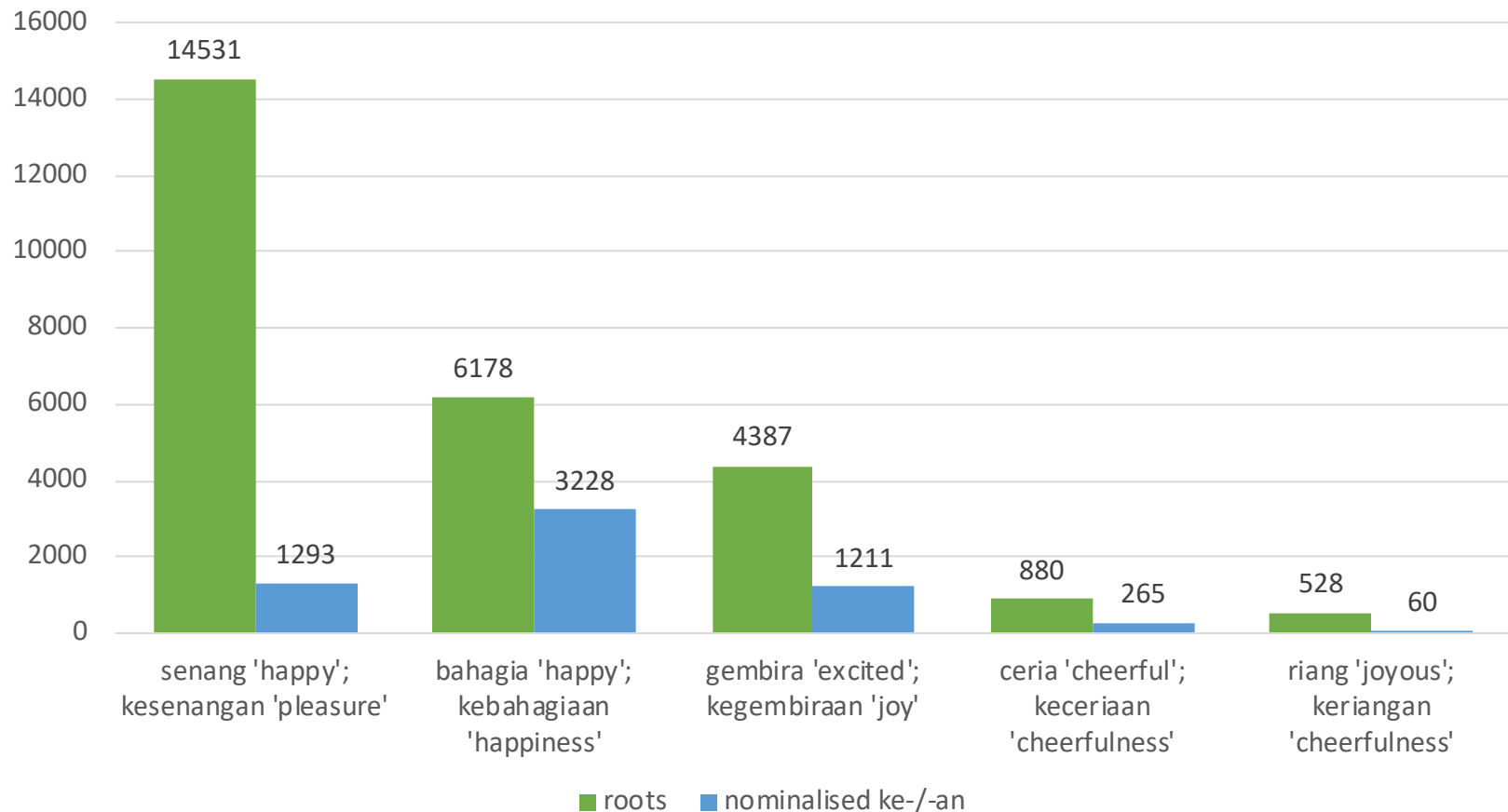
- *Indonesian Leipzig Corpora Collection* (ILCC) (Goldhahn et al. 2012; Quasthoff & Goldhahn 2013)
 - Scrambled-sentence corpus files from online materials (mostly online newspapers)
- Ten corpus files available when downloaded in May 2015
 - Up to 98,006,421 million word-tokens
- The largest, open-access Indonesian corpora to date (cc-by license)

- Goldhahn, Dirk, Thomas Eckart & Uwe Quasthoff. 2012. Building large monolingual dictionaries at the Leipzig Corpora Collection: From 100 to 200 languages. *Proceedings of the 8th Language Resources and Evaluation Conference (LREC) 2012*, 759–765. Istanbul. http://www.lrec-conf.org/proceedings/lrec2012/pdf/327_Paper.pdf (6 March, 2014).
- Quasthoff, Uwe & Dirk Goldhahn. 2013. *Indonesian corpora*. Leipzig, Germany: Abteilung Automatische Sprachverarbeitung, Institut für Informatik, Universität Leipzig. <http://asvdoku.informatik.uni-leipzig.de/corpora/data/uploads/corpus-building-vol7-ind.pdf> (27 July, 2015).

Corpus data

No	Corpus files	Size (in word tokens)
1	ind_mixed_2012_1M-sentences.txt	15,052,159
2	ind_news_2008_300K-sentences.txt	5,875,376
3	ind_news_2009_300K-sentences.txt	5,868,276
4	ind_news_2010_300K-sentences.txt	5,874,158
5	ind_news_2011_300K-sentences.txt	5,852,211
6	ind_news_2012_300K-sentences.txt	5,873,523
7	ind_newscrawl_2011_1M-sentences.txt	16,376,426
8	ind_newscrawl_2012_1M-sentences.txt	16,916,778
9	ind_web_2011_300K-sentences.txt	4,472,885
10	ind_web_2012_1M-sentences.txt	15,844,629
TOTAL SIZE		98,006,421

Frequencies of the target words in the ILCC files



Stevens, A. M., & Schmidgall Tellings, A. E. (2004). *A comprehensive Indonesian-English dictionary*. Athens, Ohio: Ohio University Press.

Multiple Distinctive Collexeme Analysis (MDCA)

- Contrasts more than two, semantically similar (grammatical) constructions in terms of their preferred lexical collocates (i.e. *collexemes*)
- Hilpert (2006, 2008) contrasts Germanic future constructions across *multiple* diachronic periods
 - Change in distinctive collexemes across periods are indicative of semantic change of the constructions

- Hilpert, Martin. 2006. Distinctive collexeme analysis and diachrony. *Corpus Linguistics and Linguistic Theory* 2(2). 243–256.
- Hilpert, Martin. 2008. *Germanic future constructions: A usage-based approach to language change*. Amsterdam ; Philadelphia: John Benjamins Publishing Company.

Multiple Distinctive Collexeme Analysis (MDCA)

- Contrasts more than two, semantically similar (lexical) constructions (i.e. near-synonyms) in terms of their preferred conceptual metaphors
 - Co-occurrence freq. of METAPHORS x SYNONYMS
- *Distinctive metaphors* for a given word are indicative of the *prominent metaphorical profiles* of the word in comparison to the other words
 - Repelled metaphors can also be identified

Multiple Distinctive Collexeme Analysis (MDCA)

- Uses *exact binomial tests*
- Compares the obs(erved) and exp(ected) freq. of each metaphor across the synonyms, given the metaphor overall freq. in the sample
 - which one is more or less freq. than exp. by chance
- Generates probability (p_{binomial}) values of the obs. freq. of the metaphor with a synonym, given the null assumption of equal distribution of the metaphor across the synonyms
 - Log-transformed p -value to the base of 10 into the so-called *collostruction strength* (I use *association strength*)



Data and R codes for the quantitative analyses are bundled into an open-source R package *happy* (Rajeg 2019b) – Open [R notebook](#) is also available (Rajeg 2019c)

- Check ‘em out at [monash.figshare](#)

- Rajeg, Gede Primahadi Wijaya. 2019b. *happy*: The accompanying R package for Rajeg’s (2019) PhD thesis titled “Metaphorical profiles and near-synonyms: A corpus-based study of Indonesian words for Happiness.” R. doi:[10.26180/5be404d6336da](https://doi.org/10.26180/5be404d6336da). <https://gederajeg.github.io/happy> (15 September, 2018).
- Rajeg, Gede Primahadi Wijaya. 2019c. R Notebook for *Metaphorical profiles and near-synonyms: A corpus-based study of Indonesian words for HAPPINESS*. figshare. Code. doi: <https://doi.org/10.26180/5cb65c06b1b17>.

Results

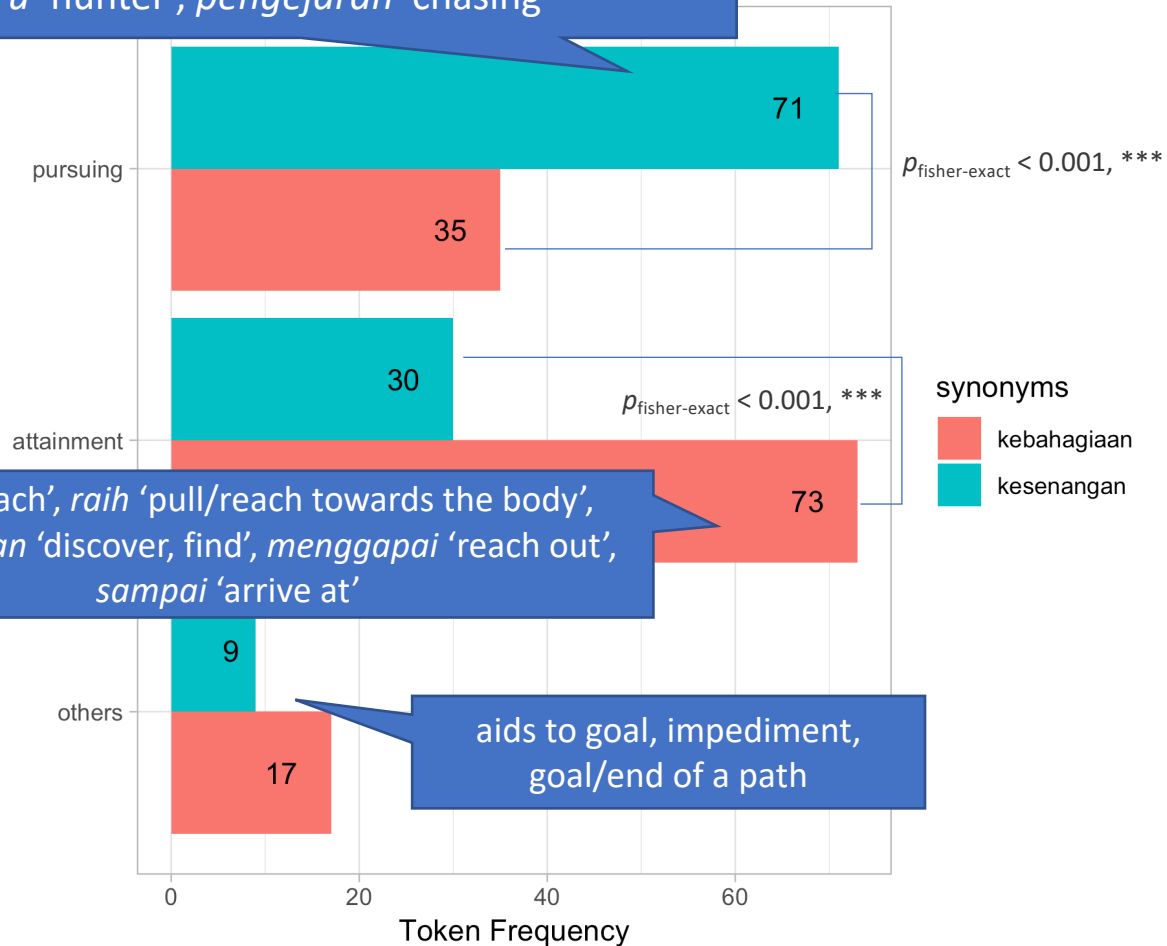
HAPPINESS IS A DESIRED GOAL

- Similar to the QUEST metaphor model (Stefanowitsch 2004, 2006)
- Strongly attracted to:
 - *kebahagiaan* 'happiness' (N = 125; AssocStr = 20.208, ***)
 - *kesenangan* 'pleasure' (N = 110; AssocStr = 15.265, ***)
- Strongly repelled by:
 - *kegembiraan* 'joy' (N = 6; AssocStr = -17.855, ***)
 - *keceriaan* 'cheerfulness' (N = 10; AssocStr = -16.982, ***)
 - *keriangian* 'cheerfulness' (N = 3; AssocStr = -4.73, *)

- I present the attracted/distinctive metaphors that are significant at $p_{\text{Binomial}} < 0.001$ (uncorrected for multiple signif. testing), i.e. **AssocStr > 3**
- The stars (*) shows the significance levels of the corrected p_{binomial} -value with Holm's method: *** = $p_{\text{Holm}} < 0.001$; ** = $p_{\text{Holm}} < 0.01$; * = $p_{\text{Holm}} < 0.05$; ms = marginally significant, i.e. $p_{\text{Holm}} \geq 0.05$; ns = not significant, i.e. $p_{\text{Holm}} \geq 1$

HAPPINESS IS A DESIRED GOAL

mencari 'search for', mengejar 'chase', memburu 'hunt', pemburu 'hunter', pengejaran 'chasing'



Undesirable tone of *kesenangan* 'pleasure'

- Attracted metaphors evoking negative valence
 - DECEIVER (N = 17; AssocStr = 9.998, ***)
 - SUBJUGATOR (N = 13; AssocStr = 6.256, ***)
 - ADVERSARY/OPPONENT (N = 12; AssocStr = 3.534, ns)
 - IMPEDIMENT TO MOTION (N = 5; AssocStr = 3.061, ns)
- Other attracted metaphors:
 - FOOD (N = 44; AssocStr = 7.815, ***)
 - POSSESSABLE OBJECT (N = 183; AssocStr = 5.776, **)

DECEIVER metaphor

- Based on lexical items evoking the DECEPTION SCENARIO source-domain frame
 - *kesenangan* maps onto the Deceiver role
 - Change in Experiencer's mental and behavioural attitude
- *kesenangan yang **menipu*** 'deceiving pleasure'
- ***terpesona** dengan kesenangan* 'spellbound with pleasure'
- ***tergoda** oleh kesenangan* 'enticed by pleasure'
- ***tersesatkan** oleh kesenangan* 'misled by pleasure'
- ***tersihir** oleh kesenangan* 'bewitched by pleasure'
- ***tertipu** dengan kesenangan* 'deceived by pleasure'
- ***terlena** dengan kesenangan* 'lulled/engrossed with pleasure'
- ***tipu muslihat** kesenangan* 'cunning trick of pleasure'

SUBJUGATOR metaphor

- Based on lexical items evoking the SERVITUDE source-domain frame
 - *kesenangan* maps onto the Subjugator role
 - complete control of pleasure over the Experiencer
- ***menuruti*** *kesenangan* 'obey/comply with pleasure'
- ***memuaskan*** *kesenangan* 'satisfy pleasure'
- *kesenangan* ***menguasai*** X 'pleasure rules X'
- ***budak*** *kesenangan* 'slave of pleasure'
- ***diperbudak*** oleh *kesenangan* 'enslaved by pleasure'
- ***melayani*** *kesenangan* 'serve (of someone) pleasure'
- ***memperturutkan*** *kesenangan* 'obey pleasure'

CONTAINER metaphors

- Specificity of the entity grounds the split into:
 - CONTAINED ENTITY (unspecified Entity)
 - LIQUID IN A CONTAINER (type-constraint as Liquid)
 - Stefanowitsch (2006) also did split LIQUID IN A CONTAINER and the more generic SUBSTANCE IN A CONTAINER
- LIQUID IN A CONTAINER is only attracted to *kegembiraan* 'joy' (N = 67; AssocStr = 11.824, ***)
- CONTAINED ENTITY is attracted to both:
 - *keceriaan* 'cheerfulness' (N = 122, AssocStr = 8.785, ***)
 - *keriangan* 'cheerfulness' (N = 43, AssocStr = 4.913, **)

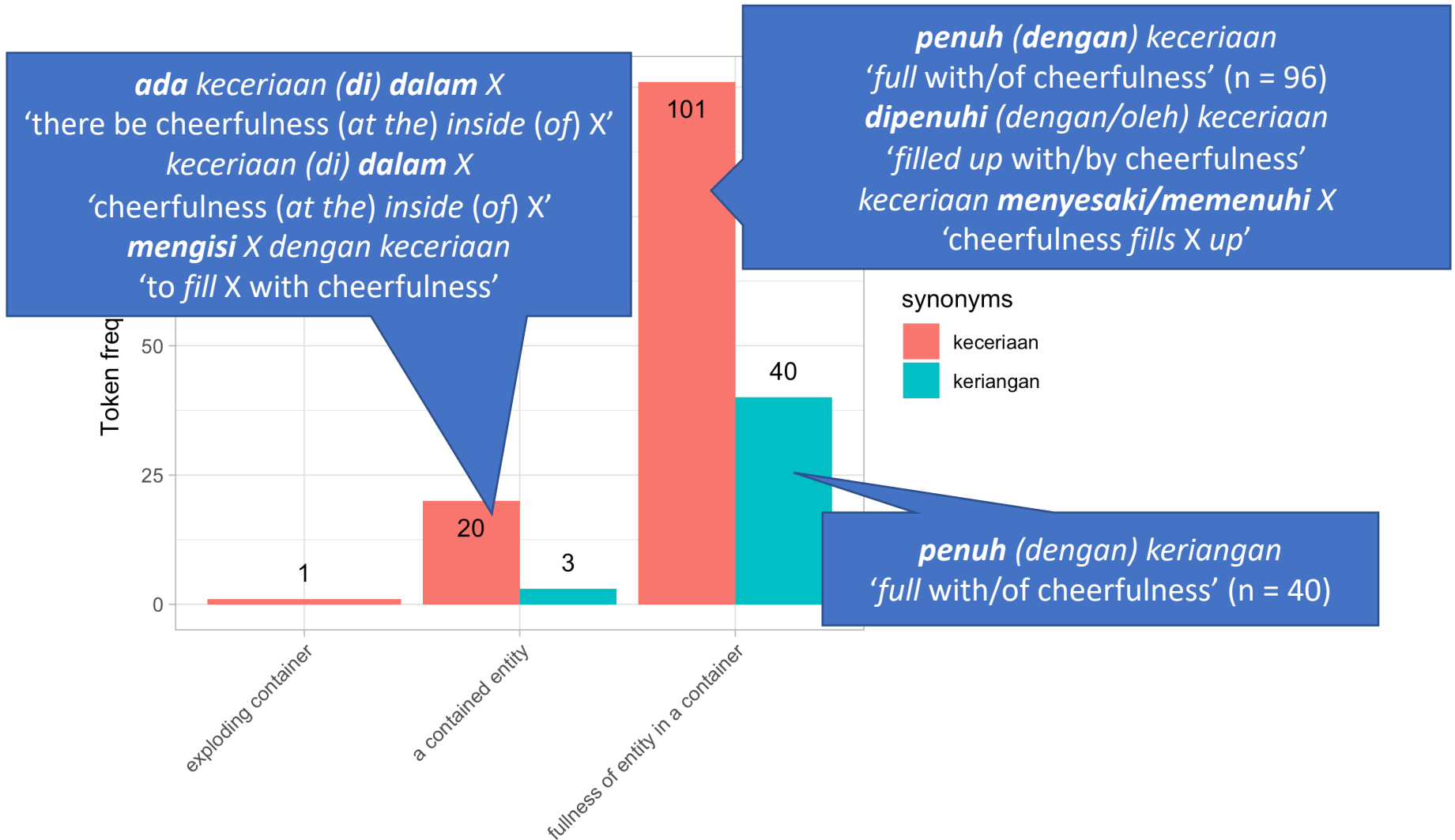
CONTAINER metaphors

- *kebahagiaan* 'happiness' strongly repels
CONTAINED ENTITY (N = 34; AssocStr = -6.099, ***)
- *kesenangan* 'pleasure' strongly repels both:
 - CONTAINED ENTITY (N = 16; AssocStr = -13.354, ***)
 - LIQUID IN A CONTAINER (N = 6; AssocStr = -6.806, ***)

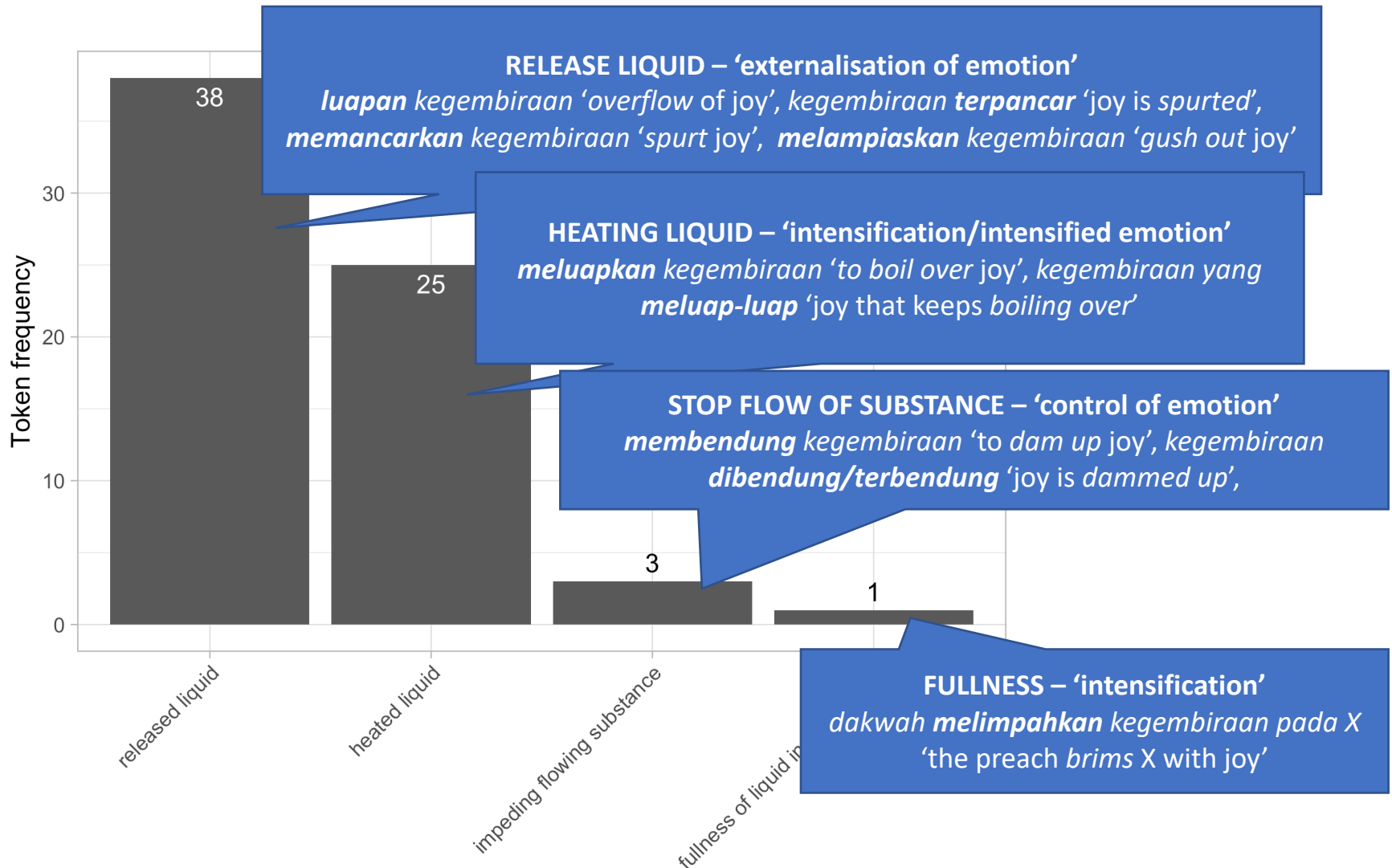
CONTAINED ENTITY

- Based predominantly on patterns referring to CONTAINING source-domain frame
 - 80.7% of the tokens of the metaphor across all words
 - HAPPINESS words map onto the Content role (unspecified as liquid)
- Another source-domain frame is BEING IN A BOUNDED REGION
 - HAPPINESS words map on the Located_Entity role (in a Bounded_Region)

CONTAINED ENTITY



LIQUID IN A CONTAINER



EMBELLISHMENT metaphor

- Attracted only to *keceriaan* 'cheerfulness' (N = 9; AssocStr = 4.116, *)
- *keceriaan **menghiasi** X* 'cheerfulness *embellishes* X'
 - 6 of 7 tokens have X specified with *wajah* 'face'
- Expressivity & vibrance (?)
 - Also attracts COLOUR metaphor (not significant at the corrected level)
 - ***warna-warni** keceriaan* 'colourfulness of cheerfulness'
 - *keceriaan kembali **merona*** 'cheerfulness is *blushing* again'
 - *keceriaan semakin **marak*** 'cheerfulness is increasingly *striking*'
 - ***melunturkan** keceriaan* 'to *fade/bleach* cheerfulness'

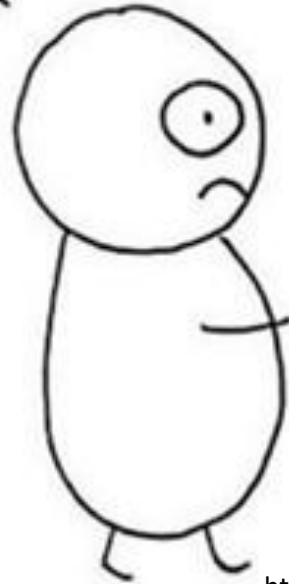
CONCLUSION

- Evidence from Indonesian for Principal Metaphor Hypothesis
 - emotion near-synonyms differ in their metaphorical profiles
- Embrace the *usage-based* data from corpora
- Assess the hypothesis using quantitative technique (e.g. distributional statistics)

CONCLUSION

- Indonesian HAPPINESS lexical-field to some extent is carved-up semantically according to similar metaphors distinguishing *happiness* and *joy*
 - *kebahagiaan* ‘happiness’ & *kesenangan* ‘pleasure’ attract the QUEST-related metaphor (i.e. DESIRED GOAL)
 - *kegembiraan* ‘joy’, *keceriaan* ‘cheerfulness’, & *keriangan* ‘cheerfulness’ attract CONTAINER-related metaphors
- Yet, there’s *kesenangan* ‘pleasure’ attracting metaphors highlighting negative valence:
 - Being deceived (DECEIVER metaphor)
 - Being under complete control (SUBJUGATOR metaphor)

Where did you
find that? I've been
searching for it everywhere.



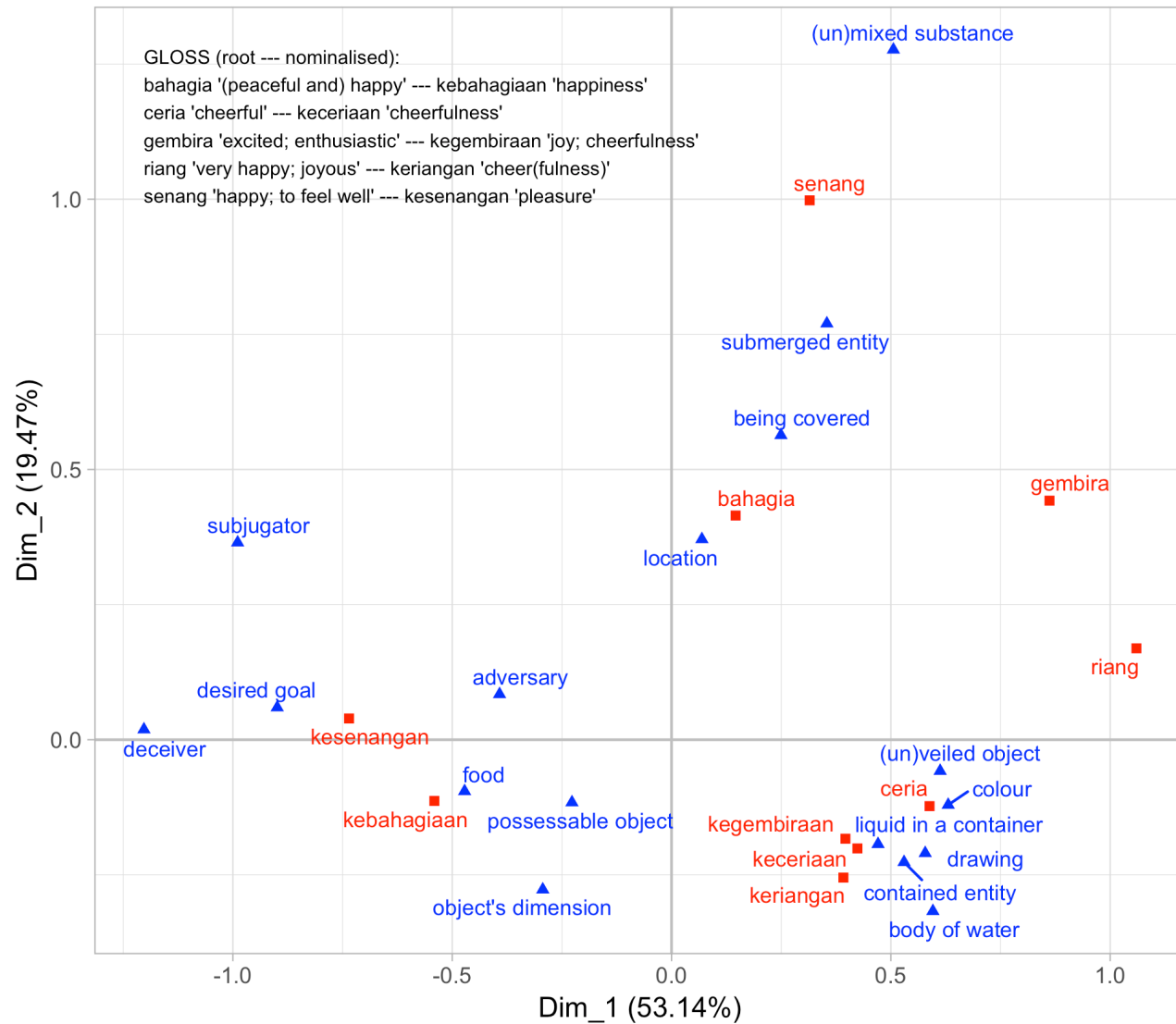
I created it
myself.



<https://bit.ly/2HEZ3sW>

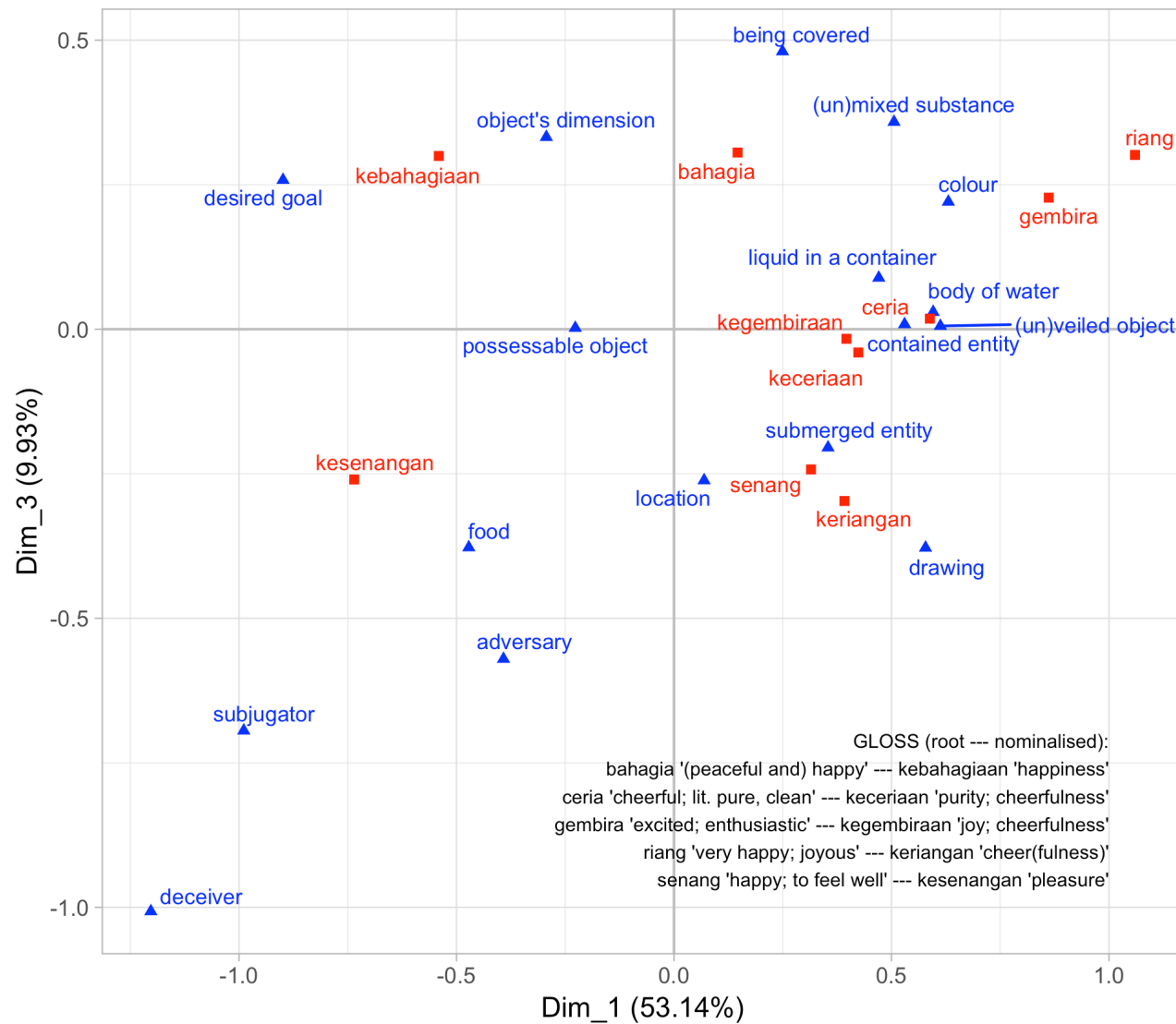
Thank You!

Correspondence Analysis for the distinctive metaphors (AssocStr > 3)



The first two dimensions represent 72.6% of the variation.

Correspondence Analysis for the distinctive metaphors (AssocStr > 3)



The first and third dimensions represent 63.07% of the variation.

Distinctive collocates for *kebahagiaan* ‘happiness’

collocates	gloss	n	exp	assoc.str	p.binom	p.holm	dec
<i>kesejahteraan</i>	welfare; well-being	82	32.701	29.646	2.258e-30	1.646e-25	***
<i>sejati</i>	true; genuine	89	37.703	26.595	2.538e-27	1.850e-22	***
<i>mencapai</i>	to reach	87	42.704	16.944	1.136e-17	8.282e-13	***
<i>akhirat</i>	hereafter; afterlife	66	29.624	16.829	1.482e-17	1.080e-12	***
<i>kesuksesan</i>	success	42	18.467	11.562	2.745e-12	2.000e-07	***
<i>kedamaian</i>	peace	56	27.315	11.358	4.389e-12	3.198e-07	***
<i>menemukan</i>	to find; to locate	68	35.394	11.260	5.496e-12	4.005e-07	***
<i>manusia</i>	human	87	50.399	10.034	9.257e-11	6.745e-06	***
<i>hidup</i>	life	172	116.956	9.889	1.290e-10	9.401e-06	***
<i>abadi</i>	eternal	49	24.238	9.626	2.365e-10	1.723e-05	***
<i>tangga</i>	stair	37	16.928	9.191	6.447e-10	4.697e-05	***
<i>menuju</i>	to head to	45	22.314	8.829	1.483e-09	1.081e-04	***
<i>hakiki</i>	true; real; intrinsic	26	10.772	8.610	2.452e-09	1.786e-04	***
<i>dunia</i>	the world	132	88.486	8.302	4.992e-09	3.637e-04	***
<i>keselamatan</i>	safety	32	14.619	8.049	8.939e-09	6.512e-04	***
<i>kesehatan</i>	health	35	16.543	7.982	1.041e-08	7.584e-04	***
<i>meraih</i>	to catch-hold of	45	23.853	7.274	5.322e-08	3.876e-03	**
<i>umat</i>	followers of a religion	26	11.542	7.151	7.063e-08	5.144e-03	**
<i>orang</i>	people	120	82.331	6.855	1.396e-07	1.016e-02	*
<i>merasakan</i>	to feel	92	60.017	6.752	1.769e-07	1.288e-02	*

Distinctive collocates for *kesenangan* ‘pleasure’

collocates	gloss	n	exp	assoc.str	p.binom	p.holm	dec
<i>duniawi</i>	worldly; earthly	52	10.298	28.818	1.520e-29	1.108e-24	***
<i>pribadi</i>	personal	30	5.994	16.702	1.985e-17	1.446e-12	***
<i>mencari</i>	to search; to look for	55	17.522	15.757	1.748e-16	1.274e-11	***
<i>kenikmatan</i>	pleasure; enjoyment	37	11.835	10.789	1.624e-11	1.184e-06	***
<i>hobi</i>	hobby	14	2.306	10.278	5.277e-11	3.845e-06	***
<i>nafsu</i>	lust	19	3.996	10.114	7.689e-11	5.603e-06	***
<i>semata</i>	simply; merely	14	2.613	8.756	1.756e-09	1.279e-04	***
<i>keuntungan</i>	profit	12	2.152	7.934	1.165e-08	8.488e-04	***
<i>kepentingan</i>	interest; concern	13	2.613	7.464	3.438e-08	2.504e-03	**
<i>seksual</i>	sexual	10	1.691	7.157	6.964e-08	5.072e-03	**
<i>menikmati</i>	to taste; to relish	42	18.291	7.136	7.312e-08	5.326e-03	**
<i>menunda</i>	to delay; to postpone	8	1.230	6.507	3.115e-07	2.268e-02	*
<i>kebutuhan</i>	needs	10	1.998	5.873	1.341e-06	9.762e-02	ms
<i>mengejar</i>	to chase; to run after	17	5.072	5.844	1.431e-06	1.042e-01	ns
<i>prinsip</i>	principle	8	1.383	5.616	2.421e-06	1.762e-01	ns
<i>mendapat</i>	to get; to receive	22	7.993	5.521	3.016e-06	2.196e-01	ns
<i>berdasarkan</i>	to be founded/based on	10	2.152	5.394	4.040e-06	2.941e-01	ns
<i>hawa</i>	air	9	1.844	5.171	6.744e-06	4.908e-01	ns
<i>waktu</i>	time	18	6.302	4.896	1.270e-05	9.242e-01	ns
<i>dosa</i>	sin	6	0.922	4.880	1.319e-05	9.594e-01	ns

Distinctive collocates for *kegembiraan* ‘joy’

collocates	gloss	n	exp	assoc.str	p.binom	p.holm	dec
<i>luapan</i>	an overflow	24	4.756	13.603	2.494e-14	1.818e-09	***
<i>meluapkan</i>	to boil sth. over	21	3.835	13.269	5.377e-14	3.919e-09	***
<i>menyatakan</i>	to state; to express	17	4.142	7.592	2.559e-08	1.864e-03	**
<i>pendukung</i>	supporter	15	3.682	6.701	1.993e-07	1.451e-02	*
<i>menyambut</i>	to receive; to welcome	21	6.904	6.162	6.883e-07	5.011e-02	ms
<i>larut</i>	be washed-and-drawn away	14	3.682	5.774	1.683e-06	1.225e-01	ns
<i>kesedihan</i>	sadness	19	6.597	5.197	6.351e-06	4.622e-01	ns
<i>terlihat</i>	be visible; can be seen	22	8.591	4.907	1.238e-05	9.007e-01	ns
<i>menyaksikan</i>	to witness	10	2.455	4.628	2.357e-05	1.000e+00	ns
<i>masyarakat</i>	society	25	11.046	4.402	3.963e-05	1.000e+00	ns
<i>kubu</i>	camp; party	7	1.381	4.268	5.400e-05	1.000e+00	ns
<i>warga</i>	residents	16	5.830	4.158	6.955e-05	1.000e+00	ns
<i>gol</i>	goal	5	0.767	4.071	8.499e-05	1.000e+00	ns
<i>tim</i>	team	12	3.835	3.910	1.231e-04	1.000e+00	ns
<i>dirasakan</i>	to be felt	22	9.819	3.875	1.333e-04	1.000e+00	ns
<i>paskah</i>	Easter	6	1.227	3.560	2.755e-04	1.000e+00	ns
<i>pemain</i>	player	10	3.068	3.522	3.003e-04	1.000e+00	ns
<i>laga</i>	war; battle	5	0.921	3.352	4.448e-04	1.000e+00	ns
<i>belanda</i>	The Netherlands	4	0.614	3.257	5.540e-04	1.000e+00	ns
<i>dihati</i>	in the liver	4	0.614	3.257	5.540e-04	1.000e+00	ns
<i> gawang</i>	net/goal (of soccer)	4	0.614	3.257	5.540e-04	1.000e+00	ns

Distinctive collocates for *keceriaan* ‘cheerfulness’

collocates	gloss	n	exp	assoc.str	p.binom	p.holm	dec
<i>anak-anak</i>	children; kids	91	19.123	42.698	2.003e-43	1.460e-38	***
<i>penuh</i>	be full	119	46.831	21.976	1.057e-22	7.707e-18	***
<i>mengembalikan</i>	to give back sth.	19	3.122	12.487	3.256e-13	2.372e-08	***
<i>semangat</i>	enthusiasm	25	6.374	9.732	1.852e-10	1.350e-05	***
<i>masa</i>	period; time	31	9.366	9.502	3.151e-10	2.296e-05	***
<i>wajah</i>	the face	37	13.269	8.653	2.222e-09	1.619e-04	***
<i>menambah</i>	to add	20	5.203	7.721	1.902e-08	1.385e-03	**
<i>sekolah</i>	school	13	2.602	7.016	9.638e-08	7.019e-03	**
<i>anak</i>	child	39	16.391	6.901	1.255e-07	9.142e-03	**
<i>kesegaran</i>	freshness	7	0.911	6.200	6.304e-07	4.590e-02	*
<i>lebanon</i>	Lebanon	7	0.911	6.200	6.304e-07	4.590e-02	*
<i>warna</i>	colour	12	2.602	5.972	1.067e-06	7.765e-02	ms
<i>tetap</i>	to remain; to keep on	17	5.203	5.412	3.872e-06	2.819e-01	ns
<i>suasana</i>	situation; atmosphere	22	8.195	5.115	7.672e-06	5.583e-01	ns
<i>terpancar</i>	be spurted out	22	8.326	4.989	1.026e-05	7.463e-01	ns
<i>mewarnai</i>	to colour	10	2.342	4.652	2.228e-05	1.000e+00	ns
<i>pertunjukan</i>	show	5	0.650	4.429	3.725e-05	1.000e+00	ns
<i>korban</i>	victim	7	1.301	4.278	5.269e-05	1.000e+00	ns
<i>lebaran</i>	Ramadhan	7	1.301	4.278	5.269e-05	1.000e+00	ns
<i>menghiasi</i>	to embellish	7	1.301	4.278	5.269e-05	1.000e+00	ns

Distinctive collocates for *keceriaan* ‘cheerfulness’

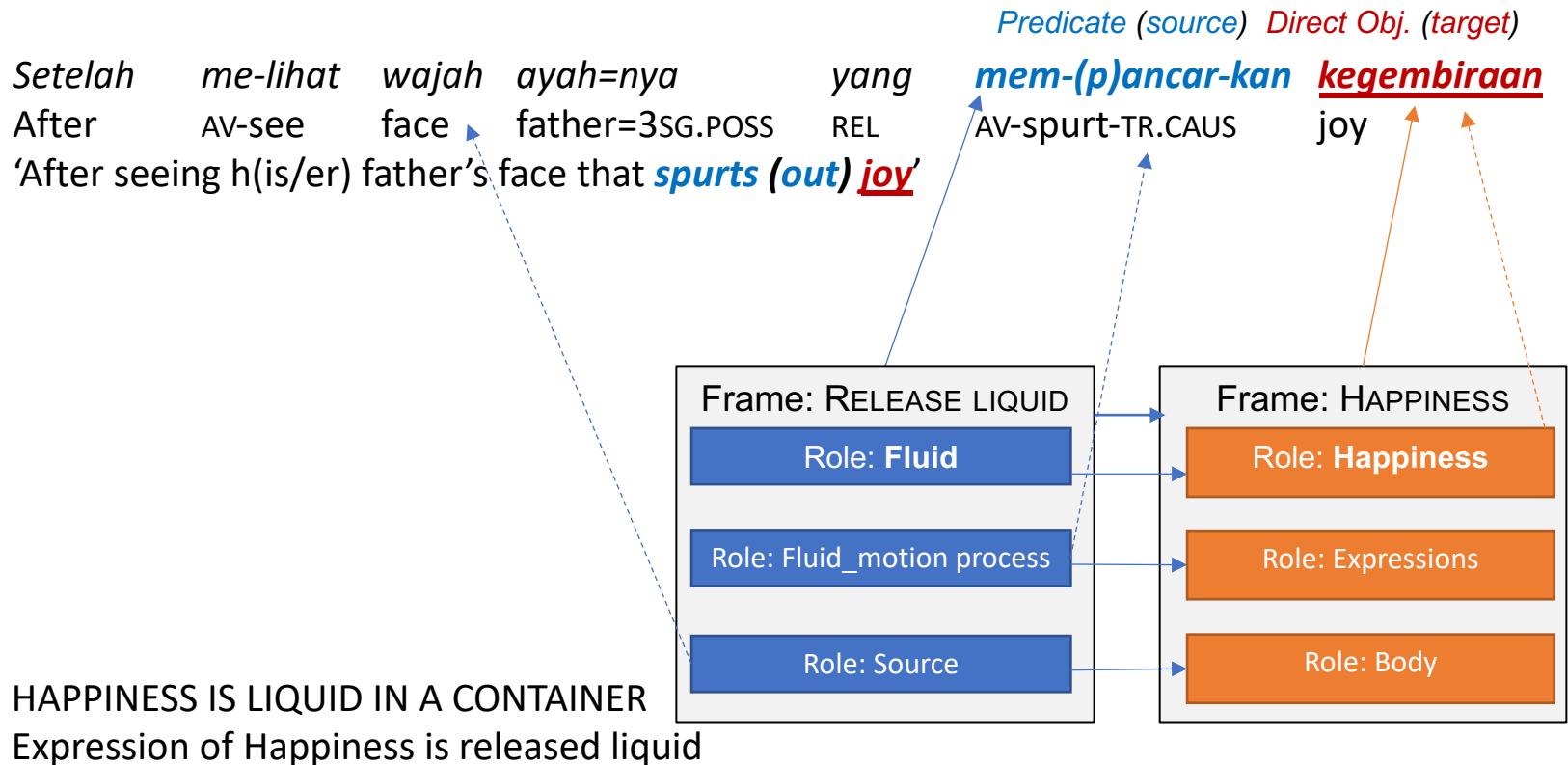
collocates	gloss	n	exp	assoc.str	p.binom	p.holm	dec
<i>penuh</i>	be full	48	16.579	10.210	6.159e-11	4.488e-06	***
<i>kanak-kanak</i>	children; kids	7	0.599	6.230	5.894e-07	4.291e-02	*
<i>politik</i>	politics	5	0.368	4.986	1.032e-05	7.508e-01	ns
<i>terakhir</i>	last; final	5	0.368	4.986	1.032e-05	7.508e-01	ns
<i>menggambarkan</i>	to draw; to depict	8	1.151	4.967	1.079e-05	7.851e-01	ns
<i>kehebatannya</i>	the grandeur	3	0.138	4.010	9.768e-05	1.000e+00	ns
<i>bocah</i>	child	4	0.368	3.567	2.711e-04	1.000e+00	ns
<i>imajinasi</i>	imagination	3	0.184	3.423	3.772e-04	1.000e+00	ns
<i>keseronokan</i>	delight; pleasure	3	0.184	3.423	3.772e-04	1.000e+00	ns
<i>mengajar</i>	to teach	3	0.184	3.423	3.772e-04	1.000e+00	ns
<i>anak-anak</i>	children; kids	17	6.770	3.331	4.665e-04	1.000e+00	ns
<i>khas</i>	unique	4	0.414	3.328	4.701e-04	1.000e+00	ns
<i>empat</i>	four	4	0.461	3.122	7.549e-04	1.000e+00	ns
<i>kekonyolan</i>	foolishness	3	0.230	3.041	9.105e-04	1.000e+00	ns
<i>ketulusan</i>	sincerity	3	0.230	3.041	9.105e-04	1.000e+00	ns
<i>memancarkan</i>	to spurt out	4	0.507	2.942	1.143e-03	1.000e+00	ns
<i>mendengar</i>	to hear	4	0.507	2.942	1.143e-03	1.000e+00	ns
<i>hilang</i>	to vanish; be gone	6	1.243	2.913	1.222e-03	1.000e+00	ns
<i>menunjukkan</i>	to show	7	1.704	2.875	1.334e-03	1.000e+00	ns
<i>berbalut</i>	be bandaged	3	0.276	2.755	1.758e-03	1.000e+00	ns
<i>kejayaan</i>	victory	3	0.276	2.755	1.758e-03	1.000e+00	ns

MetaNet (MN)

- Hybrid of **Frame Semantics** and (Embodied) **Construction Grammar**
 - formalising CMT for large-scale, computational metaphor analysis
 - MPA's key step is also adopted
- CM represents mappings between semantic frames and roles mediated via grammatical constructions of the metaphorical expressions
- MN has [repository](#) for conceptual metaphors and semantic frames

MetaNet (MN)

Formalised representation of links between metaphoric construction & the evoked mappings



- Dodge, E. (2016). A deep semantic corpus-based approach to metaphor analysis: A case study of metaphoric conceptualizations of poverty. *Constructions & Frames*, 8(2), 256–294. <https://doi.org/10.1075/cf.8.2.05dod>
- David, O. (2017). Computational approaches to metaphor: The case of MetaNet. In B. Dancygier (Ed.), *The Cambridge handbook of Cognitive Linguistics* (pp. 574–589). New York, NY: Cambridge University Press.