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Metaphor and Collocation. The Case of REIÐI

1 Introduction

This paper investigates metaphorical expressions of ANGER in Icelandic (REIÐI),¹ based on conceptual metaphor theory (Lakoff & Johnson 1980, see section 2.1). In recent years, many studies have been carried out to describe how we understand emotions using conceptual metaphors. Special attention has been paid to the emotion of ANGER, for which a certain number of conceptual metaphors have been proposed (e.g. Kövecses 1990, 2000; Lakoff 1987). Recently, studies have increasingly focused on cross-linguistic similarities and differences (e.g. Kövecses 1995, 2005; Matsuki 1995, Soriano 2003), finding more or less similar conceptual metaphors in different languages.

However, such studies have focused primarily on languages linguistically distant from English, not on languages linguistically close to English. In previous studies, not much discussion has been devoted to Icelandic, (e.g. Þórhallur Eypórsson 2012, Penas Ibáñez & Erla Erlendsdóttir 2015). The reasoning behind this may be an assumption that linguistically related languages likely have similar conceptual metaphors. However, since Icelandic and English are two different languages, belonging, to some extent, to different cultures, various differences might be found at a detailed level.

¹ In this article, the Icelandic ANGER is written as REIÐI to differentiate it from the English ANGER. Conceptual metaphors are capitalized and referred to either as conceptual metaphors or metaphors. A linguistic instantiation of a conceptual metaphor is referred to as a metaphorical expression.

Furthermore, it can be pointed out that research on conceptual metaphors has traditionally been based on intuitive data. Using such introspective data, Kövecses mainly discusses conceptual metaphors from the perspective of their existence/non-existence and their centrality (or importance) to a particular concept. However, Stefanowitsch (2006) makes the criticism that, with the introspective approach, it is challenging to measure the importance of particular metaphors due to difficulties in quantifying the results. Because of this methodological problem, many cross-linguistic studies have focused almost exclusively on the existence/non-existence of particular metaphors. Therefore, the present paper uses corpus data mainly to discuss conceptual metaphors of REIÐI from the perspective of their centrality to this emotion.

To measure the centrality of metaphors, this study uses Mutual Information score (hereafter, MI score), a statistical measure for calculating collocation. Minamisawa (2018a) applied this method to the analysis of ANGER metaphors in English and described the similarities and differences of metaphors and metonymies between the near-synonyms *anger* and *rage*. This study aims to show, through the comparison between Icelandic and English, that the method of MI score is also applicable to cross-linguistic studies of metaphors.

The present article is organized as follows. The next chapter briefly looks at the main issues facing research on emotion metaphors, as well as how ANGER tends to be conceptualized, with reference to some cross-linguistic studies. Chapter 3 discusses the corpus-based approach to conceptual metaphor research and how a statistical method for calculating collocation can be applied to the analysis of metaphors. Chapter 4 presents the results of the research and provides some examples, aiming to briefly describe the differences between the Icelandic REIÐI and the English ANGER. The last chapter summarizes the main findings of this study.

2 Emotion metaphors

2.1 Anger metaphors

In English, people commonly use the expressions below when talking about ANGER:

- (1) a. He was *filled with anger*.
 b. He was *bursting with anger*.
 c. You make my *blood boil*.
 d. She got all *steamed up*. (Kövecses 1990:53–55)

As shown in (1), English has many expressions related to a hot fluid in a container to express different aspects of ANGER, and this phenomenon is well-explained by conceptual metaphors. According to Lakoff & Johnson (1980:3–5), we understand abstract concepts (like emotions) in terms of more concrete concepts; our conceptual system is fundamentally metaphorical in nature. From this point of view, a metaphorical expression is a linguistic manifestation of a conceptual metaphor, and the sentences above are all instantiations of ANGER IS A HOT FLUID IN A CONTAINER (hereafter, the FLUID metaphor). According to this metaphor, the body is regarded as a kind of container, and the emotion as a hot fluid. Moreover, more than one metaphor can be used to conceptualize a single concept. Below are examples of ANGER IS FIRE (2a, b) and ANGER IS A DANGEROUS ANIMAL (2c, d) (hereafter, the FIRE metaphor and the ANIMAL metaphor, respectively).

- (2) a. She was *doing a slow burn*.
 b. He was *breathing fire*. (Kövecses 1990:58)
 c. It's dangerous to *arouse* his anger.
 d. His anger *grew*. (Kövecses 1990:62)

The conceptual metaphors above can all be applied to ANGER, and each metaphor highlights different aspects of the emotion, such as control and danger to others.

As more than one metaphor is used for a single concept, the following two questions can be raised: 1) What metaphors are mainly used for a particular emotion? and 2) Which one is central to the emotion? As for the first question, Kövecses (2000:21) lists 12 main metaphors for ANGER, including the ones mentioned above. With regard to the second question, it is generally agreed that the FLUID metaphor is central to the emotion of ANGER, for which Kövecses provides two reasons: First, many different aspects of ANGER can be represented by regarding the body as a container. Second, many words and expressions are subsumed under the FLUID metaphor, which productively carries over knowledge from A HOT FLUID IN A CONTAINER TO ANGER.

- (3) a. His pent-up anger *welled up* inside him.
 b. I *suppressed* my anger.
 c. When I told him, he just *exploded*.
 d. I *gave vent* to my anger. (Kövecses 1990:54–58)

When a hot fluid starts to boil, it rises and creates pressure on the container, and when the pressure becomes too high, the container explodes. Before the explosion, it is sometimes possible to release the fluid from the container. Such knowledge about hot fluids is applied to ANGER, and the examples in (3) are based on that understanding. That is, (3a) shows that increasing anger is represented by the image of a rising fluid (WHEN THE INTENSITY OF ANGER INCREASES, THE FLUID RISES), and as the anger becomes more intense, the pressure on the container rises, as shown in (3b) (INTENSE ANGER PRODUCES PRESSURE ON THE CONTAINER). In (3c), the explosion of the container indicates that the anger has become too intense (WHEN ANGER BECOMES TOO INTENSE, THE PERSON EXPLODES). Moreover, (3d) implies that anger can be let out under control (ANGER CAN BE LET OUT UNDER CONTROL). In these ways, the FLUID metaphor can represent different aspects of the emotion of ANGER and is therefore regarded as its central metaphor.

2.2 Emotion metaphors in different languages

Recent studies have found that the FLUID metaphor can be observed in many different languages. For example, Kövecses (1995, 2005) illustrates that ANGER is conceptualized in terms of HEAT (OR A HOT FLUID) in many languages such as English, Hungarian, and Japanese. The following are instantiations of this metaphor in Japanese:²

- (4) a. Harawata ga niekurikaeru.
 intestine NOM boil
 'The intestines are boiling.'
 b. Ikari ga karada no naka de tagiru.
 anger NOM body of inside at seethe
 'Anger seethes inside the body.'

² The glosses use the following abbreviation: NOM = nominative.

- c. Ikari ga bakuhatsu suru.
 anger NOM explosion do
 'Anger explodes.'
 (Examples from Matsuki 1995:140–141)

The examples in (4) clearly show that Japanese also has the FLUID metaphor. The expressions in (4a, b) are typical examples of the FLUID metaphor, and (4c) is an instantiation of the specific case of the FLUID metaphor WHEN ANGER BECOMES TOO INTENSE, THE PERSON EXPLODES.

Although such similarities have always drawn researchers' attention, some differences have been found even between closely related languages. For example, Soriano (2003) performed a contrastive analysis of ANGER metaphors in English and Spanish. Soriano (2003:111–112) found, for instance, that only English has the specific case of the FLUID metaphor THE EFFECT OF ANGER ON THE PERSON IS STEAM PRODUCTION as in *to get all steamed up*. With regard to emotions other than ANGER, Stefanowitsch (2004:147) compared *happiness/joy* in English with *Glück/Freude* in German, stating, for example, that speakers of American English tend to understand the attainment of HAPPINESS in terms of a commercial transaction because in America, commercial transactions play an important role and people believe more strongly in the power of money.

As such, while similar metaphors are observed in many different languages, some differences clearly exist at a more detailed level. In Icelandic, Penas Ibáñez & Erla Erlendsdóttir (2015) recognize the FLUID metaphor (REIÐI ER HEITUR VÖKVI Í ÍLÁTI), and give examples like *springa úr reiði* 'explode with anger' and *það sýður á einhverjum af reiði* 'someone seethes with anger'. However, as they do not go into detail concerning this metaphor, there is still room for detailed discussion on possible differences between Icelandic and English in this respect.

3 Corpus-based approach to conceptual metaphor

3.1 Metaphorical pattern

Although recent research has successfully shown surprising consist-

ency in conceptual metaphors between different languages, criticisms have been raised concerning the introspective method used to obtain the data. For example, Deignan (2005:96) claims that “there is a discrepancy between the expressions which a researcher may produce from intuition when trying to think of typical lexicalizations and the expressions which are most frequently used in the corpus.” Furthermore, Stefanowitsch (2006) asserts the necessity of using corpus data by cautioning that the importance (or centrality) of metaphors cannot be measured with the introspective method. Presumably, this problem also applies to cross-linguistic studies. Partly due to the difficulty in quantifying the results, many contrastive analyses have focused on the existence/non-existence of particular metaphors and metaphorical expressions (Question 1), but not on their centrality to the emotion (Question 2).

In light of this, the present study analyzes REIÐI metaphors based on corpus data, and discusses not only the existence/non-existence of metaphors (Question 1), but also their centrality to the emotion (Question 2). To extract relevant expressions, the study adopts metaphorical pattern analysis (Stefanowitsch 2006; hereafter, MPA). According to Stefanowitsch (2006:66), 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.” In the examples below, the emotion words are underlined and the metaphorical collocates are italicized.

- (5) a. She is *boiling* with anger. (Kövecses 2000:21)
 b. *Simmer* down. (Kövecses 1990:53)

Following Stefanowitsch’s definition, (5a) is a metaphorical pattern because the sentence includes both the metaphorically used word *boiling* and the emotion word *anger*, whereas (5b) is not a metaphorical pattern because of the lack of an emotion word. At present, it is difficult to extract metaphorical expressions such as (5b), so only expressions like (5a) are analyzed with the MPA method. Stefanowitsch showed that this method can extract almost all of the metaphors listed in previous studies, as well as others.

3.2 MI score

Arguing against the corpus-based approach, Kövecses (2011:35–36) contends that a quantitative advantage does not necessarily lead to

a qualitative advantage, since frequently used metaphors are often highly general, whereas metaphors that contribute to more substantially to the structure of abstract concepts are specific, such as the FLUID metaphor. In Turkkila (2014), for example, the four most frequent ANGER metaphors were ANGER IS A POSSESSION (*have anger*), A PLACE (*in anger*), A MOVING OBJECT (*anger toward X*), and AN OBJECT (*anger against X*), which seem to be applicable not only to ANGER but also to other emotions and abstract concepts.³

To deal with this problem, the present study uses a statistical method for calculating collocation. In Sinclair (1991:170), collocation is defined as “the occurrence of two or more words within a short space of each other in a text,” and is often measured using statistical methods (Hunston 2002). Considering Sinclair’s definition, a metaphorical pattern is a specific type of collocation in which a source-domain word and a target-domain word co-occur. Thus, it is assumed that metaphorical patterns can also be measured using the statistical methods used for collocations.

Although different measures can be used, the present study uses the Mutual Information score, which is the observed frequency divided by the expected frequency, converted to a base-2 logarithm (Hunston 2002). Akano (2009) states that the MI score is appropriate for extracting semantically associated collocations, so the MI score should also effectively extract metaphorical patterns. In measuring the centrality of metaphors, this analysis uses two criteria. The first is that a metaphorical collocate with a higher score is more strongly associated with the emotion, that is, more central to the emotion (Criterion 1). This is derived from the fact that the MI score measures the strength of a collocation (Hunston 2002:71). The second criterion is that the metaphors that contain more significant collocates are regarded as more central to the emotion (Criterion 2). According to Hunston, collocations are considered significant when the MI score is three or higher. By categorizing the significant collocates into various metaphors, it is possible to create a list of metaphors that contain such significant collocates. In this way, we can define the metaphors that have the most significant collocates as being central to the emotion.

As a trial, *Table 1* gives the top 30 significant collocates of *anger/rage*

³ Although Turkkila’s categorization seems to vary slightly from that of many previous studies, it is nevertheless obvious that the most frequent metaphors are highly general.

(*anger_NN1* | *rage_NN1*) extracted from the British National Corpus⁴ (*BNCweb*, CQP-Edition, Version 4.3; hereafter, BNC). This trial does not consider collocates if they occur fewer than five times, and the span is set as four words on either side of the search word. The collocates are lemmatized and the symbols V, S, A, and P correspond to verb, noun, adjective, and preposition, respectively.

No.	Lemma	Freq.	MI	No.	Lemma	Freq.	MI
1	<i>vent_V</i>	34	9.89	16	<i>simmering_A</i>	6	7.52
2	<i>suppressed_A</i>	18	9.03	17	<i>well_V</i>	7	7.51
3	<i>sethe_V</i> ⁶	12	8.84	18	<i>searing_A</i>	5	7.29
4	<i>contort_V</i>	10	8.75	19	<i>bristle_V</i>	7	7.27
5	<i>incandescent_A</i>	9	8.74	20	<i>uncontrollable_A</i>	7	7.25
6	<i>righteous_A</i>	15	8.61	21	<i>resentment_S</i>	32	7.13
7	<i>seethe_V</i>	6	8.53	22	<i>abate_V</i>	6	7.04
8	<i>pent-up_A</i>	7	8.46	23	<i>murderous_A</i>	6	6.96
9	<i>bellow_S</i>	5	8.07	24	<i>outburst_S</i>	12	6.85
10	<i>howl_S</i>	12	8.01	25	<i>surge_S</i>	19	6.84
11	<i>suffuse_V</i>	6	7.96	26	<i>bubble_V</i>	8	6.79
12	<i>impotent_A</i>	11	7.88	27	<i>subside_V</i>	11	6.79
13	<i>livid_A</i>	6	7.85	28	<i>towering_A</i>	6	6.76
14	<i>speechless_A</i>	9	7.76	29	<i>quiver_V</i>	8	6.74
15	<i>frustration_S</i>	65	7.57	30	<i>hurt_S</i>	5	6.73

Table 1. Top 30 significant collocates of *anger/rage* (based on Minamisawa 2017).

Table 1 shows that the MI score successfully extracts many metaphorical collocates. Here, the verbs *vent* and *seethe*⁵ and the adjective *suppressed* top the list, and they are all classified under the FLUID metaphor. Furthermore, as most significant collocates are subsumed under this metaphor, we can conclude that the FLUID metaphor is the metaphor most strongly associated with ANGER (Minamisawa 2017).

3.3 Materials and methods

The present analysis uses data extracted from the Tagged Icelandic Corpus (Mörkuð íslensk málheild; hereafter, MÍM). The MÍM con-

⁴ The BNC is a balanced corpus of British English that contains about 100 million words.

⁵ The verbs *sethe* (No.3) and *seethe* (No.7) should be counted as a single collocate *seethe*.

tains 25,000,522 words, with texts taken from different sources such as newspapers, books, blogs, and spoken languages between 2000 and 2010. With regard to planning text collection, the MÍM is partly modeled on the BNC (Sigrún Helgadóttir et al. 2012), so it seems appropriate for use in comparing Icelandic and English.

When extracting metaphorical patterns, search words must be selected. According to *Ensk-íslenska orðabókin*, the Icelandic equivalents for *anger* are *reiði* and *bræði*, so these two words are selected as the search words. A 4:4 window span is adopted (Krishnamurthy 2003), but the analysis does not calculate over sentence boundaries. Finally, all the extracted collocates are lemmatized.

As mentioned above, this study uses the MI score to determine the centrality of *REIÐI* metaphors. In the analysis, only significant collocates (MI ≥ 3) are considered. However, the MI score becomes unstable when the number of co-occurrences is very small (Church & Hanks 1990), so this study ignores collocates occurring fewer than five times. All significant collocates are then categorized as either metaphorical or non-metaphorical, and all of the metaphorical collocates are classified into various metaphors. In classifying these metaphorical collocates, the present research mainly follows the classification in Kövecses (1990, 2000) and Stefanowitsch (2006), additionally referring to dictionaries such as *Íslensk orðabók* and *Íslensk nútímamálsorðabók* (hereafter, ÍN). For example, Kövecses categorizes the expression *boiling with anger* into the FLUID metaphor and *arouse his anger* into the ANIMAL metaphor. Accordingly, the Icelandic equivalent *sjóða* goes into the FLUID metaphor and *vekja* into the ANIMAL metaphor. In deciding what words are Icelandic equivalents, *Ensk-íslenska orðabókin* and *Íslensk-ensk orðabók* are most often referred to.

4 Results and discussion

4.1 Significant collocates

The MÍM contains 758 examples of *reiði/bræði* (690 for *reiði* and 68 for *bræði*). The procedure described above extracted 44 significant collocates.

No.	Lemma	Freq.	MI	No.	Lemma	Freq.	MI
1	reita_V	11	10.10	23	óánægja_S	5	6.09
2	biturð_S	5	9.47	24	útrás_S	7	5.82
3	sáringi_S	6	9.46	25	reiða_V	6	5.67
4	ólga_V	7	9.33	26	reiði_S	6	5.35
5	heift_S	11	8.87	27	fylla_V	16	5.21
6	blossi_S	6	8.67	28	beina_V	16	5.17
7	blossa_V	5	8.43	29	gleði_S	11	5.17
8	vanmáttur_S	6	8.37	30	sjóða_V	5	4.95
9	gremja_S	8	8.14	31	heilagur_A	6	4.91
10	krauma_V	6	7.93	32	vekja_V	32	4.74
11	roðna_V	5	7.93	33	garður_S	19	4.72
12	hatur_S	8	7.50	34	hella_V	5	4.64
13	réttlátur_A	11	7.49	35	brjóst_S	6	4.14
14	skála_V	7	7.07	36	forða_V	5	4.13
15	gjósa_V	6	6.80	37	tilfinning_S	10	4.07
16	örvænting_S	5	6.72	38	innri_A	5	3.53
17	sorg_S	21	6.53	39	konungur_S	10	3.46
18	undrun_S	6	6.50	40	renna_V	11	3.43
19	hræðsla_S	6	6.31	41	brjóta_V	8	3.41
20	sársauki_S	9	6.29	42	guð_S	15	3.33
21	vonbrigði_S	11	6.15	43	viðbragð_S	5	3.25
22	ótti_S	18	6.13	44	valda_V	11	3.23

Table 2. Significant collocates of *reiði/bræði*.

Table 2 gives the list of all the significant collocates of *REIÐI*. Naturally, many emotion words such as *sorg* ‘sorrow’, *hatur* ‘hatred’ and *gleði* ‘joy’ co-occur with *reiði/bræði*. Of 44 significant collocates, 13 are considered metaphorical. These are italicized and shaded in gray in the table.⁶

⁶ The noun *blossi* should be counted as the verb *blossa* ‘blaze’, and the verb *skála* should be tagged as the noun *skál* ‘bowl’, as can be seen in the following examples of the noun *blossi* (i) and the verb *skála* (ii):

(i) Sturla finnur hvernig *reiðin* *blossar* upp í honum.
 Sturla finds how anger.the flares up in him
 ‘Sturla finds how the anger flares up in him’ (BAEKUR-B0M)

(ii)[...]ég hellti úr *skálum* *reiði* minnar.

I poured out of bowls anger’s my
 ‘I vented my anger/poured out vials of my anger
 (lit. I poured out of bowls of my anger)’ (BAEKUR-B4E)

Therefore, this study counts *blossi* and *blossa* as a single significant collocate: the verb *blossa*. Concerning the verb *skála*, the present study does not count it as a

Among the significant metaphorical collocates, the verb *ólga* tops the list:

- (6) a. Reiðin ólgaði í brjósti Magnúsar.
 anger.the stirred in breast Magnús's
 'The anger stirred in Magnús's breast' (BAEKUR-B2X)
- b. Ég fann reiði ólga inni í mér.
 I found anger stir inside in me
 'I felt anger stirring inside of me' (BAEKUR-B0K)

The verb *ólga* is defined in ÍN as *vera ókyrr* 'be moving, unquiet' and does not seem to be categorized into any specific metaphor, unlike the verb *sjóða* 'boil, seethe' in the FLUID metaphor, or *blossa* 'blaze' in the FIRE metaphor. Nevertheless, *ólga* often co-occurs with phrases that imply the body as a container: *í brjósti Magnúsar* 'in Magnús's breast' (6a) and *inni í mér* 'inside of me' (6b). Furthermore, the verb can represent the active state of a fluid and is thus not inconsistent with the FLUID metaphor.

When all of the significant metaphorical collocates are categorized into various metaphors, they comprise *Table 3*.

Metaphor	Significant Collocates	N	
FLUID	<i>krauma_V, gjósa_V, útrás_S, fylla_V, sjóða_V, hella_V, innri_A, renna_V</i>	8	61.5%
FIRE	<i>blossa_V</i>	1	7.7%
ANIMAL	<i>vekja_V</i>	1	7.7%
Others	<i>ólga_V, brjóta_V, beina_V</i>	3	23.1%
	Total	13	

Table 3. Significant metaphorical collocates of *reiði/bræði*.

Table 3 clearly shows that most of the significant metaphorical collocates go into the FLUID metaphor, with 8 of 13 collocates related to this metaphor. The FIRE metaphor and the ANIMAL metaphor have only one significant collocate each. The verb *brjóta* 'break' co-occurs with *reiði* often in the form of *brjótast út* 'break out'. This phrase is sometimes used together with *gos* 'eruption' and *eldur* 'fire', so it might seem that it is related to either the FLUID metaphor or the FIRE metaphor. However, as the phrase *brjótast út* also co-occurs with other catastrophes such as *stríð* 'war' and *átök* 'conflict', the present analysis

significant collocate. However, it can be subsumed under the FLUID metaphor, and this is entirely compatible with the results.

placed the verb *brjóta* into the category of Others. Finally, following Stefanowitsch (2006:92), the verb *beina* ‘direct’ can be categorized into ANGER IS AN OBJECT DIRECTED AT SOMEONE. Stefanowitsch implies that this metaphor is also compatible with the image of a fierce animal attacking its prey. According to Kövecses (1990: 62), the main focus of the ANIMAL metaphor is the danger to others, and the verb *beina* seems to focus on this aspect. However, Stefanowitsch also admits that the verb is not necessarily associated with that image. In this way, the verb *beina* is highly general and the present study categorized it as well into Others.⁷

In brief, the metaphorical collocate that is most strongly associated with *reiði* is the verb *ólga*, which is not directly connected to any specific metaphor. However, as shown in *Table 3*, most of the significant collocates are subsumed under the FLUID metaphor, and it can therefore be concluded, according to the second criterion, that the central metaphor for *reiði* is the FLUID metaphor (*REIÐI ER HEITUR VÖKVI Í ÍLÁTI*).

4.2 Examples in the corpus

As discussed above, the MI score method leads to the conclusion that the central metaphor for *reiði* is the FLUID metaphor. Below are some further examples.

- (7) a. *Ég fylltist reiði.*
 I got filled anger
 ‘I got filled with anger’ (BAEKUR-B2T)
- b. *Ég fann öryggi og reiði fylla mig.*
 I found assurance and anger fill me
 ‘I felt assurance and anger fill me’ (BAEKUR-B0K)
- c. [...] *reiðin* sauð innra með henni.
 anger.the seethed inner with her
 ‘The anger seethed up inside of her’ (BAEKUR-B0A)

⁷ An anonymous reviewer helpfully pointed out that the verb *beina* could be categorized under the ANGER IS A WEAPON metaphor, which can be seen in the expression *beina spjótum sínum að einhverjum* ‘direct one’s criticism at someone (lit. direct one’s spears at someone)’. In fact, this possibility also indicates that the verb *beina* is general. Nevertheless, in both interpretations, the verb indicates that the anger (or criticism) is directed at someone, and it seems to focus on the aspect of the danger to others.

In (7a, b), the verb *fylla* 'fill' co-occurs with *reiði*. In these examples, the body is regarded as a container and the emotion as a fluid. In (7c), the adjective *innri* 'inner' collocates with *reiði*, and the verb *sjóða* 'boil, seethe' appears near these words. As the verb *sjóða* represents the boiling state, this expression is a typical instantiation of the FLUID metaphor. Here are some other examples:

- (8) a. Hún hallaði sér upp að kómmóðunni
 she leaned herself up towards chest of drawers.the
 og reiðin sauð í henni.
 and anger.the seethed in her
 'She leaned against the chest of drawers and the anger
 seethed in her' (BAEKUR-B1D)
- b. Maður sá hvernig reiðin kraumaði í honum [...]
 man saw how anger.the simmered in him
 'You could see how the anger simmered inside of him'
 (BAEKUR-B0O)
- c. Samt *kraumar* í mér reiði.
 yet simmer in me anger
 'Yet anger simmers inside of me' (VERSLO-JA9)
- d. Hann fann reiðina gjósa upp í sér [...]
 he found anger.the gush up in himself
 'He felt the anger gushing up in himself' (BAEKUR-B3J)

In (8a), the verb *sjóða* collocates with *reiði*, as in (7c). It is interesting to note that this verb is cognate to the English *seethe* (Ásgeir Blöndal Magnússon 1989), and Kövecses (1990:53) gives the expression *seething with rage* as a historically derived instance of the FLUID metaphor. However, in Icelandic, *sjóða* is still used for boiling. In (8b, c), *reiði* co-occurs with the verb *krauma* 'simmer', which also indicates the boiling state. Finally, the verb *gjósa* 'erupt, spout' appears in (8d), evoking the spout of a hot spring.

Furthermore, the Icelandic version of the FLUID metaphor highlights the aspect of letting out anger and its disappearance.

- (9) a. Pabbi gat nefnilega fengið útrás fyrir reiði
 dad could namely gotten outlet for anger
 sína með því að meiða mig enn meira.
 self with that to injure me even more

'My father could in fact vent his anger by injuring me even more'
(BAEKUR-B0W)

- b. Hann hélt áfram að *hella* úr skálum reiði
he hold forward to pour out of bowls anger's
sinnar yfir Randver.
self over Randver
'He continued to vent his anger (/pour out vials of his wrath) on Randver' (BAEKUR-B4F)
- c. Það fýkur í skipstjórnann en honum *rennur*
it blow away in ship.chief.the but him runs
svo fljótt reiðin að blóðið nær varla að
so quickly anger.the that blood.the reaches barely to
hita á honum andlitið.
heat on him face.the
'The captain of the ship got very angry but the anger disappeared so quickly that the blood barely managed to heat up his face' (BAEKUR-B4M)

The expressions in (9a, b) represent the aspect of letting out anger. The expression *fá útrás fyrir reiði* 'give vent to anger' appears in (9a). The word *útrás* 'outlet' is now mainly used in the context of energy or emotion. Nevertheless, the word consists of *út* 'out' and *rás* 'channel', and *rás* indicates a channel for water. The expression is therefore based on the FLUID metaphor. The expression *hella úr skálum reiði sinnar* 'vent one's anger, pour out vials of his wrath (lit. pour out of bowls of one's anger)' in (9b) is also related to the FLUID metaphor. In this expression, letting out one's anger is represented by the image of pouring a fluid from a container. In both of these expressions, the body is regarded as a container and anger as a fluid, and letting out anger is understood as allowing a fluid to flow from the body. On the other hand, (9c) uses the verb *renna* 'flow, run' and represents the disappearance of the emotion. This expression is based on the image of a fluid flowing out of the body. Although the image of (9c) is somewhat similar to that of (9a, b), they are still different in that the word *hella* 'pour' implies pouring a fluid onto something. Thus, the verb *ausa* 'ladle' can also be used in the same manner, as in (10), although it is not a significant collocate.⁸

⁸ For the expression *hella/ausa úr skálum reiði sinnar* (lit. 'pour/ladle out of bowls of

- (10) Búinn að *ausa* úr skálum reiði minnar yfir
 have done to ladle out of bowls anger's my over
 virðingarleysi við húsreglur [...]

disrespect with house.rules
 '(I've) vented my anger (/poured out vials of his wrath) over
 disrespect for house rules' (BLOGG-V14BC)

We have seen that the Icelandic version of the FLUID metaphor significantly highlights different aspects of *reiði*. Compared with the FLUID metaphor, the number of significant collocates of other metaphors is much lower.

- (11) a. Reiði mín *blossaði* upp.
 anger my flared up
 'My anger flared up' (BAEKUR-B0S)
- b. Vonbrigði og höfnun *vekja* reiði
 disappointment and rejection arouse anger
 og hatur hjá mörgum.
 and hate at many
 'Disappointment and rejection arouse anger and hate at
 many people' (BAEKUR-B0F)

In (11a), *reiði* co-occurs with the verb *blossa*. This verb is mostly used in the form of *reiði blossa upp* 'anger flare up'. In (11b), *reiði* and the verb *vekja* 'awaken, arouse' co-occur. These metaphorical expressions are categorized into the FIRE metaphor and the ANIMAL metaphor, respectively. Regarding the FIRE metaphor, *Stóra orðabókin um íslenska málnotkun* (hereafter, SO) gives such expressions as *reiðin brennur* 'anger burns' and *vera hvítglóandi af reiði* 'to be white-hot with anger'. We

one's anger'), an anonymous reviewer kindly suggested a conceptual metaphor ANGER IS A DISH TO BE SERVED, in which the emotion would be regarded as a bowl and linguistic or behavioral reactions would come out of the bowl. In fact, Kövecses (1990:53–55) also gives expressions which evoke a dish in the pot, such as *Let him stew* and *She flipped her lid*. Kövecses considers these as instantiations of the FLUID metaphor. Since the expression *hella/ausa úr skálum reiði sinnar* still evokes the image of pouring a fluid from a container and the content could still be the emotion itself, it seems that this is a specific type of the FLUID metaphor. Following Kövecses' categorization, the expression should be categorized under a specific case of the FLUID metaphor ANGER CAN BE LET OUT UNDER CONTROL.

also find expressions like *það logar upp* ‘it burns up’ and *vera bálreiður* ‘be furious (lit. bonfire-angry)’ in *Íslenskt orðanet*. In the MÍM, there are examples such as *brennandi reiði* ‘burning anger’ and *hvítglóandi af bræði* ‘white-hot with rage’, but there are not very many of these expressions. With regard to the ANIMAL metaphor, few examples can be found in the MÍM.

Finally, the verb *roðna* is also one of the significant collocates of REIÐI. The verb corresponds to the English *blush*. This is a physiological effect of ANGER and metonymically indicates the emotion.

- (12) Stefán *roðnaði*, bæði af reiði og skömm.
 Stefán blushed both of anger and shame
 ‘Stefán blushed, both with anger and shame’
 (BAEKUR-B3J)

According to Kövecses (1990), the expression in (12) is categorized into the metonymy REDNESS IN FACE AND NECK ARE (FOR ANGER).⁹ Kövecses claims that the FLUID metaphor is partly based on this metonymy. Considering that the FLUID metaphor is the central metaphor for REIÐI, it is natural that *roðna* is significantly associated with the emotion.¹⁰

4.3 The Icelandic REIÐI and the English ANGER

This study concludes, according to the MI score, that the central metaphor for REIÐI is the FLUID metaphor. While this result is in line with

⁹ In the MÍM, there are also instances of other physiological effects and behavioral responses, although they are not significantly associated with REIÐI. Here are examples of AGITATION (i,ii) and SWELLING (iii):

(i) Samt stóð hann þarna skjálfangandi af bræði.
 yet stood he there shaking of rage
 ‘Yet he stood there shaking with rage’ (BAEKUR-B0V)

(ii) Fingurnir titruðu af bræði.
 fingers.the shivered of rage
 ‘The fingers shivered with rage’ (BAEKUR-B2R)

(iii) Ég sá andlitið á Gunna *bólgn*a upp af reiði [...]
 I saw face.the on Gunni swell up of anger
 ‘I saw Gunni’s face swelling up with anger’ (BLOGG-V1BAD)

¹⁰ Indeed, (12) is not genuinely metonymical, as the emotion word appears in the sentence. However, Oster (2010) claims that such an expression can also be an instantiation of metonymy, to the extent that the physiological effect is strongly connected to the emotion.

most previous studies, it seems that there are also some differences at a more detailed level. This section briefly discusses two differences between the Icelandic REIÐI and the English ANGER.¹¹

First, it seems that the aspects the FLUID metaphor covers are not absolutely the same between these languages. In English, this metaphor highlights many different aspects of the emotion, whereas the Icelandic version tends to be more limited. This is shown in *Table 4*.

Aspect	REIÐI (<i>reiði/bræði</i>)	ANGER (<i>anger/rage</i>)
Increasing Anger	[0]	<i>well_V, rise_V</i> [2]
(Intense) Anger	<i>krauma_V, fylla_V, sjóða_V</i> [3]	<i>seethe_V, pent-up_A, simmering_A, bubble_V, boil_V, fill_V</i> [6]
Attempt at Control	[0]	<i>suppressed_A, suppress_V</i> [2]
Loss of Control	<i>gjósa_V</i> [1]	<i>outburst_V, explode_V, burst_S, explosion_S, burst_V</i> [5]
Act of Retribution	<i>útrás_S, hella_V</i> [2]	<i>vent_V, vent_S</i> [2]
Disappearance	<i>renna_V</i> [1]	<i>evaporate_V, drain_V</i> [2]
Others	<i>innri_A</i> [1]	<i>inside_P</i> [1]

Table 4. Significant collocates of the FLUID metaphor of REIÐI and ANGER.

Table 4 shows the significant collocates (MI ≥ 3) of the FLUID metaphor of REIÐI in Icelandic (*reiði/bræði*) and ANGER in English (*anger/rage*). The collocates are categorized according to different aspects of the emotion.¹² The FLUID metaphor of REIÐI specifically focuses on the aspects of Intense Anger, Loss of Control, Act of Retribution (Letting out Anger), and Disappearance, while the English version represents different aspects of the emotion. As for the aspect of Increasing Anger, it seems that the verb *stíga* corresponds to *rise* (Freq=27,

¹¹ As stated above, the comparison between Icelandic and English is based on data from the MÍM and the BNC. As the MÍM is much smaller in size than the BNC, the results may be different when using different corpora. Nevertheless, the MÍM partly refers to the BNC in collecting texts. In addition, the MI score is usable for comparing data from corpora of different sizes.

¹² Kövecses (1990) claims that the prototype of emotion has the following temporally and causally connected stages: 1) Cause, 2) Emotion exists, 3) Attempt at control, 4) Loss of control, 5) Action, and 0) Emotional calmness. In *Table 4*, the aspects largely correspond to these stages. However, the aspect of Cause is excluded because of the lack of significant collocates in both languages, and the aspect of Increasing Anger is added based on the specific case of the FLUID metaphor WHEN THE INTENSITY OF ANGER INCREASES, THE FLUID RISES.

MI=3.06), but *stíga* does not collocate with *reiði/bræði* in the MÍM.¹³ In relation to Loss of Control, the English ANGER includes different significant collocates, such as the verbs *explode* (Freq=21, MI=5.90) and *burst* (Freq=14, MI=4.79), whereas the Icelandic *reiði* has only one significant collocate *gjósa* ‘erupt, spout’. As Penas Ibáñez & Erla Erlendsdóttir (2015) showed, the Icelandic FLUID metaphor also has expressions like *springa úr reiði* ‘explode with anger’. However, the verb *springa* collocates with *reiði/bræði* only once in the corpus, and is thus not a significant collocate.

Furthermore, it seems that the Icelandic *reiði* is almost exclusively associated with the FLUID metaphor, while the English ANGER is still strongly associated with other metaphors. Minamisawa (2017) showed that four metaphors are strongly associated with ANGER: ANGER IS A HOT FLUID IN A CONTAINER, ANGER IS FIRE, ANGER IS A DANGEROUS ANIMAL, and ANGER IS A NATURAL FORCE. Significant collocates of these metaphors can also be seen in *Table 1*: *vent* and *bubble* for the FLUID metaphor, *incandescent* and *searing* for the FIRE metaphor, *howl* and *bristle* for the ANIMAL metaphor, and *surge* and *subside* for the metaphor ANGER IS A NATURAL FORCE. In Icelandic, however, *reiði* contains only one significant collocate each for the FIRE metaphor and the ANIMAL metaphor: the verbs *blossa* and *vekja*, respectively. As stated earlier, SO gives examples such as *reiðin brennur* ‘the anger burns’ and *vera hvítglóandi af reiði* ‘to be white-hot with anger’ for the FIRE metaphor, but they are not considered significant because of their low frequency in the corpus. In relation to the ANIMAL metaphor, fewer examples are found in the MÍM than in English. Although collocates such as the verbs *hemja* ‘control’ and *öskra* ‘scream’ might be related to this metaphor, they are not frequent in the MÍM. Indeed, this might be partly due to the size of the corpus. Nevertheless, the procedure successfully extracted many significant collocates of the FLUID metaphor. Therefore, it is plausible to state that *reiði* is almost exclusively associated with the FLUID metaphor.

In summary, although the Icelandic *reiði* and the English ANGER might be fairly similar from the perspective of the existence/non-ex-

¹³ Interestingly, in Norwegian, the cognate of this verb *stige* sometimes collocates with the Norwegian equivalents of *anger*: *sinne/raseri*. This can be seen in the phrases such as *stigende sinne* ‘rising anger’ and *kjenne raseriet stige opp i seg* ‘feel the rage rising up in oneself’. This indicates that, even between Icelandic and Norwegian, there might be some differences in how conceptual metaphors are instantiated (Minamisawa 2018b).

istence of a particular metaphor, we still found that the FLUID metaphor in these languages covers different aspects of the emotion, and that the Icelandic REIÐI is exclusively associated with the FLUID metaphor as compared with the English ANGER.

5 Conclusion

This article investigated the conceptual metaphors of REIÐI. It has been found that many languages have the metaphor ANGER IS A HOT FLUID IN A CONTAINER, the Icelandic version of which is REIÐI ER HEITUR VÖKVI Í ÍLÁTI. Although many cross-linguistic studies have been conducted on this issue, they have mostly discussed the existence/non-existence of particular metaphors rather than focusing much on their centrality.

Therefore, this study focused on determining the centrality of the metaphors by using the MI score, following two criteria: a metaphorical collocate with a higher score is more central to the emotion, and metaphors that contain more significant collocates are regarded as more central to the emotion.

The MI score method extracted 13 significant metaphorical collocates of REIÐI, with the verb *ólga* topping the list. All significant metaphorical collocates were then categorized into different metaphors. As a result, the FLUID metaphor contained as many as 8 significant collocates, while the FIRE metaphor and the ANIMAL metaphor had only one significant collocate each. These results indicate that the FLUID metaphor is central to REIÐI. Furthermore, we found that the Icelandic REIÐI and the English ANGER are somewhat different at a detailed level. First, the Icelandic version of the FLUID metaphor does not focus as much on the aspects of Increasing Anger, or Attempt at Control. Second, while the English ANGER is strongly associated with different metaphors, such as the FIRE metaphor and the ANIMAL metaphor, REIÐI is almost exclusively associated with the FLUID metaphor.

By using the MI score in this way, it is possible to describe similarities and differences at a detailed level even between closely related languages such as Icelandic and English.

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Lykilorð

hugræn málvísindi, hugtaksmyndhverfing, reiði, orðastæða, MI-gildi

Keywords

cognitive linguistics, conceptual metaphor, anger, collocation, MI score

Útdráttur

Í þessari grein er fjallað um hugtaksmyndhverfingar sem tengjast REIÐI í íslensku. Í kjölfar rannsókna Lakoff & Johnson (1980) hefur mikið verið rætt um hvernig við skiljum óhlutstæð fyrirbæri eins og tilfinningar. Í því samhengi hafa miklar umræður um REIÐI átt sér stað og almennt er viðurkennt að myndhverfingin REIÐI ER HEITUR VÖKVI í ÍLÁTI fyrirfinnist í mörgum ólíkum tungumálum. Lítið hefur verið fjallað um slíkar myndhverfingar í íslensku. Hér er því ætlunin að athuga hversu miðlæggar vissar myndhverfingar sem tengjast REIÐI eru. Notast er við MI-gildi (gagnkvæmar upplýsingar) fyrir tölfraðilegar mælingar og er niðurstaðan sú að miðlægasta hugtaksmyndhverfingin er SNÝT að REIÐI er REIÐI ER HEITUR VÖKVI í ÍLÁTI. Gögnin sýna þó að blæbrigðamunur sé á þessari hugtaksmyndhverfingu í íslensku og ensku. Auk þess eru aðrar hugtaksmyndhverfingar eins og REIÐI ER BRUNI eða REIÐI ER HÆTTULEGT DÝR ekki eins tengdar REIÐI eins og sambærilegar myndhverfingar sem tengjast hugtakinu ANGER í ensku.

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