Comparing Conceptual Metaphor Theory-Related Features
Using Classification Algorithm in Searching for
Figurative Expressions within Japanese Texts

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Abstract
In this work we propose an approach towards identifying expressions used figuratively in Japanese literary texts by means of the classification algorithm. Our considerations are inspired mostly by the epoch-making Conceptual Metaphor Theory which once presented by Lakoff & Johnson (1980) has instantly become a central problem to address not only from the perspective of cognitive linguistics but also other domains of scholarship. In NLP-related research, approaches of this sort - although already present - seem to be rarely applied to models dedicated to Japanese language. In our preliminary approach to built a trustworthy model able to create a large corpus of figurative expressions, we compare efficiency of several features selected as possibly relevant in the task of detecting non-literal language use. Our algorithm does not require complex system of rules which was the case in some of the computational models presented by other authors so far.

1. Introduction
Since the last decades of 20th century figurative use of language has proven to be much more important for human communication than it was thought to be so far. Eventually, it has become a pivotal issue for cognitive scientists, linguists, psychologists, psychotherapists and philosophers. In no time addressing the problem from computational perspective proved to be an inevitable step towards improving many NLP-related solutions (i.e. machine translation or sentiment analysis).

For anyone even remotely acquainted with metaphor-related research it should be agreeable that defining figurativeness is no easy task. Terms metaphorical and figurative often seem to be used interchangeably and this way shall we treat them henceforth. What is slightly less problematic but still not absolutely free from controversy is to differentiate between what is figurative and what is literal. Oxford Advanced Learner’s Dictionary (2010) describes figurative as used in a way that is different from the usual meaning, in order to create particular mental picture. The dictionary provides users with the example of: He exploded with rage along with the explanatory note: the example shows a figurative use of the verb 'explode'. The supposition that metaphorical is indeed often equated with figurative can be supported by the definition found in Oxford Dictionary of English (2005), which views figurative as departing from a literal use of words; metaphorical; this is also the definition we adopt in current research.

In conformity with the ODE’s definition, as literal we treat taking words in their usual or most basic sense without metaphor or exaggeration. While highly concise and rather vague this definition points at something crucial, namely at that it is rather the words’ usage - not the words themselves - that should be interpreted as literal or figurative.

1 Although not always, cf. considerations of Dobrovolskij & Piirainen (2005)
While aware of the differences existing between them, we decide to treat as figurative both live (creative) and dead (conventional; frozen) metaphor. Since the mechanism accompanying figurative use of language sometimes happens to be rather metonymical than metaphorical, we do not exclude metonymical expressions from the scope of our considerations. For the purpose of this research also tropes such as synecdoches, similes, personifications and their opposites, oxymorons and alike are regarded as belonging to the same non-literal category. Also idioms and proverbs should be considered the objects of our investigation.

The ultimate task of our research is to create a computational model able to discern expressions used figuratively (which class, as shown above, is highly heterogeneous) from those used literally within Japanese texts. While many of NLP-researchers seem to focus mostly on enhancing performance of their models constantly modifying their already complex algorithms, for the time being we would like to pay more attention to the theoretical aspect of the problem viewing it from the cognitive linguistics perspective. This kind of approach will hopefully give us some new insights on the very nature of the figurative language and help to qualitatively improve achievements of our algorithms in the future.

In this paper Japanese words transcribed to alphabet are indicated with italics. Hepburn romanization is utilized.

2. Related Work

2.1. Natural Language Processing

Among NLP-related works dealing with supervised identification of linguistic metaphor one can point at this of Heintz et al. (2013). The authors use LDA Topic Modeling for the classification and does not resort to WordNet-like semantic databases. Their algorithm is designed with Conceptual Metaphor Theory (CMT henceforth) as its theoretical foundation. The authors assume that certain sentence's probability of including linguistic metaphor is positively correlated with presence of words related to both target and source concepts. They prepare large number of seed words semantically connected to such source concepts. Trying to apply the model to different languages, in most cases they use translations of the seed words they have originally come up with for American English. What do we find particularly appealing in their approach is that the authors do not fail to take into account cultural differences existing between users of different languages. For example, they enlist words belonging to the semantic field of American football as potential constituents of linguistic metaphors in American English. For it is however unlikely that American football would be used as a source domain underlying metaphorical expressions in Spanish, authors decide not to simply translate American football-related seed words but instead use different words associated with soccer which they assume to be more familiar to Spanish speakers. One of this model's shortcomings is relatively low F-1 score (59%) achieved and the fact that the authors search for linguistic metaphors within only one target domain, namely the one of governance.

Another related work worth mentioning is the one of Dunn (2014). The author reflects on the concept of abstractness, proposes its multi-dimensional definition and takes these dimensions (41 altogether) as the features of his model used for metaphor identification. He proves category of abstractness to be largely complex but very useful when it comes to detecting metaphor mappings. As for the model's shortcomings, highly complicated structure and relying on external databases and numerous ontologies can be addressed.

Among supervised approaches to metaphor classification, the research of Klebanov et al. (2016) should also be listed. The authors limit the object of their investigation to linguistic metaphors including verbs. Their model relies on several existing knowledge bases and corpora (VerbNet and WordNet; British National Corpus and VU Amsterdam Metaphor Corpus). They utilize different classifiers (Logistic Regression, Random Forest, Linear Support Vector Classifier) and compare their performance using different features on data belonging to different genres (news, academic writing, fiction, conversation). Results they present are relatively good when testing on data belonging to academic writing (71-76% F1-score depending on features used) but they get noticeably worse for other genres (47-51% F1 for fiction, 43-45% F1 for conversation).

2.2. Cognitive Linguistics

CMT has influenced several cognitive linguists dealing with the analysis of Japanese texts. Masako K. Hiraga (2008) describes conceptual metaphor underlying such Japanese words as bushidô, sadô,
research that Japanese is a multi-systemic language, which lexicon contains three (excluding hybrid words) types of vocabularies: 1) *wago* (indigenous, native Japanese words, usually written with Hiragana or Hiragana and Kanji), 2) *kango* (Sino-Japanese words originating in Chinese, usually written with Kanji) and 3) *gairaigo* (vocabulary originating in foreign languages other than Chinese, mostly written with Katakana) (cf. Kageyama & Kishimoto 2016).

Above presented words including logographic character *dō* belong to the Sino-Japanese lexical subsystem *kango*. In these examples morpheme *dō* is being suffixed to another morpheme (or multiple subsystem characters) (cf. Kageyama & Kishimoto 2016). In these examples morpheme *dō* what suggests that they are semantically interrelated.

Let us note briefly that Japanese is a multi-systemic language, which lexicon contains three (excluding hybrid words) types of vocabularies: 1) *wago* (indigenous, native Japanese words, usually written with Hiragana or Hiragana and Kanji), 2) *kango* (Sino-Japanese words originating in Chinese, usually written with Kanji) and 3) *gairaigo* (vocabulary originating in foreign languages other than Chinese, mostly written with Katakana) (cf. Kageyama & Kishimoto 2016).

Roughly speaking, conceptual metaphor can be described as a mechanism employing cross-domain mappings between distinct concepts. In case of the compound words listed above we are dealing with theoretically unrelated concepts of respectively: traditional ceremonial activities & traveling (*sadō, kadō*, *shodō*), martial arts & traveling (*kyūdō, kendō*); philosophical systems & traveling (*bushidō*). According to CMT, as the result of connecting (mapping) elements of such conceptual networks together, language users think of one concept in terms normally belonging to the another.

Although it might be tempting to label languages utilizing pictographic and ideographic writing systems as *more metaphorical* than the ones using only phonetic scripts, such a bold claim would require complex investigation and vast amount of evidence. It is nonetheless rather safe to say that languages like Japanese or Chinese provide their users with opportunity to almost immediately notice presence of conceptual metaphors underlying their linguistic realizations.

Even though we are aware of existing criticism aimed the premises of CMT (cf. Pinker’s standpoint in Pinker & Lakoff 2007), we still think it can serve as a tool helpful in identifying figurative use of language.

For it is not rare in case of cognitive linguistics-related theories to get opposed with the objections of lacking measurable evidence, we hope that our future findings will contribute in filling this gap.

3. Annotation and Datasets

3.1. Datasets

Our training data can be largely divided into two parts: one constructed from sentences comprising figurative expressions and the other including sentences very likely to be used in literal sense.

First group was obtained from the abridged digitalized dictionary of figurative expressions (Onai 2005) available for members of our laboratory thanks to the generosity and kindness of its author. The second was collected from Japanese Wikipedia dump4, local assembly minutes5 and articles from

\[kadō, shodō, kyūdō, kendō\] etc. As can be easily noticed, each of the compound words listed above includes morpheme *dō* ‘way, road’, what suggests that they are semantically interrelated.


3 Written with *Kanji* as 道.

4 https://dumps.wikimedia.org/jawiki/latest

5 http://local-politics.jp

The test set includes 82 sentences retrieved partly from Japanese novels' texts available at Aozora Bunko digital library. 50 sentences from Aozora Bunko have been annotated for the presence of expressions used figuratively. Only 9 of them have got labeled as being used in non-literal senses. In order to match up the number of figurative sentences with the one of literal ones (41:41) another 32 items have been taken from above-mentioned dictionary (Onai 2005) and added to the figurative subset.

All of the sentences (from both train- and test-sets) have been preprocessed using JUMAN parser; ASCII characters and punctuation marks have been removed if present.

3.2. Annotation

We have asked three Japanese native speakers to annotate 50 sentences taken randomly from Aozora Bunko digital library. They were instructed to not only decide whether a sentence have literal or non-literal sense but also - in case of the latter - to mark the expression used - according to their intuition - figuratively. The motivation behind setting the number of annotators to an odd number lies in the need for limiting anticipated disagreement between them. It is nonetheless obvious that majority does not necessarily have to be right.

Let us consider following example of expression mistakenly labeled as used literally: Jikaku ga tsuyoku natta, '(one) became more aware' (lit. 'Awareness became strong'). In our opinion it should have been classified otherwise: it is after all an example of personification. Our algorithm also tended to classify it as figurative, which consequently lowered the overall performance score, but we have decided not to interfere with evaluation made by the annotators.

Another example of quite vivid (as the presence of figurative use of language is highlighted by the simile marker yō-na) mislabels was that made by one of our annotators who classified mune o utarere ru yō-na kōkei 'a touching scene' (lit. 'sight as if a chest got hit by <sth>').

Also the sentence Haisha wa (...) yagate shioret e suwarimashita 'After a while stomatologist got downcast and took a sit' (lit. 'After a while stomatologist withered and sat) while apparently including figurative expression (for people do not wither as plants) was labeled as literal by one of the annotators.

It should also be noted that some of the longer sentences include multiple expressions used figuratively.

4. Features

It appears as hardly possible to coin the definition of figurative/metaphorical language use free of contradictions and sufficient enough to cover all of its possible manifestations. It therefore does not seem to be counterintuitive trying to search for non-literal usages, enumerating at least some of the features conceivable as non-trivial in their identification. Good deal of consideration led us to adopt 7 categories of words as features for the classification task.

First one comprises words naming body parts (BP). These are enlisted and can be viewed in Appendix 1. Notice that while most of them are written using both Hiragana and Kanji, we have decided that some of them - especially the short ones - should be written with Kanji only. The reason for doing so is that we wanted to avoid catching completely unrelated words including same mora as the name of body parts. As an example consider the result of including te as phonetic variant of hand'. Our program would erroneously treat all of the words written in Hiragana and including this syllable (i.e. soshite 'also', aete 'dare to', grammatical topic marker tte) as belonging to the category of body parts. We are aware of possible decrease of recall resulting from this decision, but at the same time we consider it as the best of possible solutions. Complete list of BPs consists of 57 elements; 20 examples are provided in the Appendix 1.

Similes (SI) also belong to the wide category of figurative language. We have therefore decided to treat words indicating their presence as another feature for our classifier. The list consists of 24 elements all of which can be seen in the Appendix 2.

Among the most popular conceptual metaphors discovered, UP IS GOOD and DOWN IS BAD can
be mentioned. We have utilized words indicating spatial positions and directions (PI) as another feature for our model. Complete 17 elements list of related words can be viewed in the Appendix 3.

As abstract notions are often metaphorically described using words for sensory impressions, we have decided to use names of colors (CO) as the next feature. We have used traditional Japanese colors names which can be found on Wikipedia. We have added some commonly used color names belonging to xenic subset of Japanese lexicon gairai-ego and therefore not available in the aforementioned list (\textit{pinku} 'pink', \textit{orenji iro} 'orange' and \textit{gurē} 'gray'). In this category we have gathered 242 elements; 20 examples are shown in the Appendix 4.

It is well known that metaphor is often employed as a means to describe feelings more elaborately. Conceptual metaphors such as LOVE IS A JOURNEY and ANGER IS A HOT FLUID IN A CONTAINER should suffice as the evidence. We have therefore construed a list of words likely to be emotionally motivated. 20 out of all 266 elements belonging to the category of words emotion-related (EM) are listed in the Appendix 5. This list is obviously not complete and different words might as be added as well.

Also the list of the most frequent words (130 elements) found in the dictionary of figurative expressions has been construed and used as another feature (FF). 20 of its elements may be viewed in Appendix 6.

As Uchiyama & Ishizaki (2003) point out, it is often the case that Japanese compound verbs of V1-V2 form (in other words compounds of two native Japanese verbs, i.e. \textit{yomi-naosu} 'reread', \textit{kaki-ageru} 'finish writing/drawing', etc.) are used metaphorically. We have therefore construed a list of verbs belonging to lexical subsystem wago and used them as our last feature (WV). The list consists of 1044 elements 20 of which can be seen in Appendix 7.

In the appendices below we present only fragmentary versions of the feature lists (along with English translations of their constituents). Complete versions of appendices presented in this work are available to download at: http://arakilab.media.eng.hokudai.ac.jp/MetaAppendix.zip.

5. Classification Experiment

In the current experiment we have tried to predict whether the input sentence contains at least one figuratively used expression by the means of the classification algorithm. In order to get the test data well-balanced, all of the input sentences have been taken solely from literary texts (either directly from some novel’s text or from the quotations collected by the dictionary’s compiler). All of the test sentences have been labeled as used either figuratively (1) or literally (0) by the odd number of native annotators. In case of disagreement, the answer chosen by the majority has been treated as correct. Random Forest Classifier (100 trees, Gini impurity as a split measure, no limits for tree’s depth) via scikit-learn library for Python has been utilized.

Before conducting the experiment, each of 51,894 sentences has been transformed into an array comprising the sentence itself combined with 8 elements long feature vector (1 label for each of 7 feature groups + 1 figurativeness label). The system first checks whether any member (seed word) of the feature group being in use is present in the given input sentence. If this is the case, value of 1 (if not - 0) is assigned to the respective place in the feature vector. Last element of each vector is set depending on whether the sentence belongs to the figurative (1) or the non-figurative (0) group.

As mentioned, 7 features (namely body parts BP, simile indicators SI, directions and spatial position indicators PI, colors CO, emotion-related EM, frequently figuratively used FF & wago verbs WV) have been adopted as possible clues for figurative usage. We wanted to check the effectiveness of every arrangeable feature setting; there is 126 of such combinations and thereby we have run the program this number of times.

Vector representations of all 82 test sentences have been passed to the classification algorithm. Depending on the number of features in use, each vector was comprised of up to 8 elements including the evaluation of (non-)figurativeness. The predictions of the classifier have been counted as correct only when they were the same as the ones made by the annotators.

The results show that - when compared in isolation - body parts (BP) give the highest precision: 0.70. The score reaches level of 0.72 when BP get combined with colors (CO). This however leads to a drastic decrease in recall (0.38). The highest recall achieved by a single feature (0.95) is that of position indicators (PI). Using PI alone leads system to vote for figurativeness in 71 out of 82 cases.
What is interesting is that classifier labels as literary every sentence in which it finds PI; it might be due to the fact that ideograms used as words denoting directions and spatial loci are highly frequent also in compound words unrelated to these notions (i.e. ideogram த used prototypically in senses 'middle', 'center', 'medium' appears also in compound words like Chūgoku 'China', chūko 'used', senaka 'back of the body' which - even if their structure was originally metaphorically motivated - nowadays are not considered to be used in figurative senses).

Although they are not particularly high, the best balanced results seem to be achieved by the combination of emotions (EM), body parts (BP), wago verbs (WV) and position indicators (PI).

Results of selected trials can be viewed in Table 1.

<table>
<thead>
<tr>
<th></th>
<th>BP</th>
<th>PI</th>
<th>EM + BP + CO + PI</th>
<th>EM + BP + WV + PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>0.63</td>
<td>0.61</td>
<td><strong>0.70</strong></td>
<td>0.63</td>
</tr>
<tr>
<td>Precision</td>
<td>0.70</td>
<td>0.57</td>
<td><strong>0.72</strong></td>
<td>0.63</td>
</tr>
<tr>
<td>Recall</td>
<td>0.46</td>
<td><strong>0.95</strong></td>
<td>0.63</td>
<td>0.63</td>
</tr>
<tr>
<td>F-1 Score</td>
<td>0.56</td>
<td><strong>0.71</strong></td>
<td>0.68</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Table 1: Results for Selected Features

6. Discussion and Future Work

In the task of discerning figurative from non-figurative use of language some of the features we proposed are seemingly more helpful than the others. We are therefore planning to adjust their weights, hopefully leading the algorithm to work more efficiently.

Redefinition of some of the features appears to be needed; in their current shape they may cause overfitting (cf. PI and WV). To differentiate between more and less metaphorically prototypical (or statistically more and less frequently employed when speaking figuratively) wago verbs might also be significant. It may be reasonable to include members of semantic field Animals peculiarly important in Japanese culture as another feature. Onomatopoeias - category seemingly ubiquitous in Japanese - are also likely to serve as a good clue for figurativeness. Automatically confirming presence of hyponymy-hyperonymy relation between the objects of comparison is possible (i.e. using WordNet) and seem to be worth trying as well.

While not having yet tested many of the methods possibly helpful in computational detection of figurative language use, we are becoming increasingly aware of the difficulties impeding improvement of models dealing with the task. As it has been already emphasized in the previous chapters, it may be argued that there is no definition of figurativeness that would suffice to cover all of its possible linguistic manifestations and - to put it figuratively - it is very difficult to search for something without even knowing how does it really look.

Having that said we are nevertheless convinced that improving language-specific computational models of this kind can be considered as an effort of high value. Discussing the interconnection between culture and language Dobrovolskij & Piirainen argue that Japanese is particularly well suited for researching the role of culture in figurative language. Pointing at semantic similarities observed in the European languages (even in genetically highly idiosyncratic Finnish) they add that Japanese, once completely isolated from Western cultural influences, serves as a contrast to the increasingly unified Euro-American languages. Japanese figurative language reveals its own original cultural components, rooted in the very different cultural traditions of Japan (Dobrovolskij & Piirainen 2005, p.10).

While recognizing high level of the task’s complexity, we hope that further trials of this kind will eventually lead us to create highly efficient computational model able to identify different kinds of linguistic expressions used figuratively in Japanese.

7. Acknowledgements

This work was supported by JSPS KAKENHI Grant Number 17K00295.

References


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### Appendix 1 (fragment): Body Parts (BP)

<table>
<thead>
<tr>
<th>Japanese</th>
<th>English</th>
</tr>
</thead>
</table>
| 手 'hand, arm, paw', 足・脚・あし 'leg, foot', 指・ゆび 'finger, toe', 頭・あたま 'head', 体・からだ 'body', 身 'body', 全身・ぜんしん 'whole body', 頭・かお 'face', 髪・かみ 'hair', 毛 'hair', 眉・まゆ 'eyebrow, brow', まゆげ 'eyebrow', 目・眼 'eye', 耳・みみ 'ear', 鼻・はな 'nose', 口・くち 'mouth, maw', 脣・くちびる 'lips', 齒 'tooth', 舌・した 'tongue', 首・くび 'neck' (…)

### Appendix 2: Simile Indicators (SI)

<table>
<thead>
<tr>
<th>Japanese</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>よう, みたい, っぽい, ごとく・如く, ごとし・如し, ごとき・如き, 位・くらい・ぐらい, まるで, さぞ・懐, いかにも・如何にも, さま, あたかも・恰も・宛も, ほど, 宛ら・さなから</td>
<td></td>
</tr>
</tbody>
</table>

### Appendix 3: Directions and Spatial Position Indicators (PI)

<table>
<thead>
<tr>
<th>Japanese</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>中・なか 'interior, inside', 上・うえ 'upper side, top, upper part, surface', 下・もと 'bottom, bottom part, under', 間・あいだ 'between, inbetween', 内・うち 'inside', 外・そと 'outside', 前・まえ</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4 (fragment): Colors (CO)
色 'color', 青, 深, あお 'blue, green', 青竹・あおたけ 'bluish green, malachite green', 赤・あか 'red, crimson, scarlet', 茜色, あかね 'madder', 青緑色・あいいろ・ひいろ 'scarlet, cardinal, crimson', 浅葱色・あさきいろ 'pale greenish blue', 小豆色・あずきいろ 'reddish brown, russet', 闇麝色・あまい 'ecru, beige', 鹹色・うぐいすいろ 'brownish green, olive green', 鶯茶・うぐいすう 'greenish brown', 鬱金色・うこんいろ 'bright yellow', 江戸紫・えどむらさき 'royal purple, bluish purple', 菊黄色・えびいいろ 'reddish brown, maroon', 膨脂色・えんじいろ 'dark red, crimson', カーキ色 'khaki', 貝紫色・かいむらさきいろ 'Tyrian purple, royal purple', 柿色・かいいろ 'persimmon color, dark orange', 韓紅・唐紅・からくわれない 'cinnamon', 黄・きいろ 'yellow' (…)

Appendix 5 (fragment): Emotion-Related (EM)
安心・あんしん 'peace of mind, relief, sense of security, sense of safety', 不安・ふあん 'uneasiness, uncertainty, anxiety', 感謝・かんしゃ 'gratitude, gratefulness, appreciation', 驚愕・きょうがく 'astonishment, amazement, shock, fright', 興奮・こうふん 'excitement, arousal', 驚く・おどろく 'be surprised, be astonished, be amazed', 好奇心・こきしみん 'curiosity, inquisitiveness', 冷静・れいせい 'calm, cool, self-possessed', 焦る・あせる 'be hasty, act hastily, make (undue) haste', 不思議・ふしぎ 'wonderful, wondrous, amazing, marvelous, strange', リラックス 'relax', 緊張・きんちょう 'tension, be tensed, nervous', 喜ぶ・悦ぶ・慶ぶ・欣ぶ・よろこぶ 'be glad, be happy, be pleased', 嫌しい・うれしい 'glad, joyful, delightful, happy', 幸せ・しあわせ 'happiness, happy, lucky, fortunate', 悲しい・かわい 'sad, unhappy, sorrowful, depressed, depressing, tragic', 寂しい・淋しい・さみしい・さびしい 'lonely, lonesome, isolated', 怒り・いかり 'anger, rage, fury, wrath', 怒る・怒る 'be angry, be furious, be mad', 感動・かんどう 'deep emotion, strong impression, sensation' (…)

Appendix 6 (fragment): Frequently Figuratively Used (FF)
声・こえ 'voice', 水・みず 'water', 音・おと 'sound, noise', 光・ひかり 'light, beam, ray', 空・そら 'sky, air', 風・かぜ 'wind, breeze', 花・はな 'flower, blossom', 水・なみ 'wave', 火・炎・flame, blaze', 海・うみ 'sea', 底 'bottom, bed (of a river)', 女・おんな 'woman, female, lady', 言葉・ことば 'word, expression, language', 雨・あめ 'rain', 雲・くも 'cloud', 肌・はだ 'skin', 美しい・うつくしい 'beautiful, pretty, attractive, lovely, charming, picturesque, sweet', 葉・はっぱ 'leaf', 冷たい・つめた 'cold, cool, icy, coldhearded, indifferent', 雪・ゆき 'snow', 影・かげ 'shade, shadow' (…)

Appendix 7 (fragment): Wago Verbs (WV);
燃える・もえる 'burn, blaze, be in flames', 飲む・かじる 'bite, gnaw, nibble', あげる 'go up, rise, ascend', あく 'open, be opened', あらす 'treat, handle', あてがう 'apply, fit', あめてはまる 'apply, be applicable, be valid, fit', あとる 'put, place, apply', あなな 'despise, disdain, scorn, look down on', あびる 'bathe in (sth), pour (sth) on oneself', あふれる 'overflow', あふれる 'over flow, spill over', いきれる 'get angry', いざなう 'invite', いじる 'play with, touch, tamper with', いらっしゃる 'come, visit, be', うっちゃる 'throw away, discard, abandon', うろたえる 'be flustered, be confused, be upset', おえる 'finish, complete, bring to an end', おきる 'get up, get out of bed', おのおの 'shudder, tremble, shiver' (…)

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