Metaphorical Profiles of Five Indonesian Quasi-synonyms of ANGER: Multiple Distinctive Collexeme Analysis[1]

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1. Introduction

This paper aims to capture semantic differences amongst five synonymous nouns referring to the target domain (TD) of ANGER in Indonesian in terms of their preferred metaphorical patterns by combining two quantitative corpus-based method: *metaphorical pattern analysis* (MPA) (Stefanowitsch 2004; 2006) and *multiple distinctive collexeme analysis* (MDCA) (Stefanowitsch and Gries 2009, 944–946; Hilpert 2006). The five nouns are *kemarahan, kemurkaan, kegeraman, kejengkelan,* and *kekesalan*.

1.1 Brief overview of Metaphorical Pattern Analysis

MPA is one of corpus-based, metaphor-research strategies that starts with retrieving from corpus occurrences of a word referring to a particular TD and then identifying metaphorical patterns in which the TD word occurs (Stefanowitsch 2004; 2006). A metaphorical pattern is defined as "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" (Stefanowitsch 2006, 66).

Table 1 Examples of metaphorical patterns in the data and their underlying mappings

NO.	CITATIONS (NEWSPAPERS SOURCE)	PATTERNS	MAPPINGS
(1) a	*Itulah, **pangkal** ketidakpuasan dan* <u>*kegeraman*</u> *mereka* (Suara Merdeka)	*pangkal NP_E* 'base (of a plant) of E'	ANGER IS PLANT
b	*[…] Indra datang berdua malam itu untuk **mengobati*** <u>*kejengkelan*</u> *Adilla.* (Indopos)	*mengobati NP_E* 'to medicate/treat E'	ANGER IS DESEASE
c	*Karena pada saat itu **api₁** <u>kemarahan</u> **berkobar₂** **membakar₃** darah di hati* (Republika)	*api NP_E berkobar membakar X* 'blazing fire of E burns X'	ANGER IS FIRE₁,₂,₃
d	*PRANSISKA Dewi (kiri) **meluapkan₁*** <u>*kekesalan*</u> ***kepada₂** perwakilan Bank Century* (Kompas)	*meluapkan NP_E kepada X* 'to vent E to/at X'	ANGER IS HOT FLUID IN A CONTAINER₁; ANGER IS DIRECTION-GOAL₂
e	*"Sesungguhnya sedekah yang dilakukan secara diam-diam dapat **memadamkan*** <u>kemurkaan</u> Allah Azza wa Jalla'."* (Suara Merdeka)	*memadamkan NP_E* 'to extinguish E'	ANGER IS FIRE

1.2 Previous works

Several attempts investigating interaction of metaphors and synonymous words, particularly those referring to the TD of EMOTION, have been carried out. Stefanowitsch (2004) contrasted metaphors associated with *happiness* and *joy* in English and their German translations, i.e. *Glück* and *Freude* respectively, based on newspapers corpora. It is shown that those emotion words exhibit differences with respect to their associated metaphorical conceptualisations. Similarly, in his later study using *British National Corpus* (BNC), Stefanowitsch (2006, 96–99) also found that *happiness* and *joy* to some extent differ quantitatively and qualitatively in the way they are used metaphorically. One other closely related study is Ogarkova (2007) who analysed two synonyms denoting "social emotions", i.e. *envy* and *jealousy*, based on BNC. She also found that there are several metaphors significantly differentiating the way those synonyms are conceptualised. The present case study is geared towards extending those previous works by incorporating MDCA into MPA to analyse more than just two synonyms of different TD, i.e. ANGER, and of genetically different language, i.e. Indonesian.

2. Research questions and operationalisations

a) *Are there differences in the way the five synonyms of ANGER are conceptualised metaphorically?*
  - Does a given TD word, as compared to its synonyms, co-occur more frequently with particular metaphorical patterns?

b) *If there are differences, how meaningful are they and in what way can these be captured?*
  - If frequency of co-occurrences of the TD words with particular metaphorical patterns shows biases, how significant is it such that particular patterns are more strongly preferred to co-

occur with a given TD word as compared to its synonyms? What corpus-based method can be used to identify such preferences?

c) *What do these different preferences of metaphorical conceptualisation reveal?*
   - What semantic nuances do the relatively significantly preferred metaphorical patterns of each of the five TD words evoke?

3. Methodology

The data in this study came from corpus of ten Indonesian electronic newspapers[2]. Each newspaper was searched online via *Webcorp* (http://www.webcorp.org.uk/live/) to generate concordance of each of the five TD words. In total, 1712 concordance lines for all of the five TD words were generated. After manually removing 169 duplicates, there were 1543 relevant remaining citations with the following distribution: 700 for *kemarahan*, 402 for *kekesalan*, 210 for *kejengkelan*, 158 for *kegeraman*, and 73 for *kemurkaan*. Next, each citation was manually inspected and grouped into "literal" and "metaphorical" following the steps outlined by Pragglejaz Group (2007). There are generally two types of metaphorical patterns identified: (i) mixed metaphors (32%), i.e. patterns with two or more source domains items, either similar (see [1c] above) or different (cf. [1d]), applied to one TD word (Barron 2011, 1), and (ii) single metaphor (68%), i.e. patterns with one source domain item. As an illustrating case study, this study focuses on single metaphorical patterns, particularly those occurring in one slot prior to the TD words (to be called as "SingleMP-Pre1TD" type) (see [1a, b, & e] above), since it is the most frequent of all cases. Afterwards, frequency lists of the metaphorical patterns across the TD words were generated for MDCA.

MDCA is a member of a family of methods called *collostructional analysis* (Stefanowitsch and Gries 2009, 940–948) and functions to compare more than two semantically or functionally near-synonymous constructions in terms of their preferred lexical collocates (Hilpert 2006, 245–247). In this study, the metaphorical patterns in which the TD words occur are treated as collocates of the TD words. This application could be conceived as the reverse extension of collostructional analysis (Stefanowitsch and Gries 2003, 237): looking at a particular word, in this case each of the five nouns referring to ANGER, and then identifying in which constructions or, in this case, metaphorical patterns it prefers to occur significantly frequently. The results would thus give rise to typical metaphorical profiles of a given TD word. Table 2 shows the top three most frequent metaphorical patterns for each of the five TD words.

Table 2 Three most frequent metaphorical patterns over the five TD words of ANGER

PATTERNS	*kemarahan*	*kekesalan*	*kemurkaan*	*kejengkelan*	*kegeraman*	Row totals
memicu NP$_E$ 'to trigger E'	43	4	2	2	1	52
menimbulkan NP$_E$ 'to surface E'	15	1	4	1	4	25
sasaran NP$_E$ 'target of E'	15	5	0	1	0	21
…	…	…	…	…	…	…
Column totals	297	153	34	72	48	604

MDCA examines whether and how statistically significant the observed frequencies in each cell in Table 2 above differ from their expected frequencies. Let us illustrate this process with the pattern *memicu NP$_E$* 'to trigger E'. As shown in Table 3 below, the observed frequencies of *memicu NP$_E$* are compared across the overall frequencies of the five TD words. By so doing, the degree and direction of association, i.e. whether occurring statistically significantly more (attracted) or less frequent (repelled) than expected, between *memicu NP$_E$* with each of the TD words can be determined.

Table 3 Distribution of *memicu NP$_E$* over the five TD words of ANGER

	memicu NP$_E$ 'to trigger E'	other patterns	Row totals
kemarahan	43	254	297
kekesalan	4	149	153
kemurkaan	2	32	34
kejengkelan	2	70	72
kegeraman	1	47	48
Column totals	52	552	604

The pattern *memicu NP$_E$* occurs with *kemarahan* 43 times of its overall 52 occurrences with any TD word in "SingleMP-Pre1TD" type. Given that in total *kemarahan* occurs 297 times in "SingleMP-Pre1TD" type and there are total 604 cases of "SingleMP-Pre1TD" type in the data, the expected frequency of *memicu NP$_E$* with *kemarahan* is 25.57 (297*52/604) (Hilpert 2006, 246–247). This indicates that the observed frequency of *memicu NP$_E$* with *kemarahan* differs positively, i.e. occurring more frequently than expected. In contrast, for instance, the expected frequency of the same pattern with *kekesalan* is 13.17 (153*52/604), meaning that the pattern differs negatively, i.e. occurring less frequently than expected.

MDCA implements *exact binomial test* to determine whether the differences between the observed and expected frequencies are statistically significant. The log-transformed *p*-value returned by the test is taken as measure of strength of attraction/repulsion between metaphorical patterns and each of the five synonyms (Stefanowitsch and Gries 2005, 7). In collostructional analysis, that measure is labelled as *collostruction strength* (henceforth *Coll.Str*) (Stefanowitsch and Gries 2003). Coll.Str values exceeding 1.3, 2, and 3 indicate that a metaphorical pattern is distinctive at the levels of significance $p<0.05$, $p<0.01$, and $p<0.001$ respectively (Stefanowitsch and Gries 2005, 7). The direction of association can be seen from the sign attached to the Coll.Str value: positive sign indicates a metaphorical pattern occurs more frequently than expected and vice versa. To stay with the example in Table 3, Coll.Str of *memicu NP_E* with *kemarahan* is 6.24, indicating that the pattern is relatively strongly attracted to *kemarahan*. In contrast, *memicu NP_E* is significantly repelled by both *kekesalan* (Coll.Str = -2.93) and *kejengkelan* (Coll.Str = -1.36). The computation for MDCA is performed by *Coll.analysis 3.2a* (Gries 2007), a program script written by Stefan Th. Gries for a software package *R*.

4. Results and interpretation

Table 4 and 5 list the significantly attracted metaphorical patterns for each of the five synonymous nouns of ANGER ranked in descending order according to their collostruction strength.

Table 4 Distinctive metaphorical patterns for *kekesalan*, *kemarahan*, and *kejengkelan*

Kekesalan (N = 153)		*Kemarahan* (N = 297)		*Kejengkelan* (N = 72)	
PATTERNS (N)	COLL.STR	PATTERNS (N)	COLL.STR	PATTERNS (N)	COLL.STR.
akumulasi NP_E 'accumulation of E' (9)	5.37	*memicu NP_E* 'to trigger E' (43)	6.24	*menggambarkan NP_E* 'to depict E' (4)	3.04
menumpahkan NP_E 'to spill E' (8)	3.34	*memancing NP_E* 'to fish for E' (13)	2.51	*puncak NP_E* 'peak of E' (11)	2.52
puncak NP_E 'peak of E' (18)	2.73	*meredakan NP_E* 'to abate E' (10)	2.3	*ungkapan NP_E* 'expression of E' (4)	2.02
(berawal) dari NP_E '(to begin) from E' (5)	2.31	*menyulut NP_E* 'to ignite E' (10)	1.78	*NP_{E1} bertemu dengan NP_{E2}* 'E_1 meets with E_2' (2)	1.85
bentuk NP_E 'form/shape of E' (9)	2.09	*picu^3 NP_E* 'to trigger E' (8)	1.76	*didasari NP_E* 'to be based on E' (2)	1.85
dipicu NP_E 'to be triggered by E' (6)	1.97	*VP dengan NP_E* 'acting with E' (9)	1.54	*menampakkan NP_E* 'to reveal/expose E' (2)	1.85
menyimpan NP_E 'to keep E' (3)	1.79	*sasaran NP_E* 'target of E' (15)	1.48		
melampiaskan NP_E 'to wreak E (lit. to cause to flow rapidly)' (8)	1.53				

Table 5 Distinctive metaphorical patterns for *kemurkaan* and *kegeraman*

Kemurkaan (N = 34)		*Kegeraman* (N = 48)	
PATTERNS (N)	COLL.STR	PATTERNS (N)	COLL.STR
penuh NP_E 'to be full of E' (3)	2.09	*didorong NP_E* 'to be pushed by E' (2)	2.2
menghindari NP_E 'to keep off from/avoid E' (2)	1.39	*penuh NP_E* 'to be full of E' (3)	1.68
menimbulkan NP_E 'to surface E' (4)	1.31		

Kekesalan strongly attracts several distinctive metaphorical patterns referring to the domains of QUANTITY (*akumulasi NP_E* 'accumulation of E'), LIQUID IN A CONTAINER (*menumpahkan/melampiaskan NP_E* 'to spill/wreak E') and HEIGHT (*puncak NP_E* 'peak of E') whose meaning focus is all coherently centred on the aspect of "intensity" (Kövecses 2000, 41). Additionally, *kekesalan* is seen as the "cause/source" of certain happenings as reflected in the distinctive patterns evoking metaphorical SDs of PHYSICAL FORCE (*dipicu NP_E* 'to be triggered by E') and LOCATION (*[berawal] dari NP_E* '[to begin] from E'). The remaining two distinctive metaphorical patterns of *kekesalan* refer to the SDs of PHYSICAL OBJECT (*bentuk NP_E* 'from/shape of E') and POSSESSION (*menyimpan NP_E* 'to keep E'), which both plausibly encode the "presence/existence" of emotion (Kövecses 2000, 41).

In the majority of cases, the significantly distinctive metaphorical patterns of *kemarahan* focus on the "initiation/setting off" of emotion. This aspect is strongly reflected in the patterns instantiating distinct

SDs, namely WEAPON/FIREARM (*memicu/picu* NP_E 'to trigger E') (Ogarkova 2007, 103), FIRE (*menyulut* NP_E 'to ignite E'), and CALM ANIMALS/ORGANISMS (*memancing* NP_E 'to fish for E') (Stefanowitsch 2006, 76). The remaining three metaphorical patterns manifest different SDs with diversely highlighted aspects. The pattern *VP dengan NP_E* 'acting with E' refers to the SD of ACCOMPANIMENT (Ogarkova 2007, 115) and may denote "presence/existence" of emotion on a person doing particular actions. The pattern *sasaran NP_E* 'target of E' refers to the SD of MOVED OBJECT (Stefanowitsch 2006, 75) and plausibly denote "manipulatability" of emotion as an object. Lastly, the pattern *meredakan NP_E* 'to abate E' refers to the SD of NATURAL FORCE and denote effort to reduce "intensity" of emotion.

Turning to *kejengkelan*, the most strongly distinctive metaphorical pattern (*menggambarkan NP_E* 'to depict E') encodes the aspect of "perceptibility" of emotion. The aforementioned semantic aspect is also mirrored in two other distinctive metaphorical patterns for *kejengkelan*, i.e. *ungkapan NP_E* 'expression of E' and *menampakkan NP_E* 'to reveal/expose E'. Those patterns may be conceived as the linguistic manifestations of the SD of UNSHOWN/HIDDEN OBJECT. Next, the pattern *puncak NP_E* 'peak of E' that instantiates the SD of HEIGHT and highlights the aspect of "intensity" of emotion is also significantly attracted to *kejengkelan*. The last two distinctive metaphorical patterns of *kejengkelan* refer to the SD of FOUNDATION (*didasari NP_E* 'to be based on E') (Stefanowitsch 2006, 93), conveying the notion of emotion as a "cause/source" of certain happenings, and the SD of ASSEMBLY (*NP_{E1} bertemu dengan NP_{E2}* 'E_1 meets with E_2'), conveying the "union" aspect of two assembled emotions.

For *kemurkaan*, MDCA only identified three significantly distinctive metaphorical patterns that in fact do not form a coherent semantic class. The most distinctive metaphorical pattern of *kemurkaan* is *penuh NP_E* 'to be full of E', referring to "intensity" of emotion and instantiating the SD of SUBSTANCE IN A CONTAINER (Stefanowitsch 2006, 76). The remaining two distinctive metaphorical patterns of *kemurkaan* realise the SD of IMPEDIMENT (*menghindari NP_E* 'to keep off from/avoid E') (Kövecses 2000, 54), focusing on the aspect of "difficulty" posed by emotion, and the SD of UNSHOWN/HIDDEN OBJECT (*menimbulkan NP_E* 'to surface E'), focusing on the aspect of "perceptibility".

Lastly, *kegeraman* is characterised by two significantly distinctive metaphorical patterns. The most strongly attracted metaphorical pattern for *kegeraman* is *didorong NP_E* 'to be pushed by E' that denotes the SD of PHYSICAL FORCE and highlights the role of emotion as a "cause/source" of certain happenings. Another distinctive metaphorical pattern for *kegeraman* is the pattern *penuh NP_E* 'to be full of E', which is also the most distinctive pattern for *kemurkaan*, and it profiles the aspect of "intensity".

Table 6 below summarises previous discussion on the continuum of semantic nuances of each of the five synonyms of ANGER in Indonesian metaphorically profiled by their distinctive metaphorical patterns. The model for this analytical tabulation is adapted from Wulff et al (2007, 274).

Table 6 Distribution of summed COLL.STR of distinctive metaphorical patterns in "SingleMP-Pre1TD" type according to metaphorically profiled semantic nuances

	Target Domain of ANGER					Row totals
	kekesalan	*kemarahan*	*kejengkelan*	*kemurkaan*	*kegeraman*	
"intensity"	12.97	2.3	2.52	2.09	1.68	21.56
"initiation/setting off"	-	12.29	-	-	-	12.29
"cause/source"	4.28	-	1.85	-	2.2	8.33
"perceptibility"	-	-	6.91	1.31	-	8.22
"existence"	3.88	1.54	-	-	-	5.42
"union"	-	-	1.85	-	-	1.85
"manipulatability"	-	1.48	-	-	-	1.48
"difficulty"	-	-	-	1.39	-	1.39
Column totals	21.13	17.61	13.13	4.79	3.88	60.54

It can be seen that, for instance, the sum of Coll.Str values of all distinctive metaphorical patterns of *kekesalan* denoting "intensity" amounts to 12.97. It is at least five times as higher as the Coll.Str values of the distinctive metaphorical patterns of each of the remaining four lexical items denoting "intensity" as well. It thus seems reasonable to suggest that "intensity" is the most strongly associated metaphorical profile for *kekesalan* as opposed to the other lexical items in the data. Furthermore, "intensity" is also shown to be the most salient aspect for ANGER in general regardless of lexical items with the highest overall sum of Coll.Str (21.56) as compared to the other aspects. Other noticeable differences are for instance strong bias of "initiation/setting off" aspect of ANGER towards *kemarahan* and stronger attraction of "perceptibility" aspect of ANGER towards *kejengkelan*. By and large, Table 6 implies that the range of metaphorically profiled semantic nuances denoted by the distinctive metaphorical patterns for each of the TD lexical item exhibit varying degree of salience according to the sum of Coll.Str values.

5. Conclusion

This study has demonstrated the viability of combination of two quantitative corpus-based methods (MPA and MDCA) in capturing semantic differences amongst synonymous nouns from the TD of EMOTION, particularly ANGER. On a more general level, the findings of this study provide further credence to previous studies analysing different languages and different TDs that to some extent there are intra-domain differences reflected in the way particular metaphorical patterns interact significantly with particular lexical items referring to the same TD. More specifically, the results of this study have shown that despite referring to the same TD concept, the five synonymous nouns of ANGER in Indonesian differ significantly to a varying degree in terms of their strongly attracted metaphorical patterns. The distinctive metaphorical patterns can offer guidance about and be the basis for revealing classes of metaphorical source domains and continuum of metaphorically profiled semantic nuances relatively highly associated with each of the five synonymous nouns. As a result, metaphorical profiles potential and the relative salience of those profiles can be accentuated. Finally, further study should definitely replicate, confront, and thus reassess the by now hypotheses resulting from the present case study with much larger and relatively balanced corpus as part of the cycle of empirical research.

6. Bibliography

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[1] Earlier version of this study has been presented at the 6th International Seminar on Austronesian-Non Austronesian Languages and Literature at Udayana University, Bali, Indonesia, in November 2013.

[2] *Indopos* (www.indopos.co.id), *Kompas* (www.kompas.com), *Koran Tempo* (www.koran.tempo.co), *Media Indonesia* (www.mediaindonesia.com), *Pikiran Rakyat* (www.pikiran-rakyat.com), *Republika* (www.republika.co.id), *Harian Seputar Indonesia* (www.seputar-indonesia.com), *Sinar Harapan* (www.shnews.co), *Suara Merdeka* (www.suaramerdeka.com), *Suara Pembaruan* (www.suarapembaruan.com).

[3] *picu* is the base form of *memicu* (the latter is marked with agentive voice prefix *me-*). In this study, these two kinds of forms for verbs, i.e. base and prefixed ones, are treated separately.