

Conceptual Wandering and Novelty Seeking: Creative Metaphor Production in an L1 and L2

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This study examined one dimension of metaphoric competence, specifically creative metaphor production, and analyzed this ability in both a first and second language. Viewing metaphoric competence as a multifaceted construct that lies on a continuum from the highly conventional to the highly creative is widely recognized in the field of cognitive linguistics (see Goatly, 2011; Littlemore, 2010). However, there is scarce research that analyzes creative metaphor production in individuals using multiple languages. Creative metaphors, as opposed to conventional ones that rely extensively on lexical retrieval, require the speaker to combine concepts in unfamiliar and novel ways. That is to say, it relies on constructing and exploring conceptual combinations that allow new properties to emerge and this reflects on a small scale the creative process (Finke, Ward, & Smith, 1992; Miall, 1987). This article reports on an exploratory study that aimed to measure participants' creative metaphoric competence in both Japanese (L1) and English (L2). The results suggest that this ability is an individual difference that underlies one's overall linguistic competency for it surfaced in both languages and across multiple creative metaphor production tasks. I argue that this ability involves both conceptual wandering, which involves conceptual deviance or the straying from usual or accepted standard associations, and novelty seeking, which involves a motivational desire to seek out the unique and unfamiliar.

Keywords: *creativity; metaphor; second language; metaphoric competency*

1. Introduction

Metaphor is a powerful cognitive tool and a necessary part of language. Since the 1980s, work done in the field of cognitive linguistics has aimed to show that metaphor is far from an isolated or exceptional

form of decorative language, but an essential part of thought for “our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature” (Lakoff & Johnson, 1980, p. 3; see Littlemore & Taylor, 2014 for an updated review). Consequently, a considerable amount of research has systematically outlined the conceptual structure of metaphors commonly found in everyday language (some examples include Gibbs, 1994; Goatly, 2011; Kövecses, 2003). These conventional metaphors are lexicalized and entrenched in the language for they are highly familiar and frequent and may in fact lie on a contradictory pole to creativity for “when metaphors become routine or over-familiar they dull rather than sharpen experience, and they tend to inhibit rather than enable creativity” (Pope, 2005, p. 139). In contrast, metaphors can also be highly creative and these creative metaphors really show “on a small scale all the principal features of the thought processes that are most significant in creativity” (Miall, 1987, p. 82). This study aims to focus on this latter type of metaphor, or specifically the creative ones, and to examine creative metaphor production in both a first and second language. The goal is to investigate whether or not individuals who produce creative metaphors in their first language (L1) also have the inclination to do this in their second language (L2). If individuals creatively produce metaphors in both the L1 and L2, this suggests that this competency is an individual difference underlying one’s linguistic competencies. This cognitive process of producing creative metaphors is quite different than producing conventional metaphors since this latter competency heavily relies on memory retrieval of formulaic language. In contrast, the cognitive process of linking distantly related concepts together whereby novel ideas emerge is a key part of understanding creativity (Ward, 2001) and creative metaphors provide insight into this process.

In order to investigate this issue, in this article I first show that metaphor is not a unitary construct and in researching metaphor it is crucial to distinguish creative from conventional metaphors. This is important since different cognitive processes are involved when processing conventional and creative metaphors (Bowdle & Gentner, 2005) and this likely occurs at the neuroanatomical level (Benedek et al., 2014; Bohrn, Altmann, & Jacobs, 2012; Mirous & Beeman, 2012; Yang, 2014). Viewing metaphor

as lying along a continuum from the conventional to the creative allows the researcher to more systematically analyze the creative process through creative metaphor production tasks. Creative and conventional metaphors should be viewed as graded concepts “that range from completely new and unconventional [to those that are] well-worn, entrenched and completely conventional cases” (Kövecses, 2010, p. 664). Then in this article, I report on an exploratory study that examined creative metaphor production in Japanese (L1) and English (L2).

2. Distinguishing Creative from Conventional Metaphors

The human mind is a “connecting organ” and “it can connect any two things in an indefinitely large number of different ways” (Richards, 1936, p. 125). Likewise Gentner and Wolff (1997) have similarly stated “people readily link unlike ideas” (p. 331) and this points to the combinatorial ability humans have, which is key to intelligence and creating new systems of knowledge (Spelke, 2003). It is this connecting ability of distantly related concepts that is central to creative metaphors. Creative metaphors defamiliarize the reader and seem unfamiliar and new, yet one is still inclined to seek out meaning within them for understanding them is “like deciphering a code or unraveling a riddle” (Black, 1954-55, p. 280). Frozen metaphors, on the other hand, or highly conventional ones may seem “dead” or “inactive” since they can lexically be regarded as homonyms or polysemes (Goatly, 2011) and in fact the metaphorical meaning may even be more salient than the literal one.

One highly influential theory of metaphor is called the Career of Metaphor Theory (henceforth CMT). In the CMT, Bowdle and Gentner (1999, 2005) argue that metaphors are “pluralistic” and the processing of novel and conventional metaphors vary considerably. According to CMT, novel metaphors are understood through a comparison model whereby features between the two semantic domains are first aligned and then mapped from one to the other. As this aligned system becomes more strongly activated through use, this novel metaphor proceeds through a conventionalization process and establishes a common metaphorical category. In this categorization model, metaphors establish class-inclusion

relations between the two concepts whereby the target concept is included into an ad hoc category that the source or base concept is an exemplar for (see Glucksberg & Keysar, 1993; Glucksberg, 2003). In the below example, the metaphor is “Language is a weapon”.

- (1) Language is still the most important weapon in the class struggle in England (San Francisco Chronicle, 1991).

Here language is the target and weapon is the source (or base) and consequently language is included into the ad hoc category of “powerful objects used to fight or defend oneself in time of conflict”. While this categorization model works well for established and conventionalized metaphors, Gentner and colleagues (2001) argue “the proposal that metaphor is a species of categorization ... is fundamentally wrong for novel metaphors” (p. 233). Less familiar or otherwise novel metaphors have been shown to take more time to process than conventional ones (Blasko & Connine, 1993; Gregory & Mergler 1990). Gentner and Wolff (1997) explain this discrepancy based on the idea that the more conventional metaphors have already abstracted a metaphorical sense, yet for the novel metaphors this metaphorical sense needs to be activated through the comparison model of alignment and consequently takes more time to process. In this view, conventional metaphors are processed much like any other highly familiar or salient language (see Giora, 1997, 2003). That is to say, this process of comprehending and producing them relies heavily on linguistic background knowledge while for novel metaphors this process relies more on higher-order cognitive processes. In sum, “novel metaphors invite sense creation, but conventional metaphors invite sense retrieval” (Bowdle and Gentner, 2005, p. 199).

Therefore creative and conventional metaphors require two differing cognitive processes. Conventional metaphors require one to have both breadth and depth of vocabulary knowledge, as well as sociolinguistic and cultural knowledge related to that language. In contrast, interpreting and producing creative metaphors likely reflects a more general cognitive process that activates analogical reasoning (Paivio & Walsh, 1993; Gentner, Bowdle, Wolff, & Boronat, 2001, Kintsch, 2008), conceptual blending (Fauconnier & Turner, 2002; see Birdsell, 2014 for an overview), and a

combinatorial ability often associated with creativity in general (Ward, Smith, & Finke, 1999).

3. The Present Study

The ability to produce creative metaphors in an L2 is an emerging area of study. For instance, Pitzl (2011, 2012) examined creativity in an English as a lingua franca (ELF) corpus. In her study, metaphorical creativity was widely used by speakers from a variety of L1 backgrounds, but the main differences had more to do with fluency and that “some speakers are clearly more prone to the use of these expressions than others” (Pitzl, 2012, p. 47). This points out that some individuals have a greater disposition towards producing creative metaphors than others. The study presented in this article aims to investigate if speakers who are prone to produce creative metaphors in their first language are also prone to do this in their second language. In one of the few studies that looked at metaphoric competence in both a first and second language, Littlemore (2010) found this to be “a relatively stable individual difference variable”, as indicated in her findings, which suggests that the ability to produce and understand metaphors in the L1 is related to the ability do this in the L2. She also advises that when doing research in this area, one should not approach metaphoric competence as a uniform trait, but rather as something multifaceted. Therefore in this study, I focus on one facet of it, creative metaphor production. As Carter (2007) proposed, “further research needs to be dedicated to the development of creative competence in and through language” (p. 606), the research presented here aims to further contribute to our understanding of creative competence and how it appears in and through both a first and second language.

3.1 Research Question

As previously stated, this study was designed to focus on one narrow aspect of the multifaceted notion of metaphoric competence, specifically creative metaphor production by investigating the following research question:

- Is creative metaphor production an underlying individual difference that appears in both the L1 and L2?

In order to examine this question, I used two different types of open-ended metaphor prompts in both the L1 (Japanese) and L2 (English) to encourage the participants to produce creative metaphors. The formatting was identical between the two languages, but the items varied. In addition, I explicitly asked the participants to respond to these prompts as creatively as possible. Explicitly instructing participants to “be creative” has been shown in previous research to increase creative performance (Chen et al., 2005; Harrington, 1975). Moreover, I used the consensual assessment technique (CAT; Amabile, 1996) to assess the creativity in these metaphor production tasks that employed both native Japanese and English judges as the raters. The next section describes in more detail the participants, procedures, and materials used in this study.

3.2 Participants and Procedures

The participants (n=130, male=60) were Japanese university students in northern Japan with Japanese as their first language (L1) and English as a foreign language (L2). The participants came from a diverse set of faculties at the university and were primarily 1st and 2nd year students. They all had similar and significant background experience studying English as a foreign language (at least 3 years in junior high school, 3 years in high school, and 1 year in university). Student participants completed the research instruments at the language-learning center within the university. All student participants were presented with and completed a consent form that explained in detail the research goals, the tasks involved in this research, and an explicit statement clarifying that all data collected would remain anonymous. I also informed them that participating in this research was voluntary and they could withdraw at any time. As a consequence, not all participants completed every section and a total of 124 participants completed both the English and Japanese tasks (128 completed only the Japanese tasks).

3.3 Instruments

The instruments used to measure creative metaphoric competence were designed to be heuristic with the aim of minimizing one’s reliance on linguistic ability such as memory retrieval of a conventional expression in order to complete them. That is to say, these tasks did not have a

straightforward response and had been sufficiently left open-ended and uncertain to allow for a multitude of possible responses. Therefore the creativity of the varying responses could then be identified and scored. Creativity is operationalized as being “both novel and useful as defined within a social context” (Plucker, Beghetto, & Dow, 2004, p. 90). Useful in regards to language would pertain to being meaningful. In this study, two different tasks were developed to measure creative metaphor production. These two tasks had two versions, a Japanese and English version and labeled, the context independent task and the context dependent task, so in total there were four sets of variables collected.

3.3.1 Creative metaphor production: The context independent task

The context-independent task did not provide the participants any context in the form of a sentence, but simply provided them the “topic” concept for a metaphor and then they had to seek out various ways to complete it by providing the source. The first part was designed in a similar way to a divergent thinking task. That is to say, the participants first were asked to provide as many sources as possible to complete the metaphor, which reflects the process of ideation. Then they were asked to reflect and analyze their responses and select one they felt was most apt and creative and finally provide an interpretation of this metaphor. The goal of this task was to measure the participants’ combinatorial abilities. The task reflects the creative process on a small scale, from ideation to evaluation and then analysis or in the case of this metaphor task, interpretation (see Zeng, Proctor, & Salvendy, 2011 for an in depth explanation of the different parts of the creative process).

The below topics are the prompts used in this study:

- English: E1 – Memories are _____; E2 – Love is _____
- Japanese: J1 – Life is _____; J2 – Looking for a job is _____

3.3.2 Creative metaphor production: The context dependent task

In contrast, the context dependent task provided contextual background by way of a sentence. These sentences were similarly constructed to those found in Littlemore’s (2010) study, which used two sets of sentence starters

to test original metaphor production. The sentences in this study primed the participants to think of a topic through the use of contextual cues (a topic such as a “disappointed dream”) and then they had to produce a novel and appropriate way to complete the sentence, which typically entailed associating that topic with a source concept. Below is one example from the Japanese version of the *context dependent task*:

Prime: Disappointment is

His parents had many expectations that their son would be successful, so they got him into an expensive private university. But rather than studying hard, he began to party every night and in the end he had to drop out of school. His parents dream (_____).

The sentences in this task required greater linguistic knowledge (in the L2) to complete since the participants had to first comprehend the context of the sentence in order to complete the missing part of it. In total, there were 5 sentences in each language. To develop these sets of sentences, I worked and consulted with a Japanese university student research assistant who helped compile culturally relevant and familiar topics for university students (i.e., school, music, looking for a job, being in debt, disappointing one’s parents, falling in love, and an angry teacher) and in composing the Japanese version of this task (see Appendix A for the complete list of items in both languages).

4. Data Assessment

Assessing the creativity of a creative product like a creative metaphor often relies on using consensual assessment, which is a common form of assessment in the field of creativity studies (see Amabile, 1996; Silvia et al., 2008). This is in comparison to assessing the “correctness” of the response, as would be the case for assessing conventional metaphors. Therefore scores for the context independent task used three independent raters who evaluated the metaphors and interpretations of them for creativity using the following 3-point Likert scale:

- 1 – *Not creative* > literal, not appropriate, or highly conventional responses
- 2 – *Somewhat creative* > extended conventional responses
- 3 – *Creative* > surprising and novel responses

The raters were told to use their own opinions of creativity in order to rate these metaphor/interpretation items. Each rater saw the responses in a different order (randomly generated) in order to avoid any bias based on the positioning of the metaphor in the list. Three native English speakers independently assessed the creativity of the context independent tasks (English version). Their assessments showed adequate inter-rater reliability between them ($\alpha=0.76$ and $\alpha=0.74$ respectively for the two different tasks). Tables 1 (E1) and 2 (E2) show the raters mean scores, standard deviations, and frequency distributions for the English topics followed by a set of examples that the raters evaluated with a low score and another set they evaluated with a high score.

Table 1. E1: Context independent task – Topic: Memories

| Rater | Mean | SD |
|---------|------|------|
| Rater 1 | 2.05 | 0.73 |
| Rater 2 | 1.90 | 0.75 |
| Rater 3 | 1.94 | 0.79 |

n=124 $\alpha=0.76$

| Rater 1 Frequency % | | | Rater 2 Frequency % | | | Rater 3 Frequency % | | |
|---------------------|----|------|---------------------|----|------|---------------------|----|------|
| 1 | 28 | 22.6 | 1 | 39 | 31.5 | 1 | 40 | 32.3 |
| 2 | 62 | 50.0 | 2 | 58 | 46.8 | 2 | 51 | 41.1 |
| 3 | 34 | 27.4 | 3 | 27 | 21.8 | 3 | 33 | 26.6 |

The following are examples of those that were scored low by all 3 evaluators (English version):

* The first part is the metaphor, the sentence following the “>>” is the participant’s interpretation of the metaphor.

Memories are dream >> Memories fade soon. (Subject 7)

Memories are life. >> Memories are grand sum of life. (Subject 89)

The following are examples of those that were scored high by all 3 evaluators (English version):

Memories are bottles pouring water. >> Memories we can have is a limit. The older the memory is, the more likely it is forgot like bottle pouring water overflow. (Subject 21)

Memories are leaves. >> Some memories fall down and others are eaten by worms. (Subject 108)

Table 2. E2: Context independent task – Topic: Love

| Rater | Mean | SD |
|---------|------|------|
| Rater 1 | 1.90 | 0.78 |
| Rater 2 | 1.82 | 0.63 |
| Rater 3 | 2.15 | 0.73 |

n=124 $\alpha=0.74$

| Rater 1 Frequency % | | | Rater 2 Frequency % | | | Rater 3 Frequency % | | |
|---------------------|----|------|---------------------|----|------|---------------------|----|------|
| 1 | 44 | 35.5 | 1 | 36 | 29.0 | 1 | 21 | 16.9 |
| 2 | 48 | 38.7 | 2 | 74 | 59.7 | 2 | 64 | 51.6 |
| 3 | 32 | 25.8 | 3 | 14 | 11.3 | 3 | 39 | 31.5 |

The following are examples of those that were scored low by all 3 evaluators (English version):

Love is big. >> Everyone has big love. (Subject 56)

Love is truth. >> No one tell a lie to love, love is a truth. (Subject 130)

The following are examples of those that were scored high by all 3 evaluators (English version):

Love is an umbrella. >> If it is a sunny day (good day) we don't need it or just put it in our bag. However it is rainy day, umbrella stay with us together. (Subject 44)

Love is a hot stone. >> When we fall in love, at first the love is very ambitious, but gradually it wither. A hot stone is at first very hot, but gradually it became cold. (Subject 97)

Three native Japanese speakers likewise independently assessed the creativity of the context independent task (Japanese version). Their assessments also showed good inter-rater reliability between them ($\alpha =0.82$ and $\alpha =0.87$ respectively for the two different tasks). Tables 3 (J1) and 4 (J2) show the raters mean scores, standard deviations, and frequency distributions for the Japanese topics followed by a set of examples that the raters evaluated with a low score and another set they evaluated with a high score (see Birdsell, 2018 for the original responses in Japanese).

Table 3. J1: Context independent task – Topic: Life

| Rater | Mean | SD |
|---------|------|------|
| Rater 1 | 1.84 | 0.64 |
| Rater 2 | 1.51 | 0.70 |
| Rater 3 | 1.67 | 0.63 |

n=128 $\alpha=0.82$

| Rater 1 Frequency % | | | Rater 2 Frequency % | | | Rater 3 Frequency % | | |
|---------------------|----|------|---------------------|----|------|---------------------|----|------|
| 1 | 38 | 29.7 | 1 | 78 | 61.0 | 1 | 53 | 41.4 |
| 2 | 72 | 56.3 | 2 | 35 | 27.3 | 2 | 64 | 50.0 |
| 3 | 18 | 14.1 | 3 | 15 | 11.7 | 3 | 11 | 8.6 |

The following are examples of those that were scored low by all 3 evaluators (Japanese version):

Life is sadness. >> In life one notices the sad and harsh things more than happy things. Therefore in order to avoid these unpleasant things, people try to improve and seek a better direction. Yet in the end, I think that life is meaningful because of the sadness. (Subject 45)

Life is effort. >> I think that the most important thing in life is effort. In order to achieve one's goals, effort is essential. Humans are human beings because they keeping trying until they die. (Subject 58)

The following are examples of those that were scored high by all 3 evaluators (Japanese version):

Life is an electrocardiogram. >> An ECG moves up and down like the

repetitive up and down movement of success and failure in life. (Subject 22)
Life is stir-fried vegetables. >> Stir-fried vegetables basically are not decided for you, but you have to choose the ones to cook with and also the spices you use. Everyone also cuts up the vegetables differently. So if ten people made stir-fried vegetables, you are likely to get ten different kinds of stir-fried vegetables. This is the same as life. (Subject 111)

Table 4. J2: Context independent task – Topic: Job-hunting

| Rater | Mean | SD |
|---------|------|------|
| Rater 1 | 1.70 | 0.74 |
| Rater 2 | 1.34 | 0.61 |
| Rater 3 | 1.53 | 0.66 |

n=128 $\alpha=0.87$

| Rater 1 Frequency % | | | Rater 2 Frequency % | | | Rater 3 Frequency % | | |
|---------------------|----|------|---------------------|----|------|---------------------|----|------|
| 1 | 59 | 46.1 | 1 | 94 | 73.4 | 1 | 72 | 56.3 |
| 2 | 48 | 38.0 | 2 | 25 | 19.5 | 2 | 44 | 34.4 |
| 3 | 21 | 16.4 | 3 | 9 | 7.0 | 3 | 12 | 9.4 |

The following are examples of those that were scored low by all 3 evaluators (Japanese version):

Job-hunting is a meeting. >> It is a place to meet friends who you will work with in the future and meet your future bosses. At the same time, it is also a place to earnestly meet to carry out plans to raise profits and return some of these profits to make new products and services. (Subject 1)

Job-hunting is is difficult. >> You have to think about what kind of person you are and what you want to do in the future. Then go to many companies and do many interviews. When rejected from these jobs, you will become very depressed. Looking at all of this, job hunting is very hard. (Subject 12)

The following are examples of those that were scored high by all 3 evaluators (Japanese version):

Job-hunting is a tide. >> The one who can successfully ride the wave will be raised up. After a long time adrift that person will be lifted up. (Subject 23)]

*Job-hunting is natto*¹. >> Natto is said to be delicious when you eat it after mixing it 100 times. It is because you have to work hard to get used to job hunting after preparing firmly as you did before eating natto. (Subject 126)]

These scores from the three raters for the two context independent tasks were then aggregated into one cumulative score in each language, a Japanese score for creative metaphor production in the L1 (Mean=9.59; Low=6; High=18) and an English score for creative metaphor production in the L2 (Mean=11.78; Low=3²; High=18).

The second creative metaphor production task called the context dependent task had the participants read a sentence that primed them to complete it with a metaphor. In order to evaluate participant responses to this task, I used a scoring criterion based on the following scale in this study:

- 1 – *Not Creative* > literal or highly conventional responses
- 2 – *Somewhat Creative* > extended conventional responses
- 3 – *Creative* > novel, but difficult to find meaning in the responses
- 4 – *Very Creative* > novel, surprising, and meaningful responses

It was decided that this scale needed one additional score compared to the context independent task, due to the greater variation in the responses. For instance, in the context independent task, the participants had to complete a metaphor, but in this task, the participants were simply primed by the context to use a metaphor to complete the sentence, but could also have provided a more literal response. The differences between these 4-scores were determined based on a number of features such as conventionality, familiarity, and literalness on the lower side of the scale and novelty, originality, and surprise on the higher side of the scale. Also appropriateness was considered an important factor for a response to be very creative. That

1 *natto* is a common type of food in Japan, which is typically translated as sticky fermented soybeans.

2 The 3 score is possible because one participant only completed one of the topics and left the other blank.

is to say, it had to allow one to recover the familiar within the novelty of the response or more precisely it had to allow one to construe meaning within it. It should be noted here that when a participant attempted to complete a few sentences in this task (there were a total of 5 sentences), but left others blank – in such cases, these responses were given a “0” score. For participants who did not even attempt to complete this section were provided “data not available” for this section of the study. For the Japanese version, I first went through all the responses and translated them into English. Then for each version (English and Japanese), I gave the responses a score from 1 – 4 based on the above criteria. Then two native English speakers corroborated these scores for the English responses and two native Japanese speakers did the same for the Japanese responses. Items of disagreement between the raters were then discussed until a compromise was reached. Scores on the 5 complete the sentence items were then aggregated into one score in each language, a Japanese score for creative metaphor production and an English score for creative metaphor production for the context dependent task.

Table 5 provides the English items’ mean scores, standard deviations for each of the 5 sentences, the total average cumulative score for all 5 items and frequency distributions. Examples are provided for each category of scoring below this table. Table 6 then provides data for the Japanese version and likewise examples are provided for each scoring category.

Table 5. Context dependent task: English items mean scores, standard deviations and frequencies

| Items | Mean | SD |
|---------|------|------|
| Item E1 | 1.47 | 1.0 |
| Item E2 | 2.39 | 0.97 |
| Item E3 | 1.90 | 1.07 |
| Item E4 | 1.85 | 0.82 |
| Item E5 | 1.46 | 0.87 |

Cumulative average for all 5 items: 9.07

| Item E1 | Frequency | % | Item E2 | Frequency | % | Item E3 | Frequency | % |
|---------|-----------|------|---------|-----------|------|---------|-----------|------|
| 0 | 9 | 6.9 | 0 | 2 | 1.5 | 0 | 2 | 1.5 |
| 1 | 75 | 58.1 | 1 | 17 | 13.0 | 1 | 54 | 41.3 |
| 2 | 61 | 17.6 | 2 | 57 | 43.5 | 2 | 43 | 32.8 |
| 3 | 18 | 5.3 | 3 | 29 | 22.1 | 3 | 7 | 5.3 |
| 4 | 16 | 7.6 | 4 | 20 | 15.3 | 4 | 19 | 14.5 |

| Item E4 | Frequency | % | Item E5 | Frequency | % |
|---------|-----------|------|---------|-----------|------|
| 0 | - | - | 0 | 1 | .8 |
| 1 | 45 | 34.4 | 1 | 87 | 66.4 |
| 2 | 60 | 45.8 | 2 | 25 | 19.1 |
| 3 | 13 | 9.9 | 3 | 3 | 2.3 |
| 4 | 7 | 5.3 | 4 | 9 | 6.9 |

The following is an example of one that was given a “4” score (English version):

The school festival was suppose to be a fun occasion, but when the teacher saw the students painting on the walls he got really angry. He ... *is weather in the mountains.* (Item E4, subject 48)

The following is an example of one that was given a “3” score (English version):

After graduating from university, he has not been able to find a job. But still he bought a new car and a lot of new clothes. Now he has a lot of credit card debt and worries. He ... *is now standing on the edge of hell.* (Item E2, subject 123)

The following is an example of one that was given a “2” score (English version):

I met this really great girl or boy last night. We went out and had a great

time. When I got home I couldn't sleep. She or he really ... *is an angel*. (Item E5, subject 59)

The following is an example of one that was given a "1" score (English version):

In writing class, Mary has been told to look into her past and ... *notice* ... some of her memories for there is a lot of good drama there. (Item E1, subject 5)

Table 6. Context dependent task: Japanese items mean scores, standard deviations and frequencies

| Items | Mean | SD |
|---------|------|-----|
| Item J1 | 1.96 | .90 |
| Item J2 | 2.03 | .90 |
| Item J3 | 1.95 | 1.0 |
| Item J4 | 1.67 | .99 |
| Item J5 | 1.74 | .82 |

Cumulative average for all 5 items: 9.35

| Item E1 | Frequency % | Item E2 | Frequency % | Item E3 | Frequency % |
|---------|-------------|---------|-------------|---------|-------------|
| 1 | 40 | 30.8 | 1 | 36 | 27.7 |
| 2 | 67 | 51.5 | 2 | 66 | 50.8 |
| 3 | 7 | 5.4 | 3 | 12 | 9.2 |
| 4 | 14 | 10.8 | 4 | 14 | 10.8 |
| 4 | 16 | 7.6 | 4 | 20 | 15.3 |
| 4 | | | 4 | 19 | 14.5 |

| Item E4 | Frequency % | Item E5 | Frequency % |
|---------|-------------|---------|-------------|
| 0 | 1 | .8 | 0 |
| 1 | 74 | 56.9 | 1 |
| 2 | 32 | 24.6 | 2 |
| 3 | 8 | 6.2 | 3 |
| 4 | 13 | 10 | 4 |

The following is an example of one that was given given a "4" score (Japanese version):

His parents had many expectations that their son would be successful, so they got him into an expensive private university. But rather than studying hard, he began to party every night and in the end he had to drop out of school. His parents dream ... *scattered like a snowstorm of torn up paper*. (Item J3, subject 14)

The following is an example of one that was given a "3" score (Japanese version):

It was really exciting for I was competing against the top-level skaters in the world in the Olympics. So I will never forget this experience. This experience ... *is more valuable than the Pacific Ocean*. (Item J4, subject 103)

The following is an example of one that was given given a "2" score (Japanese version):

She has a beautiful voice. Whenever I hear her voice, I think of ... *the chirping of a bird in the morning*. (Item J1, subject 122)

The following is an example of one that was given a "1" score (Japanese version):

It was really exciting for I was competing against the top-level skaters in the world in the Olympics. So I will never forget this experience. This experience ... *is my treasure*. (Item J4, subject 63)

5. Results

5.1 Descriptive Analyses

In order to analyze these four sets of collected variables, I performed a correlation analysis of scores for each of the creative metaphor production tasks in the two languages. Table 7 shows the scores between the two tasks in the two different languages. Both the context independent and dependent metaphor tasks displayed significant positive correlations (0.23, $p < .01$; 0.32,

$p < .01$, respectively).

Table 7. Correlations and descriptive statistics for the creativity scores on the metaphor tasks in Japanese (L1) and English (L2)

| <i>Context Independent Metaphor Task</i> | Mean | N | Std. Deviation | Std. Error | r | Sig. |
|--|-------|-----|----------------|------------|------|------|
| L1 score – creative metaphor production | 9.59 | 128 | 2.776 | .245 | .231 | .000 |
| L2 score – creative metaphor production | 11.78 | 124 | 2.707 | .243 | | |
| <i>Context Dependent Metaphor Task</i> | Mean | N | Std. Deviation | Std. Error | r | Sig. |
| L1 score – creative metaphor production | 9.34 | 128 | 2.785 | .246 | .324 | .000 |
| L2 score – creative metaphor production | 9.07 | 124 | 2.794 | .251 | | |

When these two sets of data are arranged together into one correlational table (see Table 8), the creative metaphor scores between the two different tasks and two different languages all show significant positive correlations. For instance, the L1 score for creative metaphor production in the context independent metaphor task (CIMT) displayed a significant positive correlation with the L2 score for creative metaphor production in the CIMT (0.23; $p < .01$), L1 score in the context dependent metaphor task (CDMT) (0.28; $p < .01$), and L2 score in the CDMT (0.20; $p < .05$). In short, positive correlations were observed across all four variables.

Table 8. Intercorrelations for the scores on the context independent (CIMT) and context dependent metaphor tasks (CDMT) in Japanese and English

| | 1 | 2 | 3 | 4 |
|--------------|--------|--------|--------|---|
| 1. L1 (CIMT) | 1 | | | |
| 2. L2 (CIMT) | .231** | 1 | | |
| 3. L1 (CDMT) | .282** | .392** | 1 | |
| 4. L2 (CDMT) | .203* | .266** | .324** | 1 |

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed)

Despite these correlations being small to moderate in size, it is important to consider the context of the study. For instance, other studies (Beaty & Silvia, 2013; Silvia & Beaty, 2012) that have used creative metaphor

generation tasks have also found small to moderate correlations between the different metaphor tasks. In one study, Silvia and Beaty (2012) asked the participants to produce creative metaphors using prompts that got them to think about a “boring class” and a “gross food” and provided metaphoric stems to direct the participants to respond metaphorically. Correlations between these metaphor tasks varied considerably (in the 0.10 to 0.30 range) depending on the rater since they did not aggregate the scores and these were all completed in the participants’ L1. Consequently, this study further contributes to research into creative metaphor generation by providing additional insight into this competency. In particular, it used multiple languages and different types of metaphor tasks that constrained the participants to rely more heavily on divergent thinking (context independent task) and on interpreting contextual cues within a sentence. These metaphor tasks aimed to measure a narrow aspect of metaphoric competence, namely, creative metaphoric competence. In order to illustrate differences in creative metaphoric competence at the individual level, responses from participant 81 (see Table 9) are used to highlight creativity avoidance (i.e., having a low level of creative metaphoric competence). In each production task, this individual provided highly literal and straightforward responses both in Japanese and English (despite being instructed to respond as creatively as possible).

Table 9. Participant 81 responses to the context metaphor tasks in the L1 and L2

| Japanese | English |
|--|---|
| 1. A friend asked her to give a speech at his/her wedding reception, (<u>she expressed the content of the speech with her body</u>). | 1. In writing class, Mary has been told to look into her past and (<u>explain</u>) some of her memories for there is a lot of good drama there. |
| 2. His parents had many expectations that their son would be successful, so they got him into an expensive private university. But rather than studying hard, he began to party every night and in the end he had to drop out of school. His parents dream (<u>was different than the</u> | 2. After graduating from university, he has not been able to find a job. But still he bought a new car and a lot of new clothes. Now he has a lot of credit card debt and worries. He (<u>is fool</u>). |
| | 3. Yesterday in Odaiba, AKB48 came to sign autographs for their fans. |

| | |
|---|---|
| <p><u>son's dream</u>).</p> <p>3. It was really exciting for I was competing against the top-level skaters in the world in the Olympics. So I will never forget this experience. This experience (showed my competitive spirit).</p> <p>4. When I passed the university entrance exam, my parents (pinched my cheek).</p> | <p>There were so many people waiting outside and when they finally opened up the gate to let the fans approach the tables, (fans run to AKB48).</p> <p>4. I met this really great girl or boy last night. We went out and had a great time. When I got home I couldn't sleep. She or he really (is very cute/handsome).</p> |
|---|---|

* In the parenthesis above are the participant's responses to selected items from the context dependent metaphor tasks.

In contrast, participant 123 showed the opposite or a disposition towards producing novel and creative responses (i.e., having a high level of creative metaphoric competence). To accomplish this, this individual used imagery and extended conventional metaphors, as seen below in Table 10.

Table 10. Participant 123 responses to the context metaphor tasks in the L1 and L2

| Japanese | English |
|--|---|
| <p>She has a beautiful voice. Whenever I hear her voice, I imagine (walking along a clear lake deep in the forest with a heavy morning mist rising).</p> <p>His parents had many expectations that their son would be successful, so they got him into an expensive private university. But rather than studying hard, he began to party every night and in the end he had to drop out of school. His parents dream (was tossed into a trash bin like torn up pieces of tissue paper).</p> <p>It was really exciting for I was competing against the top-level skaters in the world in the Olympics. So I will never forget this experience. This experience (has lit a bonfire in my heart).</p> | <p>In writing class, Mary has been told to look into her past and (opened a book of her story) some of her memories for there is a lot of good drama there.</p> <p>After graduating from university, he has not been able to find a job. But still he bought a new car and a lot of new clothes. Now he has a lot of credit card debt and worries. He (is now standing on the edge of hell).</p> <p>Yesterday in Odaiba, AKB48 came to sign autographs for their fans. There were so many people waiting outside and when they finally opened up the gate to let the fans approach the tables, (fans flowed there in like a muddy stream).</p> <p>I met this really great girl or boy last night. We went out and had a great time. When I got home I couldn't sleep. She or he really (was a national treasure).</p> |

Such examples above show that some individuals (as in participant 123) have a tendency or a disposition towards novelty while others (as in participant 81) have an avoidance of novelty. This convergence of producing creative metaphors in both languages suggests that it is an individual difference. This difference is likely both a personality trait, which involves openness to experience (see Silvia & Beaty, 2012) and novelty seeking, as well as a cognitive trait, which involves the combinatorial ability of combining distantly related concepts together in new and meaningful ways.

6. Discussion

Producing creative metaphors involves extending a conventional metaphor in new and unexpected ways or by creating a completely new conceptual system by combining two concepts in a novel way (Lakoff & Johnson 1980; Lakoff & Turner, 1989). In other words, creative metaphors may arise from extending the boundaries of an already existing conventional metaphor or by creating an entirely new conceptual mapping between a topic and a new source (or vehicle) that has not yet been commonly established. This process of creatively producing a metaphor involves what is commonly referred to as “conceptual expansion”, which is the widening of the conceptual structure of acquired concepts (Ward, 1994).

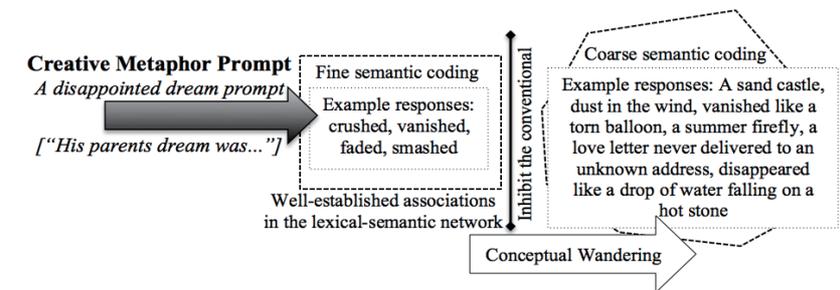
From the findings in this study, participants who produced creative metaphors in these tasks expanded or extended everyday concepts (e.g., associating memories with leaves – subject 14). When confronted with a concept like memories, more salient associations are likely activated first, which then results in the more frequent responses such as “treasures” (9 responses) or some kind of “book”, “picture” or “photo album” (29 responses). From a linguistic perspective, these are all very appropriate responses to this prompt in a conventional sense, but in regards to measuring creative metaphor production, they lack novelty and thus in this study were scored lower for creativity. Therefore producing a creative response involves what I refer to as, “conceptual wandering”, since the process of coming up with a novel or unique metaphor requires one to conceptually wander off the path-of-most-frequently used associations and go beyond the customary and seek out possible responses that appear more

deviant, less common, and distantly related. This means that one has to first inhibit the more conventional and frequent associations that a topic concept has, which are entrenched in the conceptual network, and then search out for variant associative possibilities.

This conceptual wandering likely occurs at the neuroanatomical level. More specifically, novel metaphors involve activating a bilateral network (see Bohrn et al., 2012), which means that the right hemisphere is recruited to perform more diffuse activation of the lexical-semantic networks in order to arrive at broader meanings and the recognition of more distant relations. This process is called coarse semantic coding, as compared to fine semantic coding, which concentrates more deeply within a singular semantic field of related word associations (Jung-Beeman, 2005). So conceptual wandering first involves the inhibiting of the entrenched or customary associations and then the active straying towards the unfamiliar in order to arrive at a novel link between concepts. Once a novel link is discovered, one has to look for mappings between the two concepts (i.e., the comparison model of metaphor processing in the CMT), if these are limited or nonexistent, one continues wandering, but if there are apt relations, then one completes the task with this response. This mental wandering for conceptual linkages increases the neural load on the semantic processing system (Cardillo et al., 2012) and individual differences are likely to be found in one's propensity and ability towards doing this. This conceptual wandering also violates semantic rules and therefore individual differences are also likely to surface due to the heightened risk involved in this process. Figure 1 illustrates this process of conceptual wandering. Again in this study, the participants were provided a creative metaphor prompt and in this example it had to do with a disappointed dream. Many participants responded with the well-established associations of disappointment as something that has been destroyed as in "crushed or smashed" or has disappeared as in "vanished or faded". On the other hand, some participants extended this conventional association and sought out prototypical images of things that easily disappear or vanish like "a sand castle" or a "torn balloon". Finally some continued this conceptual wandering and used richer imagery or more distantly related concepts like "a summer firefly" or "water falling on a hot stone". The point is to show that individual participants approached

these generative tasks differently and despite being explicitly told to "be creative", many participants took the "path-of-least-resistance" (Ward, 1994) strategy when faced with producing a creative metaphor while others were more prone to let themselves conceptually wander.

Figure 1: Illustration of conceptual wandering with the creative metaphor prompt a "disappointed dream"



A second individual difference that likely directs one's behavior to produce a creative metaphor is novelty seeking. Although this was not directly assessed in this study, this construct provides some insight into why some individuals are more prone to produce creative metaphors. Early studies suggested that creative individuals had a need for associative novelty to which they also indicate that this might not be entirely a disposition towards novelty, but a resistance towards banality (Houston & Medick, 1963) or an avoidance of boredom. Other early researchers have also proposed that this need is an essential motive for creativity, which involves finding the unusual or unexpected rewarding and results in a pleasant emotional response of surprise (Maddi, 1965). This need for novelty requires the individual to take risks since one must diverge from the familiar and expected. More recently, Ryan and Deci (2000) have expressed that intrinsic motivation is "the inherent tendency to seek out novelty" (p. 70) and González-Cultre and colleagues (2016) have also proposed that this need for novelty should be included into the basic innate psychological needs as outlined in self-determination theory (Deci & Ryan, 1991, 2000). Therefore novelty seeking is an individual difference variable

that motivates behavior towards creativity and appears in tasks that ask for the participants to respond creatively to some prompt. This tendency to seek out novelty can describe the motivational behavior of individuals who provided responses that were scored as being more creative by the raters. This intrinsic motivation to explore novelty is likely due to one's desire to avoid boredom and the positive affect one experiences from generating a novel response. In this study, since the participants themselves knew that the study was anonymous, it can be assumed that the participants who responded creatively were intrinsically driven by internal rewards or simply through the natural satisfaction of seeking out novelty.

6.1 Implications for Language Learning

Since few would deny the importance of developing the creative potential within learners and specifically language learners, creative metaphor generation tasks can be applied to the language-learning classroom in order to promote language play, reinforce formulaic language, and increase positive affect in the classroom. Oring (2003) referred to humorous sentences as “appropriate incongruity,” and I would say that this also applies to creative metaphors for they are appropriate, as in being meaningful, but they are also incongruous and deviate from expectations and conventionality. Humor and play in language learning has increasingly attracted the attention of researchers as an important part in facilitating L2 development (see Lantolf, 1997 and Cook, 2000 for a couple of early examples). Using and integrating creative metaphors into the language classroom is one example of providing learners opportunities to play with the language and expand their conceptual networks and interpretive abilities – for example, what features of leaves get mapped onto memories in the metaphor “memories are leaves”? Such opportunities may appear nonsensical on the surface or lacking practical applications in the real world, but since language is highly creative and metaphors are a key tool to creatively play with language (Carter, 2004), these types of activities are important for developing learners' L2 creative competencies.

In spite of the fact that creative metaphors lie along the opposite end of the continuum with conventional metaphors or multi-word formulaic expressions, Bell (2012) has indicated that “formulaic language provides a

point of reference against which other uses can be recognized as creative or playful” (p. 189). Therefore giving learners a chance to be creative with the L2 language through metaphor provides them opportunities to become more familiar with formulaic expressions and reinforce such language within the learner since much of creativity exploits such conventional forms of language by deviating from them.

Moreover, though this has been under researched in second language learning, creative language like creative metaphors has the possibility to enhance positive affect in the classroom. One possibility is that humor (and I would add creative metaphors) “may constitute an opposition and/or resistance to monotonous classroom practices” (Pomerantz & Bell, 2011 p. 148). This opposition towards monotony might be a more general resistance towards the highly familiar and predictable. For instance in one study (Wimmer, Christmann, & Ihmels, 2016), creative language like non-conventional metaphors were rated as being more aesthetically pleasing, even despite the added cognitive effort it required to process. This study was done in the participants' L1, consequently future research needs to explore if similar positive affect from non-conventional metaphors would also appear using the participants' L2.

In short, this study provides teachers insight into how to develop learners' creative potential in the language classroom and one key way to do this is to give the learners' opportunities to conceptually wander and combine concepts in unfamiliar, novel, and playful ways. This can take the form of both textual and visual metaphors (see Birdsell, 2017) and may reinforce conventional language and provide episodes of greater engagement in the classroom.

7. Conclusion

In summary, this study investigated creative metaphor production and did this through developing a set of tasks that examined the generative ability of individuals to produce creative metaphors. In order to look at this ability as an individual difference, these tasks were designed and conducted in a first and second language. It was hypothesized that if one had a high level of creative metaphoric competence in one language, this would also appear

in a second language. Data in this study supports this possibility. It was then argued that to creatively respond to these metaphor prompts reflects two type of individual differences, first the ability to conceptually wander and the second the desire to seek out novelty. Theoretically these two overlap for novelty seeking is a proclivity that individuals have that pushes them to seek out uniqueness and conceptual wandering is a combinatorial ability that one performs, or the bringing together of distantly related concepts.

This research aims to contribute to the growing interest in linguistic creativity (see Carter, 2004; Cook, 2000; Veale, Feyaerts, & Forceville, 2012 and others) and theoretically provides two individual difference indicators for the variation of creativity among the participants in this study. The original empirical contribution of this study consists of developing metaphor tasks that look specifically at creative metaphor production and importantly doing this across multiple languages. Moreover these tasks provide a window into the different stages of the creative process on a small scale such as analysis, ideation, evaluation, and implementation (Zeng et al., 2011).

While these results suggest that creative metaphor production and interpretation in an L1 and L2 share some cognitive ability, the results should also be approached with some caution for this research was exploratory in nature and extraneous variables could be contaminating the data. For instance, a few limitations arise from these metaphor tasks such as:

- The choice of topics to prime the participants to produce the metaphor in the respected languages could have influenced or affected the participants' responses.
- The time spent on the task was not recorded.
- There were a limited number of prompts in the context independent task (only 2 in each language) and the context dependent task (5 in each language).

Moreover in this study, there was a large range of scores for the different items used in these metaphor production tasks. Future studies could look more closely at the range of scores among the items and consider how certain topics have the tendency to generate more creative responses from

the participants. In addition future studies could conduct an in-depth analysis that compares the response strategies of the participants across the two languages. For instance, the following are three examples from participant 123:

- (1) She has a beautiful voice. Whenever I hear her voice, I imagine (**walking along a clear lake deep in the forest with a heavy morning mist rising**).
- (2) His parents had many expectations that their son would be successful, so they got him into an expensive private university. But rather than studying hard, he began to party every night and in the end he had to drop out of school. His parents dream (**was tossed into a trash bin like torn up pieces of tissue paper**).
- (3) It was really exciting for I was competing against the top-level skaters in the world in the Olympics. So I will never forget this experience. This experience (**has lit a bonfire in my heart**).

In these examples, there is an image metaphor (a “beautiful voice” represented as “walking along a clear lake”), an ontological metaphor (an abstract entity, a “dream” is represented as something concrete “torn up pieces of tissue paper”), and a conceptual metaphor (a passionate experience is represented with heat, i.e., “passion is heat”). It is beyond the scope of this article to examine these responses in such detail, but it appears that the participants used a wide range of strategies to creatively complete these tasks ranging from imagery to conceptual metaphors and to more novel instantiations of metaphor and future research could take a more in depth look at these strategies.

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References

- Amabile, T. M. (1996). *Creativity in Context*. Boulder, CO: Westview Press.
- Beaty, R. E., & Silvia, P. J. (2013). Metaphorically speaking: Cognitive abilities and the production of figurative language. *Memory & Cognition*, 41(2), 255–267.
- Bell, N. (2012). Formulaic language, creativity, and language play in a second language. *Annual Review of Applied Linguistics*, 32, 189–205.
- Benedek, M., Beaty, R., Jauk, E., Koschutnig, K., Fink, A., Silvia, P. J., ... & Neubauer, A. C. (2014). Creating metaphors: The neural basis of figurative language production. *NeuroImage*, 90, 99–106.
- Birdsell, B. J. (2014). Fauconnier's theory of mental spaces and conceptual blending. In Littlemore, J.; Taylor, J. (Eds.) *The Bloomsbury Companion to Cognitive Linguistics* (pp. 72–90). London/New York: Bloomsbury Publishing.
- Birdsell, B. J. (2017). The Role of Images in ELT Textbooks: A Case for Visual Metaphors. *Journal of Liberal Arts Development and Practices*, 1, 9–18.
- Birdsell, B. J. (2018). *Creative Metaphor Production in a First and Second Language and the Role of Creativity*. (Unpublished doctoral dissertation). University of Birmingham, UK.
- Black, M. (1954–55). Metaphor. *Proceedings of the Aristotelean Society*, 55, 273–294.
- Blasko, D. G., & Connine, C. M. (1993). Effects of familiarity and aptness on metaphor processing. *Journal of Experimental Psychology Learning Memory and Cognition*, 19(2), 295–295.
- Bohm, I. C., Altmann, U., & Jacobs, A. M. (2012). Looking at the brains behind figurative language—A quantitative meta-analysis of neuroimaging studies on metaphor, idiom, and irony processing. *Neuropsychologia*, 50(11), 2669–2683.

- Bowdle, B. F., & Gentner, D. (1999, August). Metaphor comprehension: From comparison to categorization. In *Proceedings of the Twenty-first Annual Conference of the Cognitive Science Society* (Vol. 21, p. 90). Lawrence Erlbaum Associates.
- Bowdle, B. F., & Gentner, D. (2005). The career of metaphor. *Psychological Review*, 112(1), 193–216.
- Cardillo, E. R., Watson, C. E., Schmidt, G. L., Kranjec, A., & Chatterjee, A. (2012). From novel to familiar: tuning the brain for metaphors. *Neuroimage*, 59(4), 3212–3221.
- Carter, R. (2004). *Language and Creativity*. London, UK: Routledge.
- Carter, R. (2007). Response to special issue of *Applied Linguistics* devoted to language creativity in everyday contexts. *Applied Linguistics*, 28(4), 597–608.
- Chen, C., Kasof, J., Himsel, A., Dmitrieva, J., Dong, Q., & Xue, G. (2005). Effects of explicit instruction to “be creative” across domains and cultures. *Journal of Creative Behavior*, 39(2), 89–110.
- Cook, G. (2000). *Language Play, Language Learning*. Oxford: Oxford University Press.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska Symposium on Motivation. Perspectives on Motivation*, Vol. 38. (pp. 237–288). Lincoln, NE: University of Nebraska Press.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behaviour. *Psychological Inquiry*, 11(4), 227–268.
- Fauconnier, G., & Turner, M. (2002). *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. New York, NY: Basic Books.
- Finke, R. A., Ward, T. B., & Smith, S. M. (1992). *Creative Cognition: Theory, Research and Applications*. Cambridge, MA: MIT Press.
- Gentner, D., Bowdle, B., Wolff, P., & Boronat, C. (2001). Metaphor is like analogy. In D., Holyoak, K.J., & Kokinov, B.N. (Eds.), *The Analogical Mind: Perspectives from Cognitive Science* (pp. 199–253). Cambridge, MA: The MIT Press.
- Gentner, D., & Wolff, P. (1997). Alignment in the processing of metaphor. *Journal of Memory and Language*, 37(3), 331–355.
- Gibbs, R. W. (1994). *The Poetics of Mind*. Cambridge, UK: Cambridge University Press.
- Giora, R. (1997). Understanding figurative and literal language: The graded salience hypothesis. *Cognitive Linguistics*, 8(3), 183–206.
- Giora, R. (2003). *On Our Mind: Salience, Content, and Figurative Language*. New York, NY: Oxford University Press.
- Glucksberg, S. (2003). The psycholinguistics of metaphor. *Trends in Cognitive Sciences*, 7(2), 92–96.
- Glucksberg, S., & Keysar, B. (1993). How metaphors work. In A. Ortony, *Metaphor and Thought: Second edition* (pp. 401–424). Cambridge, MA: Cambridge University Press.

- Goatly, A. (2011). *The Language of Metaphors* (2nd edition). London, UK: Routledge.
- González-Cutre, D., Sicilia, Á. S., Ferriz, R., & Hagger, M. S. (2016). Understanding the need for novelty from the perspective of self-determination theory. *Personality and Individual Differences*, 102, 159–169.
- Gregory, M. E., & Mergler, N. L. (1990). Metaphor comprehension: In search of literal truth, possible sense, and metaphoricity. *Metaphor and Symbol*, 5(3), 151–173.
- Harrington, D. M. (1975). Effects of explicit instructions to “be creative” on the psychological meaning of divergent thinking test scores. *Journal of Personality*, 43(3), 434–454.
- Houston, J. P., & Mednick, S. A. (1963). Creativity and the need for novelty. *The Journal of Abnormal and Social Psychology*, 66(2), 137–141.
- Jung-Beeman, M. (2005). Bilateral brain processes for comprehending natural language. *Trends in Cognitive Sciences*, 9(11), 512–518.
- Kintsch, W. (2008). How the mind computes the meaning of metaphor. In R. Gibbs (Ed.), *The Cambridge Handbook of Metaphor and Thought*, (pp. 129–142). New York, NY: Cambridge University Press
- Kövecses, Z. (2003). *Metaphor and emotion: Language, culture, and body in human feeling*. Cambridge, MA: Cambridge University Press.
- Kövecses, Z. (2010). A new look at metaphorical creativity in cognitive linguistics. *Cognitive Linguistics*, 21(4), 663–697.
- Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. Chicago, IL: University of Chicago Press.
- Lakoff, G., & Turner, M. (1989). *More Than Cool Reason: The power of Poetic Metaphor*. Chicago, IL: University of Chicago Press.
- Lantolf, J. (1997). The function of language play in the acquisition of L2 Spanish. In W. R. Glass & A. T. Perez-Leroux (Eds.), *Contemporary Perspectives on the Acquisition of Spanish* (pp. 3–24). Somerville, MA: Cascadilla Press.
- Littlemore, J. (2010). Metaphoric competence in the first and second language. In M. Pütz, & L. Sicola (Eds.), *Cognitive Processing in Second Language Acquisition: Inside the Learner’s Mind* (Vol. 293, pp. 293–315). Amsterdam: John Benjamins Publishing Company.
- Littlemore, J., & Taylor, J. R. (Eds.). (2014). *The Bloomsbury Companion to Cognitive Linguistics*. London/New York: Bloomsbury Publishing.
- Maddi, S. R. (1965). Motivational aspects of creativity. *Journal of Personality*, 33(3), 330–347.
- Miall, D. S. (1987). Metaphor and Affect: The Problem of Creative Thought. *Metaphor and Symbolic Activity*, 2(2), 81–96.

- Mirous, H. J., & Beeman, M. (2012). Bilateral processing and affect in creative language comprehension. In M. Faust (Ed.), *The Handbook of the Neuropsychology of Language* (pp. 319–341). UK: Wiley-Blackwell Publishing.
- Oring, E. (2003). *Engaging Humor*. Urbana: University of Illinois Press.
- Paivio, A., & Walsh, M. (1993). Psychological processes in metaphor comprehension and memory. In A. Ortony (ed.), *Metaphor and Thought*, (pp. 307–328). Cambridge: Cambridge University Press.
- Pitzl, M. L. (2011). *Creativity in English as a Lingua Franca: Idiom and Metaphor* (Unpublished doctoral dissertation). Universität Wien, Austria.
- Pitzl, M. L. (2012). Creativity meets convention: Idiom variation and re-metaphorization in ELF. *Journal of English as a Lingua Franca*, 1(1), 27–55.
- Plucker, J. A., Beghetto, R. A., & Dow, G. T. (2004). Why Isn’t Creativity More Important to Educational Psychologists? Potentials, Pitfalls, and Future Directions in Creativity Research. *Educational Psychologist*, 39(2), 83–96.
- Pomerantz, A., & Bell, N. D. (2011). Humor as safe house in the foreign language classroom. *The Modern Language Journal*, 95(s1), 148–161.
- Pope, R. (2005). *Creativity: History, Theory and Practice*. New York, NY: Routledge.
- Richards, I. A. (1936). *The Philosophy of Rhetoric*. New York: Oxford University Press
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78.
- Silvia, P. J., & Beaty, R. E. (2012). Making creative metaphors: The importance of fluid intelligence for creative thought. *Intelligence*, 40(4), 343–351.
- Silvia, P. J., Winterstein, B. P., Willse, J. T., Barona, C. M., Cram, J. T., Hess, K. I., ... & Richard, C. A. (2008). Assessing creativity with divergent thinking tasks: Exploring the reliability and validity of new subjective scoring methods. *Psychology of Aesthetics, Creativity, and the Arts*, 2(2), 68–85.
- Spelke, E. S. (2003). What makes us smart? Core knowledge and natural language. In D. Gentner & S. Goldin-Meadow (Eds.), *Language in Mind: Advances in the Study of Language and Thought*, (pp. 277–311). Cambridge, MA: MIT Press.
- Veale, T., Feyaerts, K., & Forceville, C. (Eds.). (2013). *Creativity and the agile mind: A multi-disciplinary study of a multi-faceted phenomenon* (Vol. 21). Walter de Gruyter.
- Ward, T. B. (1994). Structured imagination – The role of category structure in exemplar generation. *Cognitive Psychology*, 27(1), 1–40.
- Ward, T. B. (2001). Creative cognition, conceptual combination, and the creative writing of Stephen R. Donaldson. *American Psychologist*, 56(4), 350–354.
- Ward, T. B., Smith, S. M., & Finke, R. A. (1999). Creative cognition. In R. J. Sternberg (Ed.),

Handbook of Creativity (pp. 189–212). Cambridge: Cambridge University Press.

Wimmer, L., Christmann, U., & Ihmels, E. (2016). Non-conventional figurative language as aesthetics of everyday communication. *Metaphor and the Social World*, 6(2), 243-275.

Yang, J. (2014). The role of the right hemisphere in metaphor comprehension: A meta-analysis of functional magnetic resonance imaging studies. *Human Brain Mapping*, 35(1), 107–122.

Zeng, L., Proctor, R., & Salvendy, G. (2011). Can traditional divergent thinking tests be trusted in measuring and predicting real-world creativity? *Creativity Research Journal*, 23(1), 24–37.

Appendix

Appendix A: A complete list of the sentences in the context dependent metaphor task: English and Japanese versions

| English | Japanese |
|---|--|
| <p>Prime: Recalling a memory is In writing class, Mary has been told to look into her past and (____) some of her memories for there is a lot of good drama there.</p> | <p>Prime: A beautiful voice is She has a beautiful voice. Whenever I hear her voice, I imagine (____). 彼女は素晴らしい声を持っています。私が彼女の歌声を聞く時はいつでも、(____)を想像する。</p> |
| <p>Prime: A burden (debt) is After graduating from university, he has not been able to find a job. But still he bought a new car and a lot of new clothes. Now he has a lot of credit card debt and worries. He (____).</p> | <p>Prime: Nervousness/Excitement is A friend asked her to give a speech at her wedding reception, she (____). 結婚披露のスピーチを友達に頼んだら、彼女は(____)。</p> |
| <p>Prime: A large group of people are Yesterday in Odaiba, AKB48 came to sign autographs for their fans. There were so many people waiting outside and when they finally opened up the gate to let the fans approach the tables, (____).</p> | <p>Prime: Disappointment is His parents had many expectations that their son would be successful, so they got him into an expensive private university. But rather than studying hard, he began to party every night and in the end he had to drop out of school. His parents dream (____).</p> |

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| | <p>両親は、息子の成功へ期待を多く抱いていたので、彼らは高い私立大学に息子を入学させた。しかし、彼は一生懸命勉強せず、パーティーで一晩中外出し始め、最終的には学校を中退した。両親の夢は(____)。</p> |
| <p>Prime: Anger is The school festival was suppose to be a fun occasion, but when the teacher saw the students painting on the walls he got really angry. He (____).</p> | <p>Prime: An unforgettable experience is It was really exciting for I was competing against the top-level skaters in the world in the Olympics. So I will never forget this experience. This experience (____). 本当にワクワクしている。なぜなら世界で最高のスケーターと競うためにオリンピックに来たからだ。そして、私はこの経験を決して忘れません。この経験は(____)。</p> |
| <p>Prime: Falling in love is I met this really great girl/boy last night. We went out and had a great time. When I got home I couldn't sleep. She/he really (____).</p> | <p>Prime: Happiness/Pride is When I passed the university entrance exam, my parents (____). 私の両親が、私の大学入学試験合格をした時、彼らは(____)。</p> |