The Role of Similarity and Familiarity in the Metaphor and Simile Preference[*]

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Chiappe and Kennedy (1999, 2000, 2001) claimed that as the similarity increases, people tend to prefer the metaphor form and that similarity is a more important factor than familiarity. To test their claims, this present paper offers three experiments. Most results of the present experiments support Chiappe and Kennedy's (1999, 2000, 2001) claims, but some results do not support their claims. Therefore, I suggest that the similarity and familiarity play an important role in determining preference for the metaphor and simile form and that familiarity is a more significant factor than similarity in determining preference for the metaphor and simile form.

1. Introduction

This article aims to examine the role that similarity and familiarity play in determining preference for the metaphor and simile form. To do this, first, I will discuss the distinction between metaphors and similes. And I will offer three experiments to examine the role of similarity and familiarity in the metaphor and simile preference.

2. The metaphor and simile distinction

There are two major views of metaphor and simile. One is the equivalence view and the other is the nonequivalence view. For many years, since Aristotle, major theories of metaphor regarded simile and metaphor as equivalent (Miller 1979; Ortony 1979; Lakoff & Johnson 1980). Recently, several psycholinguistic researches have challenged this claim. They analyze the similes and metaphors as nonequivalent (Glucksberg & Keysar 1990; Gentner & Bowdle 2001; Chiappe & Kennedy 1999, 2000, 2001).

2.1 The equivalence view
2.1.1 The comparison theory

Miller (1979) and Ortony (1979) argued that the simile form is more basic than the metaphor form and suggested that metaphors are in fact elliptical similes. Specifically,

Miller argued that metaphors are recognized as false and then treated as comparison statements. For example, (1) is false in fact. In order to understand (1), the reader must associate it with (2).

(1) Woman is a fox.
(2) Woman is like a fox.

2.1.2 The conceptual metaphor theory

Lakoff and Johnson (1980, 1999) proposed that metaphor is not a linguistic process but rather a conceptual process. This process is a mapping process between two concept domains (target and source domains). According to Aisenman (1999:46), their argument implies "rejecting any difference between similes and metaphors because they differ linguistically only in the surface presence or absence of the word 'like'." The conceptual metaphor theory regarded similes and metaphors as the same with regard to comprehension, interpretation, and usage.

2.2 The nonequivalence view
2.2.1 The categorization theory

Glucksberg and his colleagues (1990, 1993, 1997, 1999, 2003) proposed the opposite view. They argued that the metaphor form is more basic than the simile form because metaphors are inherently categorization statements and similes are implicit categorization statements. For example, metaphors like (3) are not understood by transforming them into similes like (4). Instead they are intended as categorization statements, in which the target of the metaphor (e.g., time) is assigned to an ad hoc metaphoric category (e.g., things that flow forward). In contrast, the similes like (4) must be transformed into metaphors like (3) to be understood because they are implicit categorization statements.

(3) Time is a river.
(4) Time is like a river.

2.2.2 The career of metaphor theory

Gentner and Bowdle (2001:231) wrote that "metaphors are grammatically identical to literal categorization statements, and similes are grammatically identical to literal comparison statements." For example, (5) is grammatically identical to (6), whereas (7) is grammatically identical to (8). They suggested that accepting form typically follows function in language including both literal and figurative, metaphors and similes may tend to promote different comprehension strategies. That is, the metaphor form invites categorization, whereas the simile form invites comparison.

(5) Time is a river.
(6) Roses are flowers.
(7) Time is like a river.
(8) Squash is like racquetball.

2.2.3 The literal base theory

Chiappe and his colleagues (1999, 2000, 2001, 2003) argued that figurative claims are modeled on literal forms of expression and metaphors and similes are both statements about the similarity between the target and source. They reported that the metaphor form is preferred over the simile form when the similarity of the target and the source is quite high, whereas the simile form is preferred when the similarity is quite low. For example, according to Chiappe and Kennedy (1999), American people generally prefer the metaphor form (9) to simile form (10) of a statement, whereas people generally prefer the simile form (12) to metaphor form (11) of a statement.

(9) Genes are blueprints.
(10) Genes are like blueprints.
(11) Highways are snakes.
(12) Highways are like snakes.

Their explanation is that in literal language, the categorical form such as (13) is used when there are many common properties, whereas the similarity form such as (14) is used when there are few common properties

(13) That is an apple.
(14) That is like an apple.

3. Experiments

In Experiment 1, subjects saw both metaphor and simile versions of the 30 comparisons and they were asked to indicate which form they preferred. In Experiment 2, subjects saw the pairs of targets and sources and rated their similarity. In Experiment 3, subjects again saw the pairs of targets and sources and rated their familiarity.

3.1 Experiment 1
3.1.1 Method

Subjects. Thirty individuals (18 women and 12 men) with a mean age of 22.4 years participated in this experiment. Subjects were volunteers from a 3rd-year course in English. All the students were from Semyung University. Subjects were tested individually. None had participated in metaphor and simile-related studies before, and Korean was their first language.

Materials. In this experiment, I used 30 statements in both their metaphor and simile form. The items were taken from various sources in the psychological literature on figurative representation. I chose culture-general items, not culture-specific items. The items were presented in English.

Procedure. Subjects saw both metaphor and simile forms of the 30 comparisons, and indicated which form they preferred. The items were presented in random order, with a unique order for each subject. The metaphor and simile forms of a statement were presented at opposite ends of a 10-point scale. For example, "time is money" was presented at one end, and "time is like money" was presented at the other. Subjects were asked to indicate their preference by circling a number close to the form of the comparison they preferred using a scale ranging from 1 (best expressed as similes) to 10 (best expressed as metaphors). Higher numbers indicated preference for the metaphor form and lower numbers indicated preference for the simile form. Numbers 5 or 6 were used to indicate a weak preference for the simile or metaphor, respectively. Therefore, both Numbers 5 and 6 were excluded for preference ratings.

3.1.2 Results and Discussion

The results of the experiment 1 were as follows: The mean consensus level across the 30 comparisons was .70 (SD =.11). This level of consensus is not random [$t(29)=9.93$, $p=.000$]. Thus, generally, there was significant agreement between subjects on how particular comparisons should be expressed. The consensus covered the range from random (e.g., .52 for "life–play," as a metaphor) to close to unanimous (e.g., .84 for "time–money," as a metaphor). An analysis of critical ratio (CRs) shows that when N=30, consensus levels of .70 and greater are above chance on a two-tailed test ($CR=2.04$, $p<.05$).

In Table 1, we also revealed that the preferences per form varied greatly. They ranged from 14% ("science–glacier") of the subjects preferring the metaphor form to 85% ("movie 'Titanic'–blockbuster") preferring the metaphor form. Seven of 30 items were preferred as metaphors, whereas twenty-three items were preferred as similes. However, preference for comparison type was significant for only 18 of 30 items (15 similes and 3 metaphors). That is, in Table 1, comparisons marked with an asterisk had a significant preference for their simile form, and comparisons marked with a dagger had a significant preference for the metaphor form. The mean proportion of metaphors chosen was .37 ($SD=.20$). This was significantly less than chance [$t(29)=2.23$, $p<.05$]. Thus, in general, subjects preferred the simile form of a comparison over the metaphor form.

Finally, for the preference-rating task, the mean preference rating across the 30 comparisons was 4.99 ($SD=1.17$) on the scale from 1 to 10, revealing a slight, but not significant, preference overall for the simile form of the statements, [$t(29)= -0.031$, $p>.05$]. However, there was a considerable range in the preference ratings. For instance,

the mean preference rating for the metaphor form of the comparison between 'time' and 'money' was 8.07 out of 10. In contrast, the mean preference rating for the metaphor form of the comparison between 'science' and 'glacier' 3.61 out of 10. The comparisons, along with consensus, metaphor preference, and mean preference rating, are listed in Table 1.

\<Table 1\> Levels of consensus, metaphor preference, and mean preference rating for the metaphor for 30 Comparisons

	Consensus	Metaphor Preference	Mean Preference Rating
movie 'Titanic'–blockbuster†	.85	.85	8.11
time–money†	.84	.84	8.07
man–wolf†	.71	.71	6.71
crime–disease	.62	.62	6.18
deserts–ovens	.61	.61	5.93
life–play	.52	.52	5.89
time–river	.54	.46	5.68
cigarettes–time bombs	.54	.46	5.68
encyclopedia–gold mine	.55	.45	5.61
life–journey	.56	.44	5.50
marriage–zero-some game	.56	.44	5.29
sermons–sleeping pills	.55	.55	5.24
genes–blueprints	.61	.39	4.89
arguing–war	.65	.35	4.82
soccer–war	.68	.32	4.64
jobs–jails *	.70	.30	4.57
education–stairway *	.71	.29	4.43
lifetime–day *	.72	.28	4.36
salesman–bulldozer *	.73	.27	4.32

mosquitoes–vampires *	.74	.26	4.29
rain–tears *	.74	.26	4.29
surgeons–butchers *	.76	.24	4.18
highways–snakes *	.80	.20	4.18
memory–sponge *	.81	.19	4.11
giraffes–skyscrapers *	.82	.18	4.04
rage–volcano *	.82	.18	3.82
sun–orange *	.83	.17	3.82
rumor–weed *	.83	.17	3.79
tree–umbrella *	.84	.16	3.79
science–glacier *	.86	.14	3.61

3.2 Experiment 2
3.2.1 Method

Subjects. Twenty-two subjects (15 women and 7 men) with a mean age of 23.6 years participated. Subjects were volunteers from a 4th-year course in English. All the students were from Semyung University. Subjects were tested individually. None had participated in metaphor & simile-related studies before, and Korean was their first language.

Materials. The items for this study were the pairs of the targets and sources of 30 figurative statements used in Experiment 1. The items were presented in English.

Procedure. Subjects saw 30 pairs of targets and sources, such as 'crime-disease,' 'jobs-jails,' and so on. The items were presented in random order, with a unique order for each subject. The subjects were asked to read each item and judge similarity using a scale ranging from 1 (not similar at all) to 10 (extremely similar). For example, they were asked, "How similar is crime to disease?" Then they circled a number from 1 to 10.

3.2.2 Results and Discussion

The results of the experiment were as follows: The mean similarity rating for the pairs of targets and sources was 6.46 (SD= 1.23) on the scale from 1 to 10. The range was from 4.23 for the comparison between 'surgeons' and 'butchers' to 8.57 for the comparison between 'time' and 'money.' Thus, the results showed that the similarity ratings were on average high and there was a considerable range in similarity ratings across the pairs of 30 items. The similarity ratings for 30 pairs are listed in Table 2.

<Table 2> Similarity ratings for the pairs of 30 comparisons

Comparison	Similarity rating

time–money	8.57
education–stairway	8.37
life–journey	8.23
life–play	8.00
deserts–ovens	8.00
movie 'Titanic'–blockbuster	7.90
time–river	7.83
rage–volcano	7.67
mosquitoes–vampires	7.10
arguing–war	6.87
crime–disease	6.80
cigarettes–time bombs	6.70
man–wolf	6.57
sermons–sleeping pills	6.53
rumor–weed	6.43
memory–sponge	6.33
soccer–war	6.27
genes–blueprints	6.17
lifetime–day	6.17
rain–tears	6.03
salesman–bulldozer	6.00
science–glacier	5.90
jobs–jails	5.60
encyclopedia–gold mine	5.43
marriage–zero-sum game	5.30
tree–umbrella	5.13
giraffes–skyscrapers	5.00
highways–snakes	4.40
sun–orange	4.27
surgeons–butchers	4.23

I was interested in whether the similarity ratings obtained from the pairs of targets and sources were able to predict the preference for the metaphor and simile form that I obtained from Experiment 1. The similarity ratings predicted preference for the metaphor or simile form of the statements. The correlation coefficient (summarized in Table 3) between the similarity ratings and the mean preference ratings was +.56 ($p<.001$). That is, the correlation between similarity and mean preference rating for the metaphor was significant in Experiment 2, $p<.001$. Thus, as the similarity increased, preference for the metaphor form did too.

<Table 3> Correlation between similarity and mean metaphor preference

Variables	Mean	Standard Deviation	Correlation Coefficient	*p*-value
Mean Metaphor Preference	4.99	1.17	0.563	0.001
Similarity	6.46	1.23		

3.3 Experiment 3
3.3.1 Method

Subjects. Thirty subjects (18 women and 12 men) with a mean age of 21.3 years participated. Subjects were volunteers from a 2nd-year course in English. All the students were from Semyung University. Subjects were tested individually. None had participated in metaphor & simile-related studies before, and Korean was their first language.

Materials. The items for this study were the pairs of the targets and sources of 30 figurative statements used in Experiment 1. The items were presented in English.

Procedure. Subjects saw 30 pairs of targets and sources. The items were presented in random order, with a unique order for each subject. The subjects were asked to read each item and rate how familiar they were with the comparison between one concept and another using a scale ranging from 1 (very unfamiliar) to 10 (very familiar). For example, they were asked, "How familiar are you with the comparison between 'life' and 'journey'?" Then they were asked to circle a number from 1 to 10.

3.3.2 Results and Discussion

The results of the experiment were as follows: The mean familiarity rating for the pairs of targets and sources was 4.82 (*SD*= 1.17) on the scale from 1 to 10. The range was from 2.57 for the comparison between 'sun' and 'orange' to 6.77 for the comparison between 'time' and 'money.' Thus, the results showed that there was a considerable range in familiarity ratings across the comparison. The familiarity ratings for 30 pairs are listed in Table 4.

<Table 4> Familiarity ratings for the pairs of 30 comparisons

Comparison	Familiarity rating
time–money	6.77
man–wolf	6.57
life–play	6.50
life–journey	6.20
movie 'Titanic'–blockbuster	5.93
deserts–ovens	5.83
sermons–sleeping pills	5.83
mosquitoes–vampires	5.70
time–river	5.67
rage–volcano	5.50
education–stairway	5.40
cigarettes–time bombs	5.30
lifetime–day	5.28
arguing–war	5.17
jobs–jails	5.17
rain–tears	4.90
memory–sponge	4.80
crime–disease	4.73
soccer–war	4.63
rumor–weed	4.50
genes–blueprints	4.37
salesman–bulldozer	4.27
encyclopedia–gold mine	3.87
tree–umbrella	3.63
science–glacier	3.43
giraffes–skyscrapers	3.30
marriage–zero-sum game	3.23
highways–snakes	3.07
surgeons–butchers	2.70
sun–orange	2.57

I was interested in whether the familiarity ratings obtained from the pairs of targets and sources were able to predict the preference for the metaphor and simile form that I obtained from Experiment 1. The familiarity ratings predicted preference for the metaphor or simile form of the statements. The correlation coefficient (summarized in Table 5) between the familiarity ratings and the mean preference ratings was +.618 (p=.000). That is, the correlation between familiarity and mean metaphor preference

was significant in Experiment 3, *p*=.000. Thus, as the familiarity increased, preference for the metaphor form did too.

<Table 5> Correlation between familiarity and mean metaphor preference

Variables	Mean	Standard Deviation	Correlation Coefficient	*p*-value
Mean Metaphor Preference	4.99	1.17	0.618	0.000
Familiarity	4.82	1.17		

The correlation coefficient between the similarity ratings and the preference ratings was +.563 (*p*<.001), whereas the correlation coefficient between the familiarity ratings and the preference ratings was +.618 (*p*=.000). The results, unlike Chiappe & Kennedy's (2001) suggestion that similarity was more important than familiarity with a comparison in determining preferred form, showed that a person's familiarity with pairs of targets and sources is a more significant factor than similarity of targets and sources in determining preference for the metaphor and simile form.

4. General Discussion

The findings from these three experiments are as follows. Experiment 1 showed that there is consensus between subjects on how they express best some expressions. Korean people prefer to express some comparison as metaphors and some as similes. This suggests that preference for the form of a comparison is not idiosyncratic, but there is consensus between Korean people on how a comparison should be expressed. Experiment 2 showed that there is the correlation between the similarity and the simile–metaphor preference. Korean people preferred the metaphor form to the simile form when the similarity of targets and sources increases. Experiment 3 showed that there is the correlation between the familiarity and the simile–metaphor preference. Korean people preferred the metaphor form to the simile form when the familiarity increases. And the experiment showed that familiarity is a more significant factor than similarity in determining preference for the metaphor and simile.

The results of these experiments are relevant to views of simile and metaphor. The results of these experiments are inconsistent with the equivalence view (the comparison theory and the conceptual metaphor theory), whereas they are consistent with the nonequivalence view (the categorization theory, the career of metaphor theory, and the literal base theory). The comparison theory of Miller (1979) and Ortony (1979), which

goes back to Aristotle, argues that metaphors are short forms of similes with the term of comparison 'like,' left out (Billow, 1977; Fogelin, 1988; Miller, 1979; Ortony, 1979). And the conceptual metaphor theory of Lakoff and Johnson (1980) argues that similes differ from metaphors linguistically but they are the same conceptually. Therefore, the equivalence view like these two theories doesn't predict an increase in preference for the metaphor form as similarity or familiarity increases.

In contrast, the categorization theory of Glucksberg and Keysar (1990, 1993) argues that metaphors and similes are not the same. They suggest that metaphors are inherently categorization statements and similes are implicit categorization statements and so metaphors are stronger than similes. The categorization theory has offered bases for the claim that preference for the metaphor form increases as similarity increases. The career of metaphor theory of Gentner and Bowdle (2001) suggests that both the simile form and the metaphor form are linguistic signals that invite specific psychological processes. That is, the metaphor form invites categorization, while the simile form invites comparison. The literal base theory of Chiappe and his colleagues (1999, 2000, 2001, 2003) suggests that the metaphor form is preferred over the simile form when the similarity of the target and the source is quite high, whereas the simile form is preferred when the similarity is quite low. The career of metaphor theory and the literal base theory agree in predicting that high similarity is a decisive factor in metaphor processing. However, the literal base theory goes further and suggests that whether a comparison is expressed as a simile form or a metaphor form depends on the similarity between its target and source. However, the results of the present experiments do not support Chiappe and Kennedy's (2001) argument that similarity is a more important factor than familiarity in determining preference for the metaphor and simile.

In conclusion, I hold that the similarity and familiarity play an important role in determining preference for the metaphor and simile form and familiarity is a more significant factor than similarity in determining preference for the metaphor and simile form.

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