

A Bibliometric Analysis of the Five-Decade Publications on Metaphor

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Abstract—This study is focused on analyzing the publication trends on metaphor in the last five decades with the assistance of bibliometric analysis. The data used were 620 studies classified into several types of publication: 440 articles, 74 reviews, 39 book chapters, 33 books, 24 conference papers, two short surveys, three notes, two editorials, two conference reviews, and one press article. The data analysis used VOSviewer 1.6.5 and Tableau to form the data visualization. The results of this study show that the highest number of publications in 2018 was 66, while the keywords co-occurrence aspect in the metaphor study was dominated by human, metaphor, young adult, humans, figurative language and so on. Furthermore, the highest source trend analysis was ‘Neuropsychologia’ with 397 citations and Mashal’s author-based citation analysis with 292 citations. In contrast, the countries-based citation analysis was dominated by two countries: the United States at 2358 and United Kingdom at 1113. Then, the highest organizational trend was University College London, United Kingdom, with four documents and 77 citations.

Index Terms—bibliometric analysis, metaphor analysis, figurative language, language, data visualization

I. INTRODUCTION

Research on metaphor has been conducted since some years ago (see Figure 2). Metaphor has become an exciting topic worldwide as metaphor has a comprehensive relationship with other aspects of human life. Metaphorical language, a language that contains metaphorical speech, is a language that cannot be understood literally. The ability to articulate ideas that are difficult to convey with literal language alone is a key function of metaphorical language. Additionally, it has been found that descriptions of experiencing states involving high emotions were more frequently metaphorized than those involving mild emotions, but not descriptions of emotional acts (Fainsilber & Ortony, 1987).

A metaphor is a way of conveying something unusual. A metaphor is anything that exists outside of conventional language and requires specific forms for listeners to understand. According to Haugen (1972), the environment of a language is the community that utilizes that language. Language exists simply in the mind of the speaker, and it functions only to connect speakers with other speakers and their natural social surroundings (see also Gaho et al., 2022). In addition, metaphor is a figure of speech that may be avoided; we employ it for special effects, and it is not an unavoidable component of regular human communication, much alone everyday human intellect and reasoning (Ritchie, 2013; Kövecses, 2010). In this sense, figurative language is artistic, and metaphor is used as a communication style for a specific purpose (Dancygier & Sweetser, 2014). The result of our figurative cognition, which arises from the constant link between our physical experience and the relationship we establish with the cultural framework in which we live, is figurative language, which includes metaphor (Gibbs & Colston, 2012). Conceptual metaphors are always culturally and socially determined (Marugina, 2014). Thus, understanding metaphor never separates from culture because it has been mostly used in daily communication; it is similar to a simile (Saeed, 1993).

An example of a cross-domain conceptual mapping is a metaphor, which uses one mental domain to explain another. Metaphor is inherently a component of mind that can only be expressed externally through language, art, gesture, or other means (Baicchi, 2020). Likewise, Piata (2016), metaphor and humor both serve the specific rhetorical aims of election campaign advertising and political satire. Metaphor does this through the evaluative frameworks it invokes, while humor does this through its targets and its function as a tool for critique. Based on this definition, metaphors are well-known as a means for hiding information, usually for secrets. In line with deliberate metaphor is a conscious

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discourse strategy aiming to elicit particular rhetorical effects (Steen, 2008; Rashidin & Jalaluddin, 2014). In other words, metaphors seem like idioms whose meaning differs from a literal reading of the words they include. For instance, the English translation of the phrase “not to breathe a word” implies to keep it a secret; it does not mean not to be inspired (Fotovatnia & Goudarzi, 2014).

As a part of a figure of speech, metaphor is a context-sensitive phenomenon. It requires the interlocutor to understand the use of metaphors, not straight meanings. Metaphor differs from literal statements in which the speaker also wants the listener to develop an aspect (Genovesi, 2020). Actually, metaphor is central to analogical reasoning; it is an intrinsic part of human creativity and has a significant role in linguistic creativity and change (Lai & Shen, 2014). On the other hand, metaphor is conceptual mappings that in many cases pre-exist communication, structuring our thinking, reasoning, and understanding (Macagno & Rossi, 2019). Metaphor is at the nexus of mind and language. Metaphor is an ornamental aspect of speech and thought (Maltese et al., 2012). So, metaphor is sometimes dangerous in these concepts if spoken at the wrong time or when the speaker uses it with an interlocutor who does not know about it.

Without a doubt that metaphor is one of the types of figure of speech that exist; in fact, metaphor is more than just a figure of speech; it is a particular mental mapping and a type of brain co-activation that significantly affects how individuals reason, think, and imagine in daily life (Lakoff & Johnson, 1980). Metaphor is not mere poetic device but also language elements which convey specific messages in everyday communication (Muhammad & Rashid, 2014). Additionally, metaphors may be seen as conceptual system organizing models and a novel mechanism in traditional literary contexts that enhance the text’s coherence and cohesiveness (Marugina, 2014). On the other hand, conceptual metaphors as the property of the language can become one of the ways of modelling and interpreting literary discourse. Beyond the idea of being figures of speech, metaphor is seen as a style of thinking and a means of communicating information, meaning, or subliminal signals. Metaphors are well-known as central tools in communication and thinking (Rashidin & Jalaluddin, 2014; Potts & Semino, 2019).

To sum up, a metaphor is a phrase or statement that, when used literally, refers to one sort of item but is used to describe another that is very different from the first without making a direct connection. A metaphor is a phrase or word that is used to discuss anything different than its essence or most fundamental meaning (Rasouli & Rahimi, 2015; Deignan, 2005). Indeed, by using certain words and phrases to allude to important subjects when they often refer to other subjects, a writer might use metaphor to achieve certain rhetorical purposes, such as building a relationship with the reader and exercising judgment (Charteris-Black & Musolff, 2003), however, metaphor is a cultural phenomenon and as such it has to be accommodated according to the language (Roldán-Riejos & Cuadrado, 2015). A metaphor is a powerful language tool that adapts to a person’s goals and objectives (Solonchak & Pesina, 2015). Semino (2008) points out that metaphor is the practice of comparing one thing to another when speaking or thinking about it (see also Gaho, 2020). Fill and Miihlhausler (2001) reaffirm that living language (used both orally and in writing) represents facts about nature, society, and culture that exist in their environment. As a result, language is not only a record of social facts, but it is also a record of natural facts as a sign that there is a relationship between humans and their natural environment that is recorded in the lexicon of a language. In light of the aforementioned explanation, metaphors in Balinese discourses primarily demonstrate that from a biological perspective, metaphors can make references to inanimate objects, animals, and plants; from a sociological perspective, metaphors are used to convey directives, requests, satire, praise, and suggestions (Kardana et al., 2022).

Grounded by some research on metaphors that have been discussed from many points of view above, none of them discussed metaphors through bibliometric analysis. This study aims at reviewing comprehensive literature to analyse the annual trends of metaphor-related publications in the recent five-decade and the future prediction of the metaphor analysis.

II. METHOD

A. Method

In accordance with the scope of this study, the Scopus database in all years was used to examine the problems with metaphors. The reason why the Scopus database was used is as Scopus covers a more comprehensive journal range, of helps both in keyword searching and citation analysis (Falagas et al., 2008). The keywords (TITLE-ABS-KEY (“metaphor analysis” OR “figurative language” OR “figure of speech”) AND TITLE-ABS-KEY (“literary” OR “literature”)) were entered into the ‘topic’ section, and 620 studies were successfully reached (February 15 2022). The 620 studies were classified into several types of publication: 440 articles, 74 reviews, 39 book chapters, 33 books, 24 conference papers, two short surveys, three notes, two editorials, two conference reviews, and 1 article press, as shown in Figure 1.

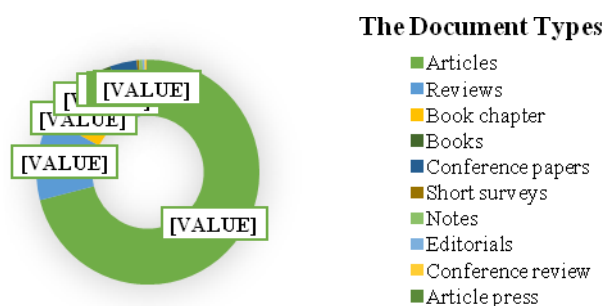


Figure 1. The Types of Publications on Metaphor

B. Data Analysis

To reach the objective of this study, VOSviewer 1.6.5 was applied for the mining and visualization of data. VOSviewer is a software tool to create maps based on network data and visualizes and explores these maps. Thus, the functionality of VOSviewer can be creating maps based on network data and visualizing and exploring maps (van Eck & Waltman, 2010; Waltman & Van Eck, 2012). It is also stated that VOSviewer is intended primarily for analyzing bibliometric networks. It can create, visualize, and explore maps based on network data. Tableau Public software was also applied to obtain an alternative to the analysis. The two software tools can perfectly visualize and map the data.

III. RESULTS

The results of this paper are about the detailed interpretation of some points regarding the annual trends and keyword co-occurrence analysis of metaphor-related publications in 3.1, the co-authorship analysis on metaphor in 3.2, the citation analysis on metaphor-related publications in 3.3.

A. The Annual Trends and All Keywords Co-Occurrence Analysis of Metaphor-Related Publication

(a). The Annual Trends of Metaphor-Related Publication.

One of the uses of the VOSviewer tool is to figure out the annual trends of the publication. In this case, the annual publications regarding metaphor analysis can be shown to recognize how often metaphor has become the topic of research.

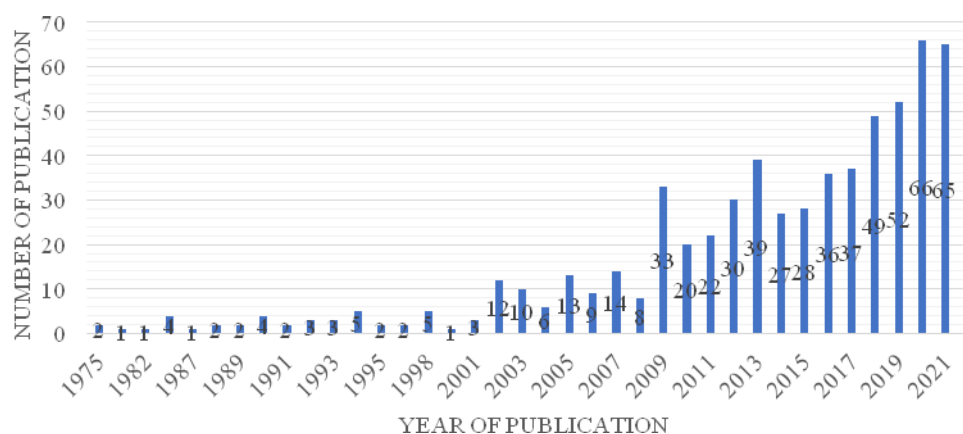


Figure 2. The Annual Trends of Metaphor-related Publication.

Figure 2 shows the annual trends of Metaphor Analysis publications. Metaphor analysis had been carried out since the 1970s, and until 2001 it did not show significant growth in publication. However, from 2002 to 2008, the number of publications significantly increased. Scholars began to conduct more research on metaphors in 2009, and the great jump happened from 2018 to 2021, up to 66 articles per year. This shows that the metaphor evolves from one decade to the next decade. Currently, metaphor analysis has become the focus of research as a metaphor is a linguistic study that people can use to convey moral messages indirectly in literary works. Unfortunately, metaphors are often preoccupied with the local wisdom of particular communities that need to be preserved and developed.

(b). The All Key-Words Co-Occurrence Analysis of Metaphor-Related Publications

Of the total 2771 with minimum number of occurrences of a keyword was determined as 7 and the number of key-words to be selected was automatically stated as 108. The created map is displayed in Figure 3.

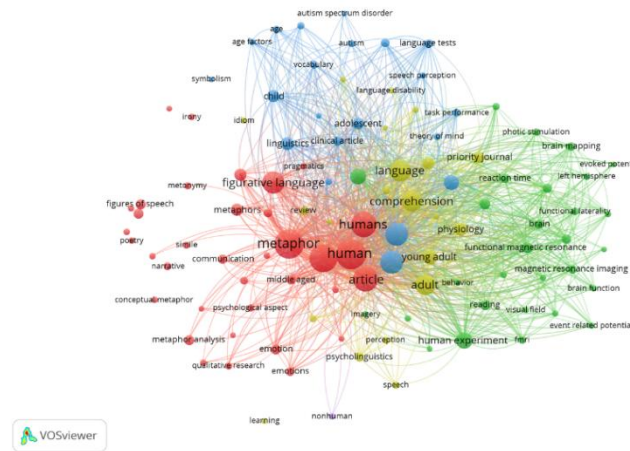


Figure 3. The All Key-words Co-occurrence

Figure 3 shows that there are five clusters. Cluster 1 consists of 36 items with red nodes. The main items of this cluster are mostly related to the metaphor itself, such as “metaphor”, “figurative language”, “human”, and “article”. Some other smaller nodes of this cluster are “communication”, “emotion”, “metaphor analysis”, and “middle-aged”. This cluster looks to be the main item having close relation to metaphor analysis. Cluster 2 consists of 29 items, and they are in green nodes. Most items of this cluster are likely related to the process of metaphor. The most prominent nodes of this cluster are “semantics”, “human experiment”, “reading”, “language processing”, “functional magnetic resonance”, “brain”, “brain mapping”, “reaction time”, “photic stimulation”, “left hemisphere”, and “functional literacy”. All the big and smaller node items are connected to the main items of cluster 1. Cluster 3 consists of 21 items that are with blue nodes. This cluster is related to the goal of what the metaphor is analyzed for. The dominant items of cluster 3 involve items regarding sex like “male” and “female”: related to age like “age”, “age factors”, “child”, and “adolescent”, related to human behaviour like “autism”, “autism spectrum disorder”, “theory of mind”, “verbal behaviour” and related to language like “linguistics”, “clinic article”, “language test”, and “speech perception”. Cluster 4 consists of 21 items, and they are in yellow nodes. The items are grouped that are related to the understanding of metaphor. The three biggest items are “language”, “adult”, “and comprehension”, and these are very close to the understanding of metaphor. The smaller items are “young adult”, “physiology”, “language disability”, and pathophysiology”. Cluster 5, as the last cluster, only consists of 1 item. It is not related to the items discussed previously. The only item of this cluster is “nonhuman” that is in purple node. The location of the item is outside and a little bit far from the main items, but it still connected with the main item of “metaphor.”

Furthermore, all key-words co-occurrence from year to year is also displayed through overlay visualization, as in figure 4. The blue and rather dark green nodes signal that the items or the words were mostly used before 2012, light green and yellow nodes tell us the items used after 2012, and even in recent years, the yellow node items are often used. It shows that the items like “physiology”, “young adult”, “human experiment”, “figurative language”, “figure of speech”, “emotion”, “metaphor analysis”, “qualitative research”, “poetry”, “magnetic resonance”, “metonymy”, and “left hemisphere” are key-words co-occurrence often found from 2015 to present in some sources.

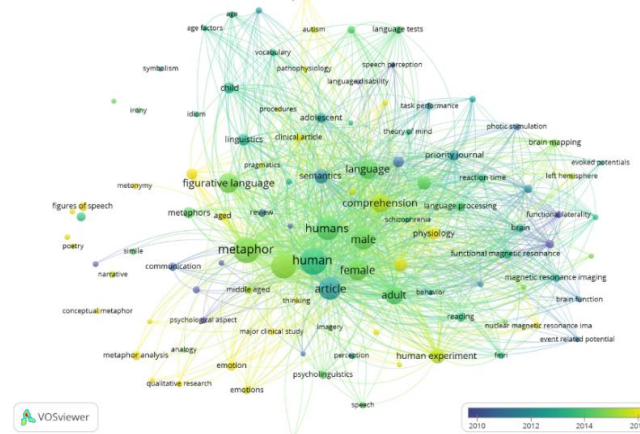


Figure 4. Overlay Visualization of the All Key-Words Co-occurrence

B. The Co-Authorship Analysis on Metaphor

Research fields have a lot of perspective analysis. To obtain a complete and comprehensive analysis of a certain subject, we need collaborative strength among scholars. Thus, co-authorship research becomes an important content of bibliometrics to observe. In this section, VOSviewer software presents the country co-authorship analysis, the author co-authorship analysis, and the organization co-authorship analysis.

(a). The Country-Based Co-Authorship Analysis

The top ten countries with total link strength regarding metaphor analysis can be seen in Table 1. The United Kingdom is the country that has the most link strength number. The United States, Germany, and Italy followed it. Australia and Spain have the same number of link strengths. China and Poland also have the same number of link strengths. Norway and Japan come to rank 7 and 8 before China.

TABLE 1
THE TOP 10 COUNTRIES CO-AUTHORSHIP

No	Country	Documents	Citation	Total link strength
1	United Kingdom	62	1113	28
2	United States	148	2358	25
3	Germany	38	881	24
4	Italy	33	369	16
5	Australia	20	367	9
6	Spain	22	134	9
7	Norway	12	318	8
8	Japan	6	73	7
9	China	16	60	5
10	Poland	16	15	5

The United States has the most citations among the countries but it has less total link strength than the United Kingdom. It means that in terms of co-authorship the number of total link strength becomes a reference to determine the rank.

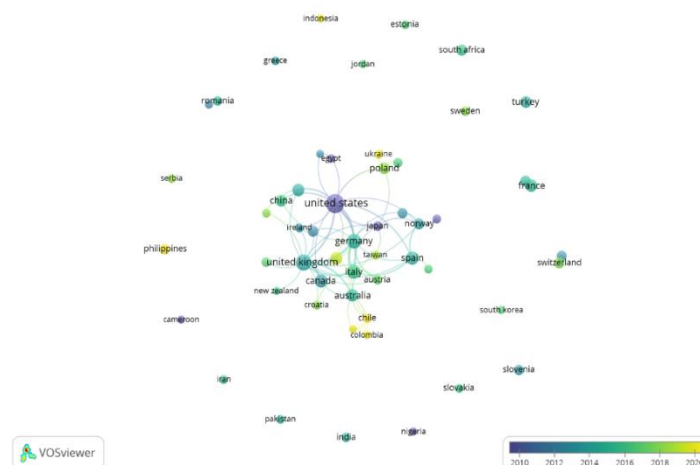


Figure 5. The Overlay Visualization of Country Co-Authorship Network of Metaphor-related Publications

From the Overlay Visualization in Figure 5, the co-authorship network is known based on the publication year. The yellow nodes indicate that Chile, Colombia, Ukraine, Philippines and Indonesia are countries that have co-authorship in publishing metaphors for recent years, precisely from 2018 up to the present. Chile, Columbia, and Ukraine belong to countries that are in the middle, and it indicates they have had plenty of co-authorship in recent years; meanwhile, the position of Philippines and Indonesia are outside of the interconnected circle, and it indicates that both countries only have a few co-authorships in publication. Some countries like the United Kingdom, Canada, the United States, China, Germany, Norway, Spain, Taiwan, Ireland, Australia, Croatia, New Zealand, Norway, and Poland have plenty of co-authorship publications on metaphors before 2018.

(b). The Author-Based Co-Authorship Analysis

Overall, data analysis, explicitly searching author-based co-authorship analysis through VOSviewer, display 1000 names of authors related to the metaphor study, but VOSviewer as an analysis tool only displays authors with high total link strength. The following are the top 10 author-base co-authorship analyses.

TABLE 2
THE TOP 10 AUTHORS-BASED CO-AUTHORSHIP ANALYSIS

No	Author	Documents	Citations	Total link strength
1	Bambini V	5	143	18
2	Chatterjee A	4	129	14
3	Citron F.M.M	5	70	15
4	Oberta A	3	33	16
5	Bellani M	1	9	14
6	Bellini F	1	9	14
7	Bonetto C	1	9	14
8	Brambilla P	1	9	14
9	D'agostino A	1	1	14
10	Finos L	1	1	14

The top 10 authors-based co-authorship analyses, as in Table 2, are obtained from VOSviewer analysis. In the first place, co-authorship is occupied by Bambini, who has a very high number of citations and documents. Then, followed by Chatterjee, who was in second place in obtaining the most citations but slightly lower in obtaining documents compared to Citron, which had five documents but only 70 citations. This figure is lower than Chatterjee's. The co-authorship with the next highest score was Oberta, with 33 but very few documents. In addition, four authors have the same citation number, namely Bellani, Bellini, Bonetto and Brambilla, while the lowest co-authorship positions are D'agostino and Fino. However, they are large in link strength which is 14.

Further analysis, by assigning the number 1 to the minimum number of documents of the author, found 1167 automatically meets the thresholds. For each of the 1167 authors, the total strength of the co-authorship links with other authors would be as much as 1000. However, only 19 items, the largest set of connected items, were shown and divided into five clusters, as shown in Figure 6 below.

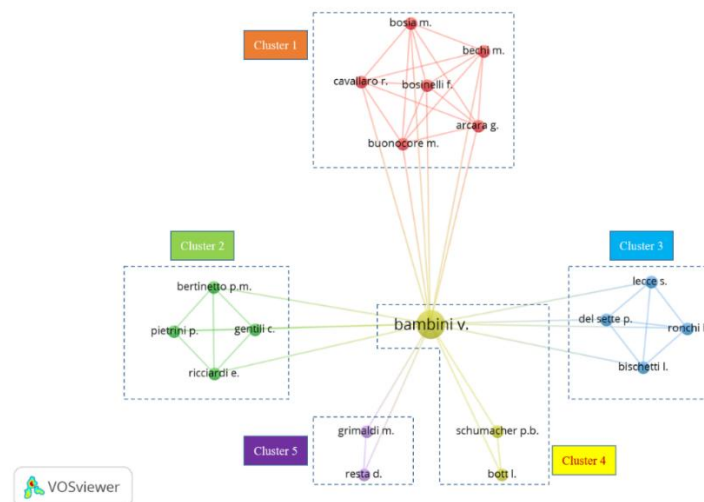


Figure 6. The Network of Author Map From Co-authorship Analysis of Metaphor-related Publications

The first cluster marked with orange consists of 6 people, while the second cluster marked with green consists of 4 people. Furthermore, the third cluster also consists of 4 people marked in blue. There are three people in the fourth cluster, which is marked in yellow. Meanwhile, the fifth cluster marked in purple only consists of 2 people. It can be seen that the relationship between all co-authorships is intertwined with each other, whereas in the network map, Bambini is the centre because it has more documents than the others.

(c). The Organization-Based Co-Authorship Analysis

The organization search specification based on co-authorship analysis through VOSviewer showed 936 organizations, but only organizations with high total link strength were shown. The following are the top 10 organizations selected for the publication of metaphors.

TABLE 3
THE TOP 10 ORGANIZATIONS-BASED ON CO-AUTHORSHIP ANALYSIS

No	Organization	Document	Citation	Total link strength
1	University College London, United Kingdom	4	77	0
2	Department of Psychology, Lancaster University, United Kingdom	3	20	1
3	Department of Education and Professional Studies, King's College London, United Kingdom	2	77	0
4	Ceastic Laboratory (ea 3804) University of Reims Champagne-ardenne, France	2	28	2
5	Department of Physical Medicine and Rehabilitation, Sastopol Hospital, Reims University Hospital, France	2	28	2
6	Humboldt-Universitt zu Berlin, Institut fr Deutsche Literatur, Germany	2	6	2
7	University of Hildesheim, Institut Fr Deutsche Sprache Und Literatur, Germany	2	6	2
8	Advanced Technology System, Romania	2	1	4
9	Ataturk teacher Academy, Cyprus	2	1	4
10	Near East University, Nicosia, Cyprus	2	1	4

Table 3 above shows that the organization with the highest number of documents and citations is 'University College London, United Kingdom. Then followed by 'Department of Psychology, Lancaster University, United Kingdom, which has the most published documents, while Department of Education and Professional Studies, King's College London, United Kingdom is in third position with 77 citations. The next organizations that have the highest citations are the Ceastic Laboratory (ea 3804), University of Reims Champagne-Ardenne, France and the Department of Physical Medicine and Rehabilitation, Sastopol Hospital, Reims University Hospital, France. Then, the position of the organization that has the next highest citation is 'Humboldt-Universitt zu Berlin, Institut fr Deutsche Literatur, Germany and University of Hildesheim, Institut Fr Deutsche Sprache Und Literatur, Germany. Meanwhile, the organizational positions that have the lowest citations are Advanced Technology System, Romania, Ataturk teacher Academy, Cyprus and Near East University, Nicosia, Cyprus. However, these three organizations have great link strength. The criteria for selecting the top 10 organizations in this data are determined based on the number of published documents. In the 620 data used for analysis, there are 936 organizations. However, by assigning a number 2 to the minimum document in the organization, there are only 24 that meet the threshold, as seen in the following organization of density visualization.

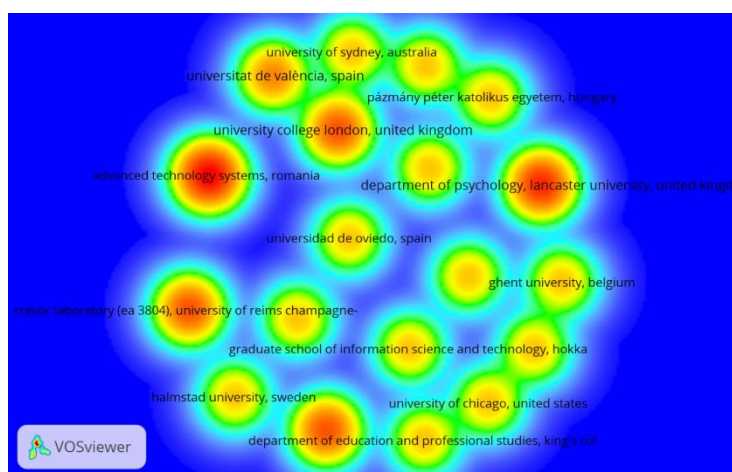


Figure 7. The Density Visualization Map of Organization Co-authorship Map

C. The Citation Analysis on Metaphor-Related Publications

The citation analysis of publications, especially on metaphorical study data in the last five decades, as many as 620 documents, was carried out using the VOSviewer analysis tool. The following data analysis focuses on the search for sources, authors, and countries. The details of the data can be seen in the following description.

(a). The Journal-Based Citation Analysis

Citation analysis in the search for sources of metaphorical publications in this section is presented in the form of graphs and network maps. A total of 620 data were found in 494 sources using the VOSviewer analysis tool. The following are the top 10 journals with the most citations, which can be seen in Figure 8.

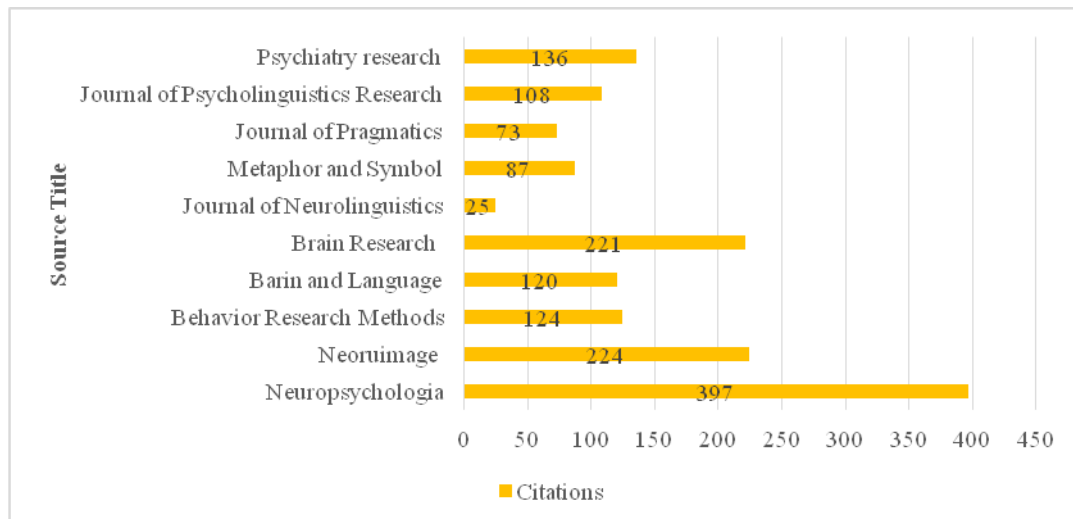


Figure 8. The Top 10 Journal Based on Citation Analysis

It can be seen in Figure 8 that the highest citation gain was “Neuropsychologia” with as much as 397 and then followed by “Neuroimage” with as many as 224 citations. The Brain Research journal has the highest citation, as much as 221. This figure places it in the third most significant position. In addition, there is the journal Psychiatry Research which received 136 citations and was followed by Behavior Research Methods with 124 citations. The journal with the next highest citation was Journal of Psycholinguistics Research’ with as much as 108, ‘Metaphor and Symbol’ with as much as 87 and Journal of Pragmatics with as much as 73.

Meanwhile, the lowest citation gain was occupied by the Journal of Neurolinguistics as much as 25. The top 10 journals based on the citation analysis shown above are all connected. The connection among them can be seen on the network visualization map, as shown in Figure 9.

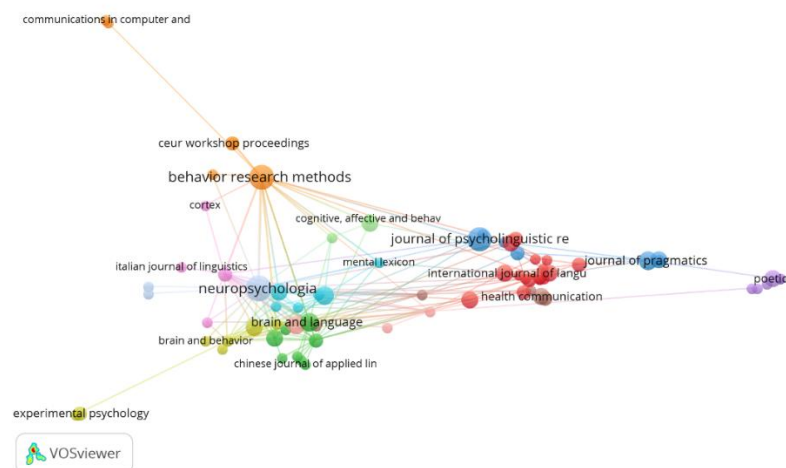


Figure 9. The Network Visualization of Journal-base Citation Analysis

(b). The Authors-Based Citation Analysis

As stated previously that there are 620 documents that were analysed through VOSviewer and interestingly found 1169 authors. However, of the 1169 authors only the authors with the highest total link strength appeared on the VOSviewer screen. Then, the top 10 authors who have the highest citations are filtered as follows.

TABLE 4
THE TOP 10 AUTHORS-BASED CITATION TYPE OF ANALYSIS

No	Authors	Documents	Citations	Total link strength
1	Mashal N	6	292	163
2	Schmidh G.L	2	210	154
3	Jacobs A.M.	4	240	150
4	Bambini V	5	143	147
5	Rapp A.M	3	256	134
6	Altmann U	1	163	116
7	Bohm I.C	1	163	116
8	Faust M	3	216	109
9	Seger C.A	1	118	108
10	Chatterjee A	4	129	101

Table 4 above shows several authors with a very high number of citations related to the publication of metaphors. The authors were obtained through an analysis tool, namely VOSviewer, which was then classified based on the number of documents, citations and total link strength. In the first position, Mashal is the author who has the highest number of citations on all items. Then, followed by Rapp A.M, who came in second place. Next are Jacobs and Fraust, each of which has the highest number of citations, namely 240 and 216, but the number of documents owned by Fraust is lower when compared to Jacobs. In the fifth position is an author named Schmidh, with a total of 210 citations. More interestingly, some authors get the same number of three items, namely Altmann and Bohrn.

Furthermore, Bambini obtained the highest number of documents after Mashal but had the lowest number of citations. Lastly, there is Chatterjee, who has a higher number of citations than Seger, but in total link strength items, Seger is superior. However, not all of the above writers have a relationship with one another in metaphorical publications, such as Araki, Raney, Mora and Laslo, which appear to be separate. The relationship between them can be seen in the following network map.

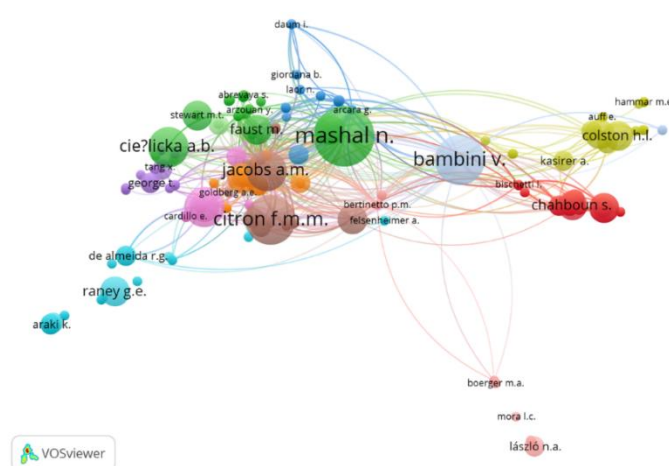


Figure 10. The Network Visualization Map of Authors-based Citation Analysis

(c). *The Country-Based Citation Analysis*

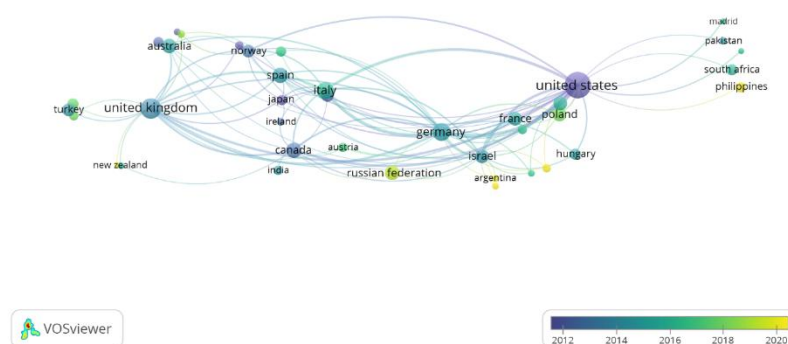
The results of the data analysis shown below are the top 10 countries that have the highest citations in metaphor publications. By using the VOSviewer analysis tool, 83 countries were found as presented in Table 5. Then, all of those countries were also displayed visually in Figure 11.

TABLE 5
THE TOP 10 COUNTRIES-BASE CITATION ANALYSIS

No	Countries	Documents	Citations	Total link strength
1	United State	148	2358	187
2	United Kingdom	62	1113	92
3	Germany	38	881	138
4	Italy	33	369	84
5	Israel	17	351	64
6	Canada	24	255	52
7	Norway	12	318	29
8	Australia	20	367	16
9	Denmark	4	145	7
10	Netherlands	12	211	7

In Table 5, it can be seen that two countries dominate the acquisition of the highest number of citations, namely the United States at 2358 and the United Kingdom at 1113. Then, followed by Germany and Italy. Furthermore, Australia and Israel, respectively, have the highest number of citations, namely 367 and 351. In addition, Norway and Canada have the highest number of citations, namely 318 citations for Norway and 255 citations for Canada. In the last position is Denmark, which only has four documents and 145 citations, while the Netherlands is superior in the number of documents, namely 12 and 211 citations. The following figure would be clearly displayed the top 10 countries-based citation analysis.

(a)



(b)

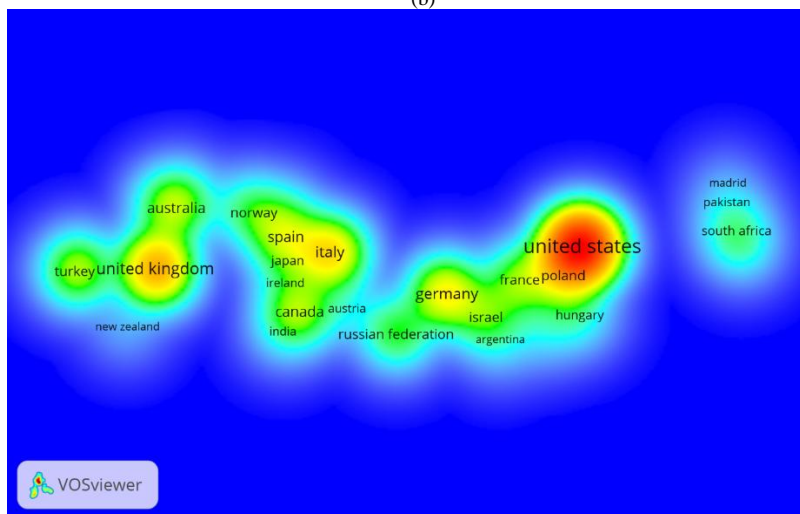


Figure 11. (a) Network Map of the Most-Cited Countries; (b) Density VIEW

If analyzed further, the tendency of the United States and the United Kingdom, especially in the number of metaphor publications and also the acquisition of a high number of citations, only occurred between 2010 and 2014. It is seen in Figures 11 (a) and (b) as follows. Furthermore, Figure 11 (a) shows that the United States marked with purple colour has the highest number of documents and citations only in 2012. Likewise, the United Kingdom dominated only in 2014. Meanwhile, the range from 2015 to 2016 was dominated by Germany and Italy. The trend of these two countries is visible in Figure 11 (b), which is marked with a bright yellow colour. When compared to the latest years, namely 2018 and 2020, only a few countries still dominate in terms of metaphor publications, such as Argentina, the Russian Federation, Poland and the Philippines.

IV. DISCUSSION

The results of the analysis on the study of metaphor literature, especially publications in the last five decades through bibliometric analysis, have been explained clearly. It turns out that there is a significant decrease in the number of metaphor publications in several countries, especially in 2021 (see Figure 2). Of course, these findings do not indicate a drastic decline in researchers' interest in the study of metaphors themselves. This is caused by changes in each country's research issues and research needs. The proof is that some countries are still actively publishing metaphor

studies, and these authors still pay full attention to metaphor studies that are spread across several countries. In fact, the study of metaphor does not only occur in the field of linguistics or the study of pure communication science but also occurs in other disciplines, for example, in the field of technology (see Dronova, 2015; Erman, 2012; Hendricks et al., 2018; Olęhnowińska et al., 2016; Saputra et al., 2022; Trinadi et al., 2022). A study in engineering shows that engineering discourse is highly metaphoric and borrows from multiple metaphoric domains other than the typical engineering jargon. The words such as *port*, *plant*, and *bridge*, are polysemous words that depending on the context, can appear in different strata of metaphorization (Roldán-Riejos & Cuadrado, 2015). This is in line with the data shown in Figure 4. Various keywords indicate the domain of symbolic studies, such as humans, animals, plants, psychology, culinary fields, etc. Roldán-Riejos and Plaza (2015) said that the cooking metaphor is widely spread in the metallurgical domain in English and Spanish, although with different nuances in each language due to sociocultural factors. Thus, the field of study that deals with metaphors are not limited. Especially in communication, metaphors are easily recognized (Rewiś-Lętkowska, 2019).

Annual trend analysis and keyword co-occurrence analysis from publications related to metaphors as in 3.1; co-authored analysis of metaphor in 3.2; and the analysis of quotations in publications related to metaphors in 3.3 provides broad knowledge space for readers, academics and even researchers to understand the study of metaphors that are not limited in their fields. It can be concluded that metaphor is a unique and limitless field of research (Ritchie, 2013). It is because metaphor is part of human intellectual production that integrates with culture, technology and science. Again, metaphors used in conversations perform certain communicative functions, most persuasive, social or entertaining (Rewiś-Lętkowska, 2019).

V. CONCLUSION

Grounded on the results of analyzing data of metaphor publication using VOSviewer and Tableau can be concluded that metaphor studies experienced an increase in the number of notable publications from 2000 to 2020. Then, the domains of the analysis material, especially the study of metaphors, are very diverse, almost touching all aspects of life, but still tend and are closely related to human habits, gender (male and female), experiences, emotions, feelings, thoughts, even related to inanimate objects and living things which incidentally are ecolinguistic areas and so forth (see Figure 3). So, it can be concluded that wherever and whenever communication occurred, there is also the use of metaphor. Metaphor is a part of daily human communication that is only used in different ways and interpreted differently (Genovesi, 2020). In addition, the results of this analysis can be used as a reference for further researchers to see opportunities for acceptance of articles in the field of metaphor, especially in trusted journals (see Figure 8), of course, by looking at the results of area mapping carried out in this current study, both organizations, countries as well as previous authors (see Figure 10; Figure 11) which can be used as parameters.

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