The Role of Videos in Delivering Meaning of L2 Metaphors to Saudi EFL Learners

Reem Alotaibi

Department of English Language and Literature, Faculty of Arts, King Saud University, Riyadh, Saudi Arabia

Abstract- This study investigates Saudi EFL learners' L2 metaphoric language knowledge through a multiple-choice pre-test questionnaire. This questionnaire was re-administered after participants watched the videos containing the same metaphors. Results suggested that learners lack figurative language knowledge, yet when these were exposed in videos a significant improvement was seen through the post-test questionnaire. Results were analyzed in terms of literal and non-literal choices demonstrated in the questionnaire. Also, a contrastive model of six types of metaphors developed by Charteris-Black (2002) was considered in analyzing the poor performances drawn by participants.

Index Terms- EFL learners, Figurative language, Metaphors

I. INTRODUCTION

Metaphors are widely used in everyday speech. They are defined as "conceptual operations reflected in human language that enable speakers to structure and construe abstract areas of knowledge and experience in more concrete experiential terms" (Hurford, Heasley, and Smith, 2007, p. 331). It is important that EFL learners are capable of comprehending and using metaphors in their daily communications. A study by Zibin (2016) revealed that Jordanian EFL learners are not capable of producing English metaphorical expressions which was seen through the participant's low results of answering a completion task of metaphors. The lack of producing metaphorical expressions or even understanding them is due to the shortage of continuous exposure to the metaphorical expressions in real-life English (Zibin, 2016).

The present study attempts to examine the role of videos as an exposure in delivering meaning of metaphors. It aims to discover the extent Saudi EFL learners can understand metaphorical expressions both before and after they are shown video clips of people using metaphors in everyday situations. An experimental design of a pre- and post-test will be used as the indicator of the role of videos in delivering the correct meaning of metaphors.

The study follows the general theoretical framework of Conceptual Metaphor Theory that was first introduced in 1980 by Lakoff and Johnson. The theory proposes that understanding can be established through linking one idea to another idea. Thus, the correlation between the understandings of metaphors via visual demonstrations of such metaphors in videos could lead to the reference of using videos in language comprehension.

II. REVIEW OF LITERATURE

Zibin (2016)

Zibin (2016) sheds light on the production of metaphors and metonymies by Jordanian EFL learners. She aimed to discover to what extent Jordanian EFL learners have the ability to produce figurative devices such as metaphors and metonymies in English. Another focus drawn by the author was to discover the influence of first language figurative knowledge on the participants' production of English metaphorical and metonymical expressions.

Throughout the paper, Zibin adopted a contrastive model to compare and contrast figurative devices in English and Jordanian Arabic. This contrastive model was developed by Charteris-Black (2002) investigated figurative expressions in English and Malay in terms of the similarities and differences between the two languages. The model consisted of six types of figurative units that was based on an earlier model designed by Deignan et al. (1997). These six types of figurative units by Charteris-Black were proposed depending on whether there is a correspondence between the linguistic expression and the conceptual basis in the two languages. It also examines whether the linguistic expressions and conceptual bases exhibit culture-specific (opaque) or universal (transparent) characteristics.

Figurative units are divided into the following:
1) Equivalent conceptual basis and equivalent linguistic form.
2) Equivalent conceptual basis and similar linguistic form.
3) Completely different conceptual basis but similar linguistic forms.
4) Similar conceptual basis but completely different linguistic form.
5) Completely different conceptual bases and completely different linguistic expressions but the metaphorical expressions may be transparent.
6) Completely different conceptual basis and completely different linguistic expressions with an opaque metaphorical expressions.

One hundred advanced learners studying English Language and Literature at the University of Jordan participated in this study. Their mean age was 22 years, and they were in the final stage of their BA; having completed 80 to 90 credit hours of advanced English courses such as poetry, drama, and syntax. The author Zibin (2016) referred to McGraw-Hill's American Idioms

Dictionary (2007) for her data collection to extract metaphors and metonymies in English. She also used A Comprehensive Dictionary of English Idioms: English-Arabic (1997) to collect these devices in Arabic. To ensure the validity of the results, the author checked the frequency of the English figurative units in The Corpus of Contemporary American English to ensure that they are used in contemporary speech.

As for the instrument of the study, a 24-item cued completion test containing contexts was given to participants: four figurative expressions for each type of the six figurative units by Charteris-Black. The participants were given three clues that assisted them in providing the correct answers of the required figurative expression. One indicated an idea about the meaning of the expression they should use. The second clue emphasized a keyword from the metaphorical expression in question. The last clue indicated the number of words they should use. Six tables were presented to show the percentage of the correct responses on each test item for the six types of figurative units.

In addition, an earlier study conducted by Zibin (2016) measured the participants' receptive knowledge of the metaphorical/metonymical expressions using a multiple-choice test. However, according to Zibin's recent (2016) study, the aim was to investigate the participants' production knowledge of these expressions using a completion test. Both Zibin (2016) used the same figurative devices and tested the same participants. Zibin wanted to compare the participants' results on both tests and measure their abilities to comprehend and produce English metaphorical/metonymical expression.

Zibin (2016) showed that the participants' scores were poor in general yet their general capacity to produce metaphorical/metonymical expressions is mainly due to their L1 conceptual and linguistic knowledge. In comparing Multiple-choice test and completion test results, Zibin found that the participants' overall performance on the multiple-choice test (71%) was much higher than their performance on the completion test (22%). This suggests that the participants' ability to recognize figurative units exceeds their ability to produce them even though they were given three clues to help them.

The author summed up that there are factors that need to be satisfied to enable EFL learners to produce English figurative devices correctly. They are as following: knowledge of the conceptual bases involved, a good command of English collocational knowledge, and familiarity with the concept of partial synonymy, and continuous exposure to the metaphorical/metonymical expressions in real-life English. She thus suggested some pedagogical implications that may help EFL learners to acquire L2 figurative expressions. One of the suggestions offered to those teaching English as a second language, is that they should expose students to real world examples of metaphors being used by native speakers of L2 (English) such as TV shows and movies (Farah and Bin Moussa, 2007).

Zibin's (2016) studies found that EFL students' ability to use and understand metaphorical expressions is limited. The author outlined the factors that need to be satisfied to enable EFL learners to produce English figurative devices correctly. The primary recommendation is continuous exposure to the figurative expressions in real-life scenarios by native English speakers.

Therefore, a study of the effectiveness of exposure in using video clips of metaphorical expressions (videos are both time effective and easily accessible) for delivering correct meaning of metaphors is a relevant and dynamic response to Zibin's (2016) both studies. This proposed research will examine participants knowledge of metaphors before they are exposed to them on videos and afterwards. Zibin's studies relies heavily on the participants using background knowledge, likely from their own semantic system to infer meaning. This paper, however, investigates the impact of video exposure in giving Saudi EFL learners the correct meaning of metaphors. This should improve their ability in using them in everyday life.

Related studies on increasing EFL learners' awareness of metaphors

Different methods were conducted to raise EFL learners' awareness of figurative expressions, for example metaphors. These attempts noticed the issue of EFL learners' lack of non-literal meaning production or comprehension. This resulted in a problematic issue that warrants an investigation by linguistic researchers.

In addition, varied exposure methods could be taken as ways to improve EFL learners' awareness of figurative expressions. However, non-related studies considered video exposure as a way in raising EFL learners' metaphorical expressions. Instead different cognitive-oriented methods were adopted in studies to show an increase of EFL learners acquiring metaphors.

EFL learners' cognitive styles may play a role in developing their competence of metaphors. The authors Chen, Lin, and Lin (2014) adopted two cognitive-oriented methods, these are instruction adopting conceptual metaphors (CM) and instruction involving metaphoric mappings (MM). They wanted to determine which one of the two instruction methods (CM or MM) would be effective for learners with different cognitive styles (field-dependent cognitive style and field-independent cognitive style) in learning metaphors. Tests of determining learners' cognitive style were taken place and thus they were divided into two groups (FD and FI). The participants were learning English as a second language and were native speakers of Chinese.

Results revealed that learners of field-dependent cognitive style advanced from CM instruction more than MM, where learners of field-independent cognitive style progress better with the MM instruction method. However, the study concludes its discussion saying that MM instruction is recommended to EFL learners in developing awareness of figurative devices. The MM instruction helped learners in providing logical clues that resulted in them extracting and producing metaphoric expressions as required in the study test (Chin, Lin, and Lin, 2014).

Moreover, researchers on idioms shed light on metaphors as a way to learn idiomatic expressions. Idioms are referred to as 'multi-word phrases whose overall meaning are idiosyncratic and largely unpredictable, reflecting speaker meaning that are not derivable by combining the literal sense of the individual words in each phrase according to the regular semantic rules of the language" (Hurford, Heasley, and Smith, 2007, p.328).

Previous claims suggested that idioms can be learnt via conceptual metaphors through the associations of source and

target terms. However, cultural differences of both domains were not taken into consideration and thus failed to accomplish the goal (Chen and Lai, 2013). Therefore, these two authors attempt to bridge this gap by providing the suggestion of metaphoric mappings in learning idioms. This was done by giving EFL participants (Chinese native speakers) a text and required them to extract the idiomatic expressions found there. They were then asked to think about general themes of metaphors for the extracted idiomatic expressions and start to draw linking diagrams between them, in other words they were the metaphoric mappings. This cognitive-oriented method showed that participants' awareness of using idiomatic expressions, as seen in their written essays, increased within the use of creative analogies. The most used expressions by participants are those whose conceptual metaphors are found both in L2 and L1 compared to expressions having different conceptual metaphors.

Literal and non-literal meaning

The relationship between literal and non-literal meaning is considered to be an issue when analyzing metaphors. In the past, non-literal meaning was not given great attention in the field of semantics. This was likely due to the fact that both literal and non-literal meanings are similar in the function of delivering meaning. Another reason is that, non-literal meaning is restricted to specific occasions and subjects, so its use would be limited. However, this has changed in the case of metaphors as they are widely used in everyday language, thus the focus of non-literal meaning turned to be of concern by semanticists (Hurford, Heasley, and Smith, 2007, p. 328).

Initially, non-literal meaning was of consideration because of the dominant use of metaphors that are considered as figurative language. However, recent studies suggested that the relationship between literal and non-literal meaning is no longer distinguished differently. This is due to the occurrence of "conventional metaphoric language" in everyday speech which has made the distinction between the two difficult (Coulson and Oakley, 2005). Therefore, the correlation between literal and non-literal meaning could be one of the issues EFL learners could face in acquiring metaphorical expressions.

III. STATEMENT OF THE PROBLEM

Many EFL learners face difficulties in producing or even understanding metaphorical expressions though it has become an important aspect of modern communication. They lack the knowledge of knowing the meaning of these metaphors and are therefore restricted from the frequent use of metaphors. Therefore, this current study aims to investigate the effectiveness of video exposure of metaphors in delivering the correct meaning to Saudi EFL learners.

IV. RESEARCH QUESTIONS

This study aims to provide answers to the following questions:

1. To what extent do Saudi EFL learners understand the meaning of metaphors in English before they are exposed to them on videos?
2. Does the use of videos have a role in delivering the correct meaning of metaphors in English?

V. PROPOSED METHODOLOGY

Participants

The participants were selected from EFL adult learners (approximately 20 students) who study 'General English' in the preparatory program at King Saud University/ first semester of 2017. They were studying English at Saudi public schools from grade 6 (13 years old), although their English curriculum was limited. Therefore, these participants have had a limited exposure to the English language. Participants' age ranges from 19 to 20.

Research Tool

The main research apparatus will be an experimental design of a pre-test and a post-test, both consisting of 10 multiple choice questions. These questions will be coupled with videos of metaphorical expressions being used in contemporary media (Movies, T.V. Shows, and News etc.). Ten short video clips, no longer than 2 minutes each, will be presented for students before giving the post-test.

Procedure

Participants were asked to answer pre-tests of 10 multiple choice questions of metaphorical expressions within 5 minutes. After answering the pre-test questionnaire, the researcher presented video clips having these metaphorical expressions in them. The post-test was given afterwards for the same participants to answer within 5 minutes. The tests were assessed by analyzing the correct answers of the participants before and after videos exposure.

VI. RESULTS & ANALYSIS

Before Exposure

The students were asked to select the correct meaning of the statements in the table below to assess their understanding of metaphors. The word "metaphors" was not stated in the questionnaire, so the researcher could assess student's ability in recognizing them. The answer varied in meaning, these were either literal or figurative. The results conclusively showed an inability of the participants' knowledge to understand the metaphorical expressions.

The participants' results were generally poor. On average, 2/10 of the questions administered in the questionnaire were answered correctly by the participants. Most of the 20 respondents decided to select literal meaning which shows their inability in recognizing hidden meanings. The correct response to all of the statements provided was to select a non-literal meaning.

Table I: Results prior exposure to the videos

Metaphorical expression	Literal Option	Non-literal Option	Correct answers (Selected nonliteral meaning)	Incorrect answers (Selected literal meaning)
1. 'Diamond in the rough'	A person who is secretly rich	A person having hidden qualities	4	16
2. 'When it comes to complements women are ravenous blood sucking monsters'	Women are monsters	Women like compliments so much	5	15
3. 'Life is your restaurant'	You can have a lot of food	You can have whatever you want in life	9	11
4. 'We are a time bomb'	We are strong together	We are about to turn on each other	8	12
5. 'You are a firework'	You use fire	You have power	13	7
6. 'Life is a gift'	You receive gifts in life	Life is an opportunity	8	12
7. 'You are a mad dog'	You are a mad person	You are aggressive	6	14
8. 'She is a saint'	She works in a church	She is a good person	7	13
9. 'Taking the bull by the horns'	He knows how to ride a bull	He is able to manage life	5	15
10. 'This house is a prison'	A house where criminals are	A house that has not got any fun activities	16	4

It is clear that respondents lack the ability of recognizing metaphors as the number of incorrect responses exceeds that of correct answers. The figurative expression of number one shows a gap as numbers of correct and incorrect answers are significant; 4 correct and 16 incorrect. Another example is shown in the second metaphorical expression (5 and 15 respectively), similarly with statement nine (5 and 15 respectively).

In addition, though the responses of correct and incorrect answers were close in numbers with other metaphor examples, they identify respondents' low perception of metaphors. This is seen through the responses in the metaphor examples of number three (9 and 11), and also of number four (8 and 12). However, the metaphor examples of number five and ten were answered correctly by the majority of participants. The responses were of 13 and 7 for number five, and 16 and 4 for number ten.

After Exposure

After collecting the pre-test questionnaires, the researcher started to expose videos to Saudi EFL participants before giving them the post-test. They were asked to answer the questions in relation to what they have been watching on videos.

The answers show that respondents benefitted vastly with visual demonstrations in understanding metaphors, the average number of correct answers increased to 6/10. Some metaphor examples remained to be difficult to understand for participants as results suggested. They were number seven, eight, and nine.

Table II: Results after exposure to the videos

Metaphorical expression	Literal	Non-literal	Correct answers (Selected nonliteral meaning)	Incorrect answers (Selected literal meaning)
1. 'Diamond in the rough'	A person who is secretly rich	A person having hidden qualities	11	9
2. 'When it comes to complements women are ravenous blood sucking monsters'	Women are monsters	Women like compliments so much	12	8
3. 'Life is your restaurant'	You can have a lot of food	You can have whatever you want in life	16	4
4. 'We are a time bomb'	We are strong together	We are about to turn on each other	17	3
5. 'You are a firework'	You use fire	You have power	16	4
6. 'Life is a gift'	You receive gifts in life	Life is an opportunity	11	9
7. 'You are a mad dog'	You are a mad person	You are aggressive	9	11
8. 'She is a saint'	She works in a church	She is a good person	8	12
9. 'Taking the bull by the horns'	He knows how to ride a bull	He is able to manage life	6	14
10. 'This house is a prison'	A house where criminals are	A house that has not got any fun activities	18	2

Metaphor 1 shows a significant increase in the number of correct answers (11 correct and 9 incorrect) as opposed to the pre-video questionnaire (4 correct and 16 incorrect).

Additionally, metaphor 2 implies an increase in choosing non-literal meaning than literal (12 and 8 compared to 5 and 15).

The highest number of correct answers were seen through metaphors five and ten, the ones that received a positive feedback through pre-test results. They were of (13 and 7) and (16 and 4) in the pre-test questionnaire but improved to (16 and 4) and (18 and 2).

Metaphors seven, eight, and nine received the lowest scores. Though they showed improvement in the number of correct answers, yet the majority of participants did not see the hidden meaning and thus selected literal meaning option. Metaphor 7 improved slightly from 6 correct to 9 correct answers. As for metaphor 8, the improvement was marginal, from 7 correct and 13 incorrect to 8 and 12 respectively. Lastly metaphor 9 scored 5 and 15 and improved in the post-test questionnaire to 6 and 14.

VII. DISCUSSION

Results Prior Exposure

This study was restricted in the number of participants (20 in total) which would be considered inadequate to form any

concrete basis. Also, the participants were mostly from the same age demographic. They therefore had a disposition and an intimate understanding of the videos they were shown. This cultural awareness would enable them to find context clues to aid them in understanding the metaphors. This study did not take into consideration the impact that the same videos would have on mature EFL learners, who did not have the background knowledge of the culture of the language to infer meaning from such videos.

Nonetheless, the results were positive and reinforce the idea that videos aid EFL students in understanding metaphors, metaphors an essential component when communicating in contemporary English.

Most participants showed poor performance in the pre-test questionnaire in understanding the correct meaning of metaphors. Metaphor examples one, two and nine had the lowest number of correct answers. These were of type three metaphors as defined by Charteris-Black contrastive metaphorical model, this meant that they were of different conceptual basis but similar linguistic forms in English and Arabic. Zibin (2016) identified this issue when she assessed participants' receptive knowledge of metaphors and noticed that the lowest scores were of type three due to conceptual basis difference.

Regarding the metaphorical example of number two, the language used in this metaphor played a role in failing to deliver the correct meaning of the figurative expression. Words such as 'ravenous' and sucking' were not completely understood by the participants who had a limited knowledge of English due to their short experience of learning the English language in Saudi public schools.

Moreover, the two metaphorical examples that received significant positive feedback in both periods of pre-and post-tests were numbers five and ten. These two metaphors are considered to be of type two. This is when the metaphor has equivalent conceptual basis and similar a linguistic form in English and Arabic. Actually, these two metaphors are widely used in Saudi Arabia and thus participants were at ease in finding the equivalent in their native language. This is in agreement with Chen and Lai (2013), they found that most of participants' writing of idiomatic expressions, based on the cognitive method of metaphor mapping, were due to whose conceptual metaphors are found both in L1 and L2.

Metaphor 8 scored a low response due to cultural differences. The word 'saint' would be an easy word to know if students had a background knowledge of the beliefs and principles practiced in the foreign language society. Participants thought that selecting the literal meaning of a woman being in a church would be correct because of relation to cultural life. Therefore, the participants failed to uncover the hidden meaning of the metaphor. This figurative expression is of type six that has different conceptual basis and different linguistic expression. In the study of Zibin (2016) this particular type received low scores (52 %). Both Saudi and Jordanian cultures are similar in many ways emphasizing the agreement of this current study's results with Zibin's (2016).

Regarding metaphor 3, the majority selected literal meaning, yet they scored a high rate of correct answers compared to the others except for examples 5 and 10. Participants linked the words 'restaurant' and 'life' to the idea that everything you wish is available. They likely avoided the second option because of the absence of the word 'life' illustrated in the example itself. Leading them to choose the other option where the words 'life' and 'restaurant' were both found.

The same happened with metaphor number 7 but resulted in an opposite outcome, respondents preferred to select the literal option because the word 'mad' was found both in the metaphor and the option.

Furthermore, metaphors number 4 and 6 scored the same number of total correct answers of 8. The word 'bomb' implies power, therefore leading students to pick the literal meaning of 'strong'. As for metaphor 6, the word 'gift' was stated both in the metaphor and the option. Therefore, students selected the literal meaning rather than the non-literal.

Results after Exposure

Post-test results showed an increase in the number of correct answers due to exposure. The more clues seen in the video exposure the more improvement of getting the meaning of metaphors by participants.

Metaphors 5 and 10, received positive feedback from the beginning and increased more during the post-test questionnaire, the video exposure of these two metaphors provided enough clues to EFL learners to get the meaning of the expressions.

As for number five, the video indicates a person who shoots fireworks towards the face of an enemy with courage. This made the results reach a number of 16 compared to 13 in the pretest questionnaire. As for metaphor 10, the scene showed that a father punished his brothers by not allowing them to watch TV for a week, consequently one of the boys complains saying 'this house is a prison'. Participants received the meaning by linking TV to be of the fun activities stated in non-literal meaning option. The score of this metaphor jumped to 18.

Furthermore, Metaphor 1 received 4 correct answers in the pre-test period, after exposure it improved to be of 11. This was a significant improvement. During the video, the speaker repeated their desire to find one unique person, in a longing and lustful tone prior to uttering the metaphor.

Furthermore, visual demonstrations were helpful also in the case of example number two. During the exposure of this metaphor, the expression "life is your restaurant" was said by a blue 'Jinni' who is capable of granting wishes to a poor boy, whilst presenting him with many different bounties. Thereafter participant's scores increased to 16 from 9. The video clip of this metaphor is from a well-known film cartoon; thus, students knew in advance the role of this 'Jinni' in the film. The concept of a 'Jinni' is common in many cultures.

Metaphor number 6 received 11 correct answers pre-exposure, it improved to 14 correct answers only. This is due to the shortage of clues seen in the video. The speaker uttered this figurative expression followed by a talk of how you should get use of life. Participants may have linked the idea that receiving gifts is one way to enjoy life resulted in a slight increase of the correct responses.

Interestingly, metaphor number 4 contained an implicit negation. The speaker in the video clip explicitly said "we are not a team" followed right forward by the metaphor "we are a time bomb". This explained the increase from 8 to 17 correct

answers. Negation was beneficial for participants in determining the correct answer.

As for metaphor 2, the speaker in the video mentioned the metaphor whilst also repeating the word 'more' this affirms the correct explanation of 'when it comes to compliments women are ravenous blood sucking monsters". This raised the score of non-literal meaning answer into 12 from 5.

Metaphor numbers 7, 8 and 9 scored the lowest scores. The video exposure of these metaphors did not indicate enough clues to deliver the correct meaning of the expressions. However, slight improvement can be seen through results.

As for metaphor 7, the addressee showed an annoyed reaction and threatened the speaker not to call him that again 'you are a mad dog'. The score therefore increased two points only as evidences were barely seen in the video.

The video coupled with metaphor 8 showed a discussion between two individuals. One individual spoke badly about a woman called Dorothey, and the other speaker showed a disagreement and uttered ' she is a saint'. Participants faced a difficulty in understanding the word 'saint' and therefore thought it to be of cultural context i.e. 'she works in a church'. This explained the very slight improvement in results.

In addition, metaphor 9 showed also a weak increase. The video exposure of the metaphor contained a picture of the speaker who uttered the metaphor riding a bull. However, the context of the video was slightly vague as the video contained a bull and therefore confused the participants who selected the literal meaning.

VIII. CONCLUSION

This study was conducted to explore the extent of Saudi EFL learners' ability in understanding metaphors before they are exposed to them in videos. It also aimed to discover the role of visual exposure in delivering the correct meaning of metaphors to EFL learners. This attempt took place due to the evident disability seen in EFL learners with respect to producing and comprehending metaphorical expressions. Results suggested that Saudi EFL learners, through the pre-test questionnaire, showed a poor performance in understating metaphors. This is due to their

selection of literal meaning rather than non-literal. Most of the results after video exposure increased significantly implying that videos play an essential role in delivering the correct understanding of metaphors.

One of the major limitations of this study was the limited number of participants. Using a small sample of only 20 participants is insufficient to form a solid pattern. Also, most of the participants were young adult learners. This restricted demographic may have a greater understanding of the video's that were provided, most of which stemmed from popular western culture. How these videos would shape the understanding of mature EFL students is yet to be seen.

Metaphors are of important use that they become to be of literal meaning in everyday speech (Coulson and Oakley, 2005). Therefore, this area is essential for further investigation in the Saudi context with participants of a higher knowledge of the English language and more diverse backgrounds.

REFERENCES

[1] G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in *Plastics*, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64.

[2] W.-K. Chen, *Linear Networks and Systems* (Book style). Belmont, CA: Wadsworth, 1993, pp. 123–135.

[3] H. Poor, *An Introduction to Signal Detection and Estimation*. New York: Springer-Verlag, 1985, ch. 4.

[4] B. Smith, "An approach to graphs of linear forms (Unpublished work style)," unpublished.

[5] E. H. Miller, "A note on reflector arrays (Periodical style—Accepted for publication)," *IEEE Trans. Antennas Propagat.*, to be published.

[6] J. Wang, "Fundamentals of erbium-doped fiber amplifiers arrays (Periodical style—Submitted for publication)," *IEEE J. Quantum Electron.*, submitted for publication.

AUTHORS

First Author – Reem Alotaibi, Department of English Language and Literature, Faculty of Arts, King Saud University, Riyadh, Saudi Arabia