Hawlyat Al-Montada

A Refereed Quarterly Peer - Revewed Jurnal for Academic Promotion

No.43 - July - 2020

On Mental Spaces Grammar . The Example of Roles and Multiple Connectors in Standard Arabic

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1.Introduction

The theory of mental spaces was initiated by Gilles Fauconnier in 1994 with the publication of his book Mental Spaces: Aspects of Meaning Construction in Natural Language. **It focuses on people's psychological operation in meaning construction.**

The theory of mental spaces is a reaction against the traditional approaches to the study of meaning. It fires the imagination of cognitive linguists because it sheds light on a wide range of linguistic phenomena such as reference, conditionality, metaphor and compositionality (Lee, 2001).

This theory presents a consolidated and constant way of understanding of reference, co-reference, and the comprehension of stories as well as real, historical, imagined, hypothetical and remote descriptions. Mental spaces are of four types: the first are time spaces, which are singled out by temporal adverbials, tense, and aspect, the second are space spaces(sometimes called geographical spaces) that are indicated by locative adverbials and adverbs of movement, the third are domain spaces, which have got something to do with work, games, and scientific experiments, and the fourth are hypothetical spaces indicated by conditionals, hypothetical and unrealized possibilities, and suggestions for plans and speculation (Stockwell, 2002) .

Mental spaces offer mechanisms to talk about cognitive structures and the way they are connected together, possible worlds, referring to partial and complete world or situation constructions, and to a mixture of non-world-like structures, and how they are connected and mapped onto other cognitive structures (Dancygier and Sweetser,2005).

Mental spaces study quantifier scope, referential opacity, presupposition projection, and counterfactuals (Fauconnier, 1994). Besides, as Fauconnier and Turner (1998) claim, mental spaces, in their nature, are the input structures, generic structures, and blend structures in the network. Mental spaces are therefore considered small conceptual packets constructed as humans think and talk, for the sake of local understanding and action. They are assemblies-like containing elements and are structured by frames and cognitive models.

Mental spaces burgeon in and map onto each other in complex ways, and provide mental structures for acknowledging viewpoint and focus, and for elaborating, via drawing on partial and simple structure, a net of connections both in working memory and long term memory. To put it differently, they operate in working memory by activating structures available from long-term memory (Fauconnier, 2006).

Mental spaces are very partial structures, and , in the words of Dinsmore(1991:49), each space '' represents some logically coherent situation or potential reality, in which various propositions are treated as true, objects are assumed to exist, and relations between objects are supposed to hold.'' The partition is metaphysical in nature, whereas portioning in the mental spaces theory is cognitive in the sense that the configurations of mental space are not consistent, but rather undergo modification.

2. Roles and Multiple Connectors

Roles and multiple connectors are divided into pronouns across spaces, multiples connectors, and multiple counterparts. In pronouns across spaces, when connecters bind elements in contrasting and divergent spaces, they are said to be open.

Since they are open, a pronoun, when accompanied with its antecedent in one space, can freely determine its counterpart in a connected space. As for multiple counterparts, in a simple clause, a connector is able to yield more than one element counterpart in a single element (Fauconnier, 1994).

2.1 Roles

So far, the noun phrase has been seen as elements pointer (whether they are objects, individuals, etc.). This classical approach is covert in the ID Principle and overt in principles (1) Indefinite Interpretation, and (2) Definite Interpretation. However, this classical approach is no always adequate; definite descriptions are in possession of many lineaments advocating a treatment by virtue of functions (roles) instead of direct reference (Fauconnier, 1994).

2.2 Indefinites

In principle (1), Indefinite Interpretation, the indefinite article was seen as an overt mean of setting up new elements in spaces; intermingled with the standard properties of trigger–target configuration. Indefinite descriptions are akin to definite ones in the sense that they can set up roles as new elements and identify the role itself or its value in some space (Fauconnier, 1994).

Indefinite Interpretation (principle 1) holds that, to quote Fauconnier (1994: 20) in length,

The noun phrase a N in a linguistic expression sets up a new element w in some space, such that "N"(w) holds in that space. In contrast to indefinite descriptions that set up new elements, the direct function of definite descriptions is to point out elements already there (though this may also result, albeit indirectly, in setting up elements).

Definite Interpretation (principle 2), on the other hand, holds that, to quote Fauconnier (1994: 20) ,

a. The noun phrase the N in a linguistic expression points to an element a already in some space M, such that "N"(a) holds in that space.

b. If N is a proper name, the noun phrase N points to an element a already in some

space M, such that N is a name for a in M.

2. 3 Names and Roles

Unlike the definite description, which explicitly shows a role, a proper name does not, unless some specific pragmatic conventions apply (e.g. naming a place where the president lives, etc.). If such conventions happen to be there, proper names will behave as roles (Fauconnier, 1994).

3. Roles and Multiple Connectors

This section details the sub-categories of roles and multiple connectors in the Arabic language. These are pronouns across spaces, multiple connectors, and multiple counterparts.

3.1 Pronouns across Spaces

Arabic connectors are open when they blend elements in contradictory and conflicting spaces. Thus, when a pronoun associates its antecedent, it freely yields its counterpart in an affiliated space. In Arabic example below, the reflexive pronoun نفسها freely identifies its counterpart in another connected space.

1.شعرت ليلى نفسها مريضة

Layla felt herself ill.

3.1.1 Multiple connectors

Multiple connectors pertain to two roles: the main role is برادلي هيوم , and the minor role is the one that is acted by برادلي هيوم himself. The real برادلي هيوم is marked by R, and المسلسل M. R 's connector is F_i and M 's connector is F_d.

2. احب برادلي هيوم نفسه في المسلسل

Bradley Hume liked himself in the series.

This clause is diagrammed in Fig.1.

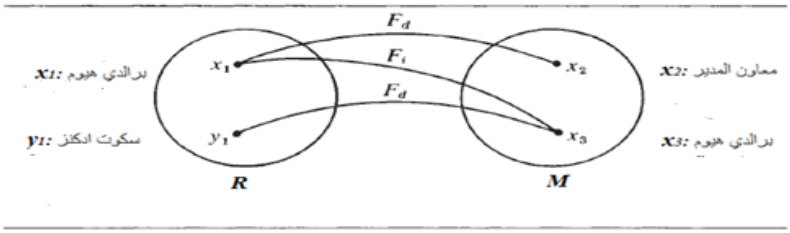


Figure (1) based on Fauconnier (1994:36)

Clause (2) has it that برادلي هيوم liked the Assistant Manager or the role played by سكوت ادكنز (Scott Adkins). In reality, برالدي هيوم is سكوت ادكنز; moreover, because $x_1 = x_2$, سكوت ادكنز is also the assistant manager. This entails $x_2 = x_3$, but they are not connected. If, in the series, the Assistant Manager bickered over برالدي هيوم, this clause would give us two readings; either (3) or (4).

3. في المسلسل، تشاجر مساعد المدير مع برادلي هيوم

In the series , the Assistant Manger bickers over Bradley Hume.

4. في المسلسل، تشاجر سكوت ادكنز مع نفسه

Obtained by the connectors, the clause in (4) is schematized as follows

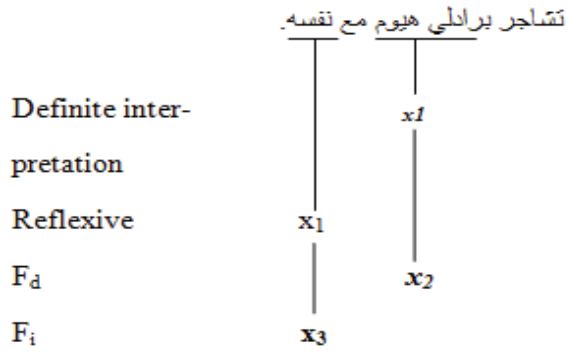


Figure (2) based on Fauconnier (1994: 37)

3.1. 2 Multiple Counterparts

In a simple clause, a connector is able to yield more than one element counterpart in single element: if it does not come Nabeel's knowledge that Mazin is his neighbour, then the element R (= مازن= جار نبيل الجديد) possesses two counterparts in M (SBM = يعتقد نبيل), as shown in Fig.2.

5. يعتقد نبيل ان مازن يعيش في بغداد

Nabeel thinks that Mazin lives in Bagdad.

6. يعتقد نبيل ان مازن يقوم بالضوضاء
Nabeel thinks that Mazin makes noise.

7. يعتقد نبيل ان جاره الجديد يعيش في بغداد

Nabeel thinks that his new neighbour lives in Baghdad.

sentences (5) through (7) are true if the interpretation under which the ID principle applies to the trigger a or to one of the two targets a'_1,a'_2

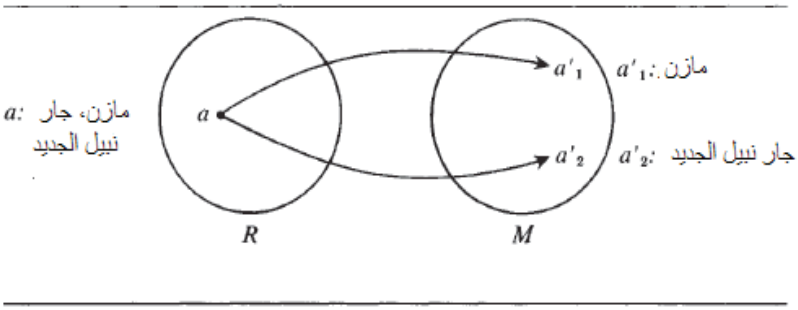


Figure (3) based on Fauconnier (1994:38)

3.2 Roles

Whether they are objects or individuals, the noun phrases are elements pointer. Classically, this account is not always satisfactory because definite descriptions are in possession of many lineaments advocating a treatment by virtue of functions (roles) instead of direct reference. All the given clauses read that the noun phrases point out to one single element. In clause (8), the noun phrase refers to the رئيس الوزراء العراقي individual who rules the country; in clause (9) كلماتك keep (try; in clause (10 taking on different choices; are ورقُ الشَّجر, (in clause (10 evergreen for years on end; in has got the الأرضُ, (clause (11 same interpretation of that in (10)).

8. يتغير رئيس الوزراء العراقي كل اربع سنوات

The Iraqi premier changes every four years.

9. كلماتك مختلفة

Your words are offbeat.

10. اخضرَّ ورقُ الشَّجر (https://www.almaany.com/)

The tree leaves became greenish.

11. اخضرَّتِ الأرضُ (https://www.almaany.com/)

The earth became greenish.

Those noun phrases have acceptable and salient readings; for (8), هناك رئيس وزراء (there is a premier every four years); for (9), انت دائما تتلاعب بالالفاظ (you always play on words); for (10), هذه العام ازداد ورق الشجر اخضرارا (this year's leaves are greener than last year's); for (11), من العام الماضي الارض اكثر اخضرارا (the earth is more greenish than the last year).

These clauses are not genetically, universally, and equivalently quantified:

8. ∀ x (x =رئيس الوزراء) (العراقي (x يتغير كل اربع سنوات)

9. ∀ x (x= كلمات,ك) (x مختلفة)

10. ∀ x (x=اوراق الشجر) (x اخضرت)

11. ∀ (x =الارض) (xاخضرت)

P(r) property of a role

P{r(m)) property of a value of that role

12. المحافظون ان المقترعين البريطانيين يريدون ضبط الهجرة الى داخل المملكة ويعتقد (www.arapicorpus.com)

And Conservatives think British voters want to control immigration to the United Kingdom.

Space–builder يعتقد المحافظون

Prediction P '' يريدون ضبط الهجرة الى داخل المملكة''

Role r المقترعين البريطانين

Clause (12) has two readings:

a. P (r) holds in M

b. P (r (M)) holds in M

where P represents the prediction(e.g., '' يتغير كل اربع سنوات '', '' مختلفة '',''

اخضرتّ '', '' اخضرَّتِ '' , '' المقترعين البريطانيين يريدون ضبط الهجرة الى داخل المملكة ان '') r the definite description role function (e.g., رئيس الوزراء العراقي, كلماتك, ورق الشجر , الارض , المحافظون, and m the relevant contextual parameters in the domain of r الوقت , المكان, التنظيم.

13. المعلمة بيضاء، لكن ساطع يظن انها حنطية

The schoolmistress is white, but Sati' thinks she is corny.

If the space configuration that corresponds to the example in

(13) is taken into consideration, its interpretation proceeds in several steps: العلمـة is interpreted as role r, and هي has given the same interpretation by ordinary pronominalisation. The value interpretation, then, pertains with respect to the appropriate space, as depicted in Fig. 4.

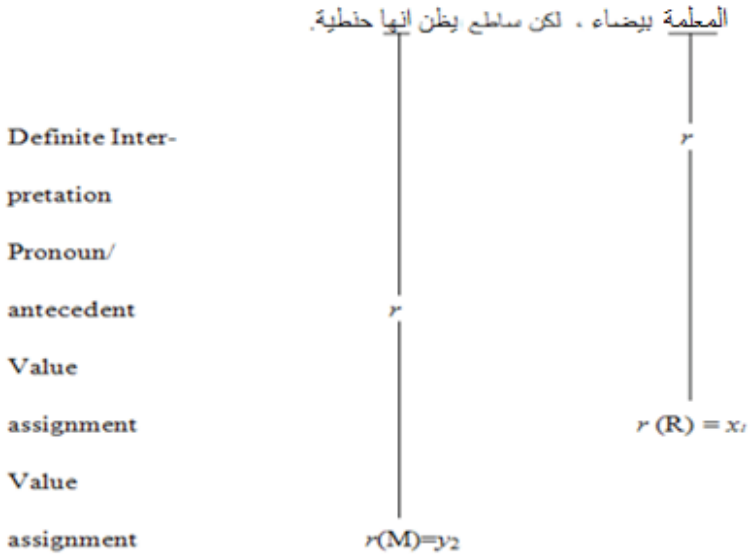


Figure (4) based on Fauconnier (1994: 44)

If P and Q are taken to represent the properties "ابيض" and "حنطـي, " the interpretation will be something like:

P(r(R)) but Q(r(M))

Hiba is white, but Sati' thinks she is corny.

14. هبة بيضاء، لكن ساطع يظن انها حنطية

Figure (5) based on Fauconnier (1994:44)

Contradictorily, the example in (14) shows that the proper names are interpreted as values, and not as roles (functions). This is considered wrong because names behave like other properties: (14) is possible to be used in a situation in which the speaker is not sure which person is called هبة, to spell out that ساطع is mistaken about her identity. Thus, the role becomes r' (هبة). The example in (14) is depicted in Fig.6.

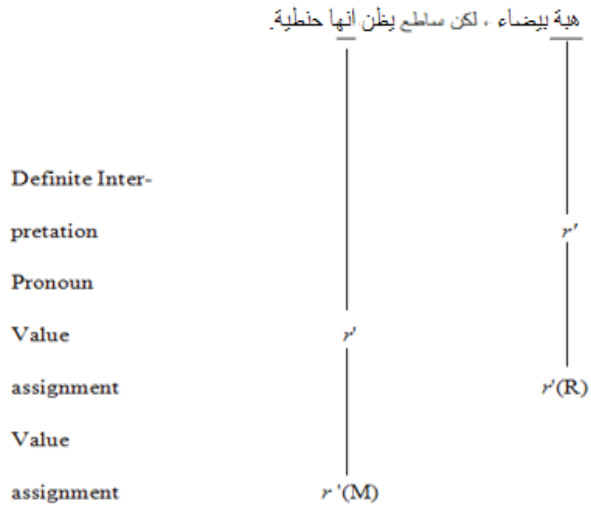


Figure (6) based on Fauconnier(1994: 45)

Additionally, (14) has a transparent reading represented in (15). Its interpretation proceeds in Fig.7.

15. المعلمة بيضاء، لكن ساطع يعتقد انها حنطية

The schoolmistress is white, but Sati' thinks she is corny.

Figure (7) based on Fauconnier (1994:44)

The example in (15) is further diagrammed in Fig. (8). Fig. 8 gives it two readings. The first reading corresponds to (المعلمة), as a property of role r . It does not require that r {M} be definite, that is, that r have a value in M a particular معلمة in the mind of ساطع; nor does it require ساطع to think that there معلمة.

The second reading has it that (15) corresponds to a property of the value of r in M, r(M). ساطع establishes المعلمة that has the property P. In space M هبة is replaced by زينب.

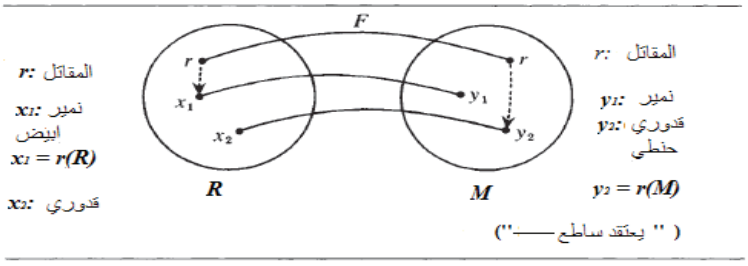


Figure (8) based on Fauconnier (1994:43)

(15) also reads that:

P(g') holds in M

The situation in (16) is set in Iraq, a republic with a premier. استبرق believes that the head of the state is a king who rules the republic of Iraq, and she is also aware of the presidential system but does not regard the premier as the head of the state. If she believes that the premier changes every six years, (16) is reported by a more republican.

16. تظن استبرق ان رئيس الدولة يتغير كل ست سنوات

Istabraq thinks the head of state changes every four years.

17. تظن استبرق ان رئيس الدولة يتغير كل عشرة سنوات

Istabraq thinks the head of state changes every ten years

Transparently and opaquely, six roles are given to (16) and (17

$$\left\{\begin{array}{l} f\text{(رئيس الدولة)} \\ g \quad \text{(الوزير)} \\ k\text{ (الملك)} \end{array}\right\} \text{ in R and its counterpart } \left\{\begin{array}{l} f' \\ g' \\ k' \end{array}\right\} \text{ in M}$$

There are different equalities hold in R and M:

f= g (in R)

f ' = k ' (in M)

(16) expresses:

Q (f') holds in M

18. يعتقد وسام انه سيتزوج خادمته

Wesam believes he will marry his maid.

Space M in (R) is set up by يعتقد وسام; خادمته correlates to role r in R along with counterpart r' in M. (18) also assumes that it does not come to Wesam's knowledge who his maid is: there is no value for r' (M). خادمة وسام is taken to be منى , so r (R) =منى . This sentence lets P represent the prediction انه سيتزوج . خادمته is a linguistic description of r, of r', and of r (R). Listed below Fig. 9 are the three possibilities (18) has got.

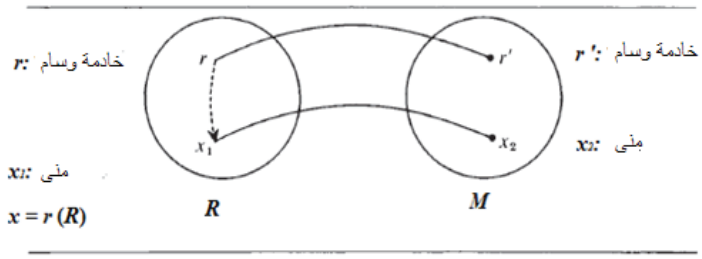


Figure (9) based on Fauconnier 1994:49)

As far as (18) is concerned, the first two possibilities fall apart. This expresses either of the following propositions:

P(r') (**Attributive and opaque reading: يعتقد وسام انه ايا كانت خادمته ستكون زوجته ايضا**)

P(x2) (**Referential and transparent reading: يعتقد وسام انه سيتزوج منى; utterer gives description "خادمته," inappropriate in** M)

If r'(M) **were supposed to have a value in M, recognizable from** x2, **then وسام would have taken another woman (say وردة Warda) to be his maid, as shown in Fig.5 . A fourth interpretation of his maid is obtained, id est** r' (M):

خادمته

describes

identifies

((a–c) as in the previous three possibilities))

d. r' (M) y2 (= r' (M))

A third reading is now available:

P(y2) (**Referential and opaque reading: يعتقد (التي اتخذها خادمة وسام انه سيتزوج وردة**)

This reading is diagrammed in Fig.10.

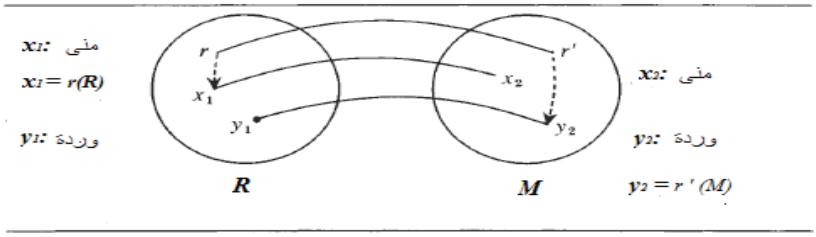
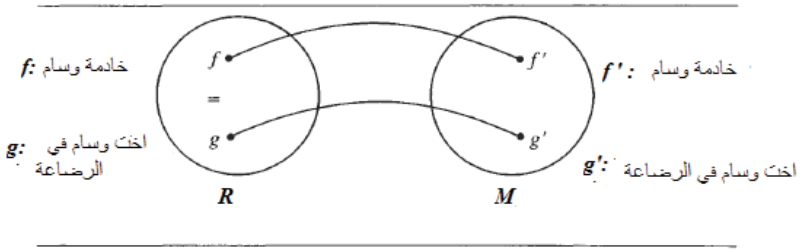


Figure (10) based on Fauconnier

(1994: 50)

As another interpretation, it is true for the speaker, but not for وسام considered by the speaker, that اخت وسام is في الرضاعة necessarily اخته (f). As such, خادمته is an accurate description of g **in** R **and may identify** g' **in** M. **Thus, the fourth reading is:**

P(g') **(Attributive and transparent reading: يعتقد وسام انه سيتزوج اي كانت اخته في الرضاعة)**



Figure(11) based on Fauconnier(1994:51)

6.4 Indefinites

The indefinite article is explicit, so reads principle (1), in setting up new elements. Its explicitness makes definite descriptions akin to definite ones, since they both set roles as new elements and identify a role or its value.

19. الخلافة العثمانية، هي امبراطورية اسلامية اسسها الخليفة الشاب عثمان الاول بن ارطغرل

The Ottoman Caliphate is an Islamic empire founded by the young caliph Osman I bin Ertugrul

20. عثمان بن ارطغرل حاكم عثماني

Osman I bin Ertugrul is an Ottoman caliph.

21. هو طبيب نمساوي من أصل يهودي

He is a Jewish–Austrian doctor.

(19) reads that a role r is set up from the Ottoman Caliphate founders to an individual called Osman I bin Ertugrul. Another reading is that there is a valid, definite description of r which has it that '' الخلافة العثمانية اسسها عثمان الأول بن ارطغرل''. The noun phrase عثمان بن ارطغرل in (20) identifies the value of r in spaces M_1 and M_2 , $r(M_1)$ and $r(M_2)$. The pronoun هو in (21) identifies role r.

A final reading of (19) is that it takes up one of the founders of the Ottoman Caliphate who happens to have the property '' شاب '' . This is the straightforward interpretation given by the Indefinite Interpretation: with the relevant properties a new object is set up.

22. يعتقد جمال انه سيتزوج احدى أقاربه

Jamal believes he will marry one of his relatives.

Following the Indefinite Interpretation, احدى اقاربه has the feasibility of setting up a new element in R with the property ''اقارب جمال'' or a similar element in M. Here are two configurations: the first configuration is in harmony with يعتقد جمال انه سيتزوج دينيز، لكنه لايعلم انها احدى اقاربه , and the second configuration is compatible with يعتقد جمال انه سيتزوج دينيز وهي اقاربه . Only the first configuration calls for and necessitates existence for the speaker.

احدى اقاربه also sets up a role where no real values are indentified by (22). Q ,which stands for the property ''انه سيتزوج'', holds in M if r is set up in M. This leads to a nonspecific and "attributive" reading: يعتقد جمال انه ايا من سيتزوجها ستحمل صفة القريبة (Jamal believes whomsoever he marries will have the property of being his relative), in effect specifying additional properties of r.

23. تريد فاطمة ان تتزوج من مليونير

Fatima wants to marry a millionaire.

Mentally, this clause is broken down as follows:

Space–builder تريد فاطمة Fatima wants (space M,

origin space R)

Property P '' فاطمة تتزوج ''
(Fatima marry)

Role r

or مليونير millionaire
(property Q)

element x

24. إنديا روز جيمس مليونيرة بريطانية
(https://newspaper.annahar.com/.../613389-)

India Rose James is a British millionaire.

25. يعتقد مراد ان ساحرا اشقى الحصان، و يعتقد احسان انه قد قتل الماعز

Murad believes that a wizard has blighted the horse, but Ihsan believes that he killed the goat.

The sentence in (25) overtly sets up two spaces: M_1('' يعتقد مراد''), M_2(" يعتقد احسان"). ساحر functions as an element setter in R with counterparts in M_1 and M_2 . But it also functions as a direct element setter in M_1 with a counterpart in M_2.

Finally, it serves as a role r setter in M_1 with a counterpart r' in M_2 , such that (ساحرا r and تسبب في شقاء الحصان r and قتل r' الماعز or r' (M_2) . The examples in (25) and (26) have got six diagrammes to determine their mental-space structures.(see Figs. 12 through 17).

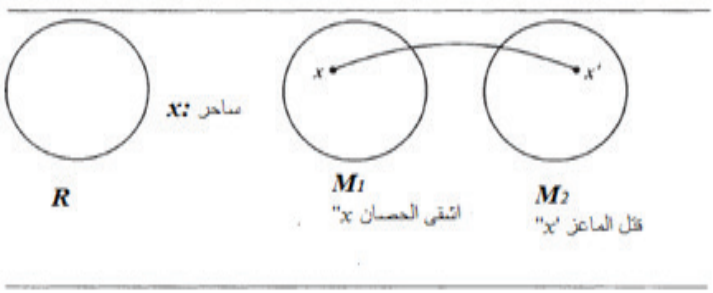


Figure (12) based on Fauconnier(1994:59)

26. الكل يعتقد بان ساحرا اشقى الحصان witch has blighted the horse.

Everybody believes that a

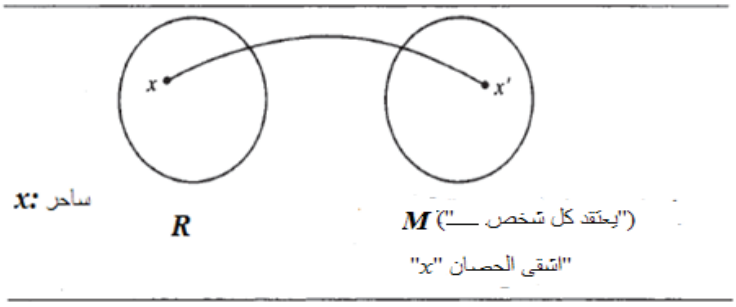


Figure (13) based on Fauconnier(1994:60)

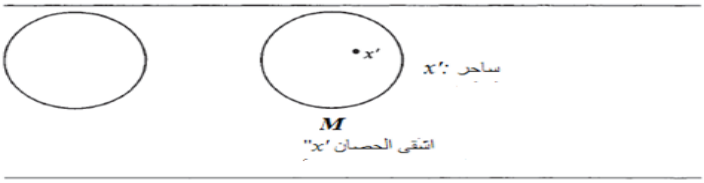


Figure (14) based on Fauconnier(1994:60)

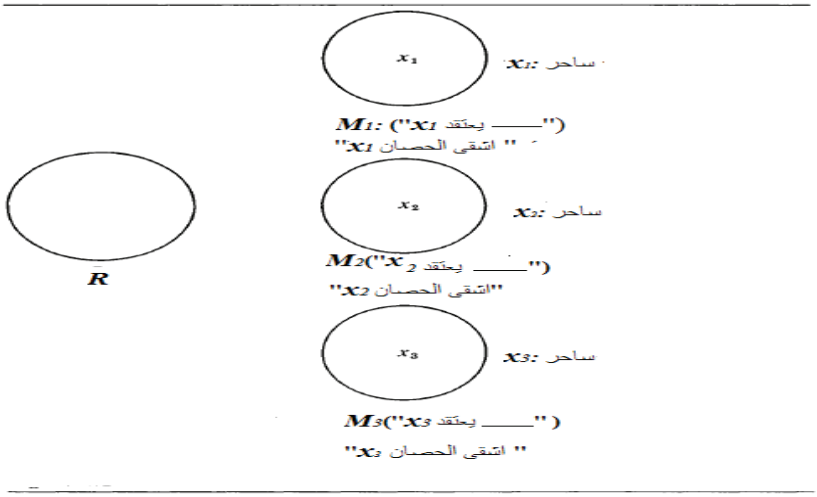


Figure (15) based on Fauconnier(1994:61)

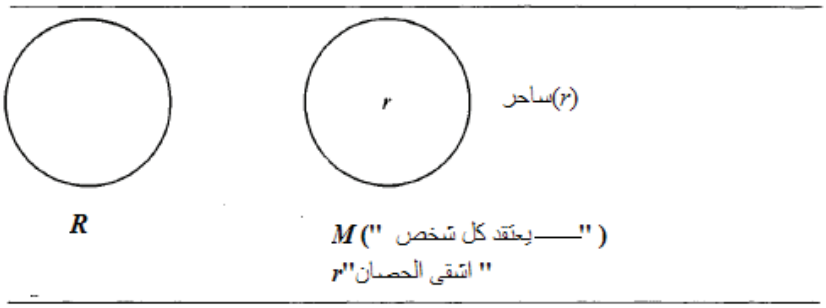


Figure (16) based on Fauconnier(1994:61)

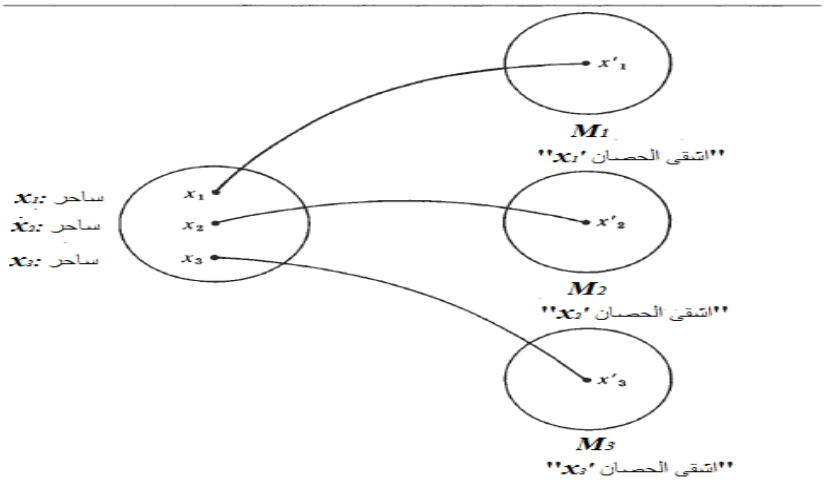


Figure (17) based on Fauconnier(1994:62)

3.3 Names and Roles

A proper name does not overtly identifies a role like the definite description. Only in one case a proper name explicitly behaves as a role when specific pragmatic conventions pertain to it.

27. ارغب بأن يكون محمد اخي

I wish Mohammed to be my bother.

This simple sentence is of five interpretations. The first is that r the role stands for a child named محمد , and r' the role stands for my brother. The sentence in (27) could mean that I wish my parents had had a child before anyone

else: that I wish r and r' had taken the same value. This wish is formed regardless of individuals who occupy these roles in reality.

The second interpretation has it that there is a real person called محمد whom I wish to be my brother, that is, he occupies r'. Here are two readings: neither does it matter if I have/not a brother; nor does it matter that محمد happened to be born.

The third interpretation reads that if it had supposed that I had a brother named امير, 27)) could have indicated that I wish امير had been first born. This requires me not to know the real محمد. In fact, I wish the value of r' had been the value of r.

The fourth interpretation centres on the assumption that I know محمد and امير. In this case, clause (27) can be used to indicate that I wish both محمد and امير had been one at the same time.

The fifth interpretation does entail that I may know both of them, and I wish that محمد had been امير, but that امير had been someone else.

28. أأمل ان تصبح سونة اكثر هدوءا

I hope that Suna will be more quite.

سونة is the name given by people who own the cat.سونة does not only correspond to the cat who happens to be in a playful mood, but to the role of my son's cat. Under the value interpretation, (28) represents a particular cat currently is in a playful mood. Under the role interpretation, (28) indicates the successive cats.

29. ظن سامر بأن نمير هو نفسه مراد

Samir thought that Nameer was Murad

Sentence (29) has two readings: (i) سامر did not think that نمير and مراد were similar; (ii) what سامر did was think that الشخص الذي طرق الباب was مراد that مراد rather than نمير was occupying the role '' الشخص الذي طرق الباب''. But since الشخص الذي طرق الباب was 29) (نمير, is taken to be equivalent to " يعتقد سامر ان الشخص الذي طرق الباب هو مراد ''; that is, سامر takes نمير to stand for نمير actual role, '' الشخص الذي طرق الباب.''

30. ظن سامر ان الشخص الذي طرق الباب سيذهب الى بغداد

Samir thought that the person

who knocked the door would go to Baghdad.

31. ظن سامر بأن مراد درس اللغة الالمانية

Samir thought that Murad studied the German language.

32. ظن سامر بان الشخص الذي طرق الباب درس اللغة الألمانية

Samir thought that the person who knocked the door studied the German language.

33. ظن سامر بأن نمير درس اللغة الالمانية

Samir thought that Nameer studied the German language.

There is a sort of misconception in these sentences because there is a difference between (30) and (33): in (30) the role door knocker is sticking out(traditionally speaking, the reading is attributive); but in (33) the role is identical and does not pertain to a German student (traditionally speaking the reading is referential).

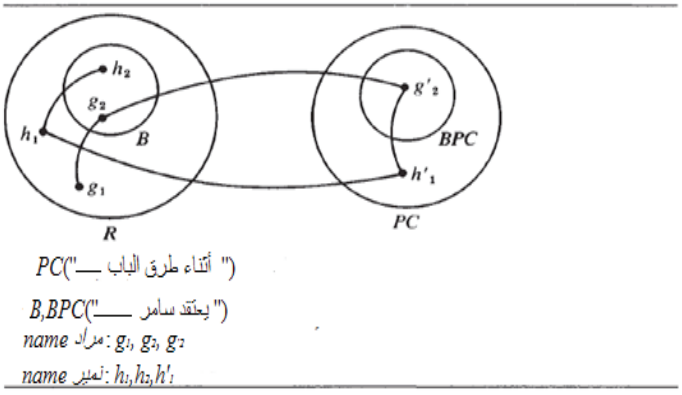


Figure (18) based on Fauconnier (1994: 69)

It is grammatically possible to preface all the relevant examples with the adverb اثناء طرق الباب, which is a space-builder. They are relative to PC, which is a particular space. Fig. 18. that نمير and مراد are not connected in R and B, but their counterparts in PC are bound, and they take up corresponding roles (r:طارق الباب» ‘’). BPC is the counterpart of B in PC : optimization performs to make these counterpart spaces

as structurally identical as possible, so نمير in B **will have the same properties as مراد in** BPC.

What (29) is is about ''h'$_1$'' in PC **has the counterpart g'$_2$ in** BPC, **where** h'$_1$ **is the counterpart in** PC **of** h_1 **in** R, **and** g'$_2$ **is the counterpart in** BPC **of** g_2 **in** B, **and** g_1 **in** R. '' **The ID principle gets** h'1 **and** g'2 **identified by the names of their counterparts** h_1 **and** g_1. **The relevant spaces that are indicated by space-builders are linguistically schematized as follows:**

Given SBPC = اثناء طرق الباب , SBBPC= سامر اعتقد , **name of** h'1'' = نمير, **and '' name of** g_1 '' = **مراد, this schematisation comes out as:**

34. اثناء طرق الباب، اعتقد سامر ان نمير هو نفسه مراد

While knocking the door, Samir thought Nameer was Murad.

Similar to (29), given the property F= '' '' يذهب الى بغداد (29) ,) expresses ''F (g'$_2$) (in BPC). **Linguistically, this gives:**

35. اثناء طرق الباب، اعتقد سامر بان نمير سيذهب الى بغداد

While knocking the door, Samir thought Nameer would go to Baghdad.

It is noted that the ID Principle does operate recursively in (35): from h_1 **to** h'$_1$ **and then to** g'$_2$ **identification goes. Since there is no disorientation in the mind of سامر about نمير and مراد,** g'$_2$ **is not a counterpart in BPC of** h_2. **There is only an error about which is which during the door knocking.**

36. في ذلك العمل المسرحي ، تحمل ليلى طفلا

P(b) Pl

In that play, Layla carries a baby.

37. في عرض اليوم، حملت ليلى طفلا

P(c)/ Pe

Or by ID Principle Pe **to** T

P(d)/T

In today's performance, Layla carried a baby.

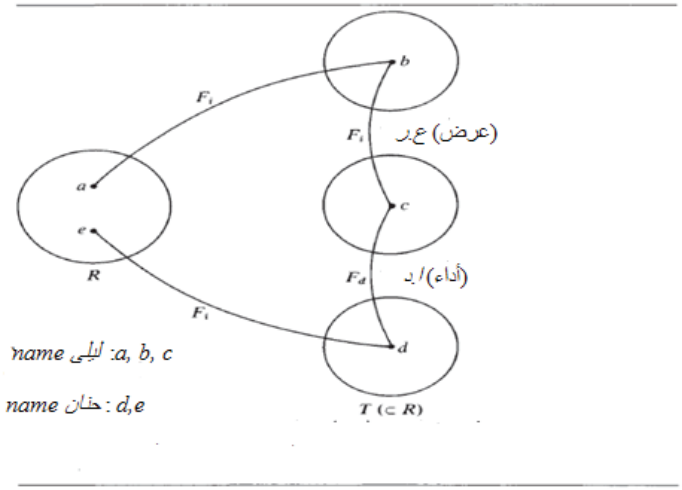


Figure (19) based on Fauconnier (1994:74)

38. طفلا في المسرحية ،حملت حنان

In the play, Hanan carried a ba by.

These clauses indicate that the ID Principle operates bidirectionally on Pe **and** T

E (d)/ T

or

E (c)/ Pe

39. في مسرحية بيت الدمية لهنريك ابسن ، كانت اني ماري عاطفية

E(b)/Pl (**E**= ‘‘**very emotional**’’)

In Henrik Ibsen’s A Doll’s House, **Anne Marie is emotional.**

In Henrik Ibsen’s **A Doll’s House, Kristine Linde was emotional.**

This suggests that the link between Pl **and** Pe **be unidirectional.**

41. تبدو كرستين لندا وكأنها اني ، ماري في مسرحية بيت الدمية لهنريك ابسن

(**Interpretation**: L(d, a))

40. في مسرحية بيت الدمية لهنريك ابسن ، كانت كرستين لندا عاطفية

d **and** c **are linked.**

In Henrik Ibsen's A Doll's House, **Kristine Linde looks like Anne Marie.**

42. تبدو اني ماري وكأنها اني ماري في ، مسرحية بيت الدمية لهنريك ابسن

(Interpretation: L(d, a))

In Henrik Ibsen's A Doll's House, **Anne Marie looks like Anne Marie.**

Because no link is attested to b (in Pl**) and d (in** T**) or e (in** R**), there is also no link between** a **on the one end of the scale and** e **or** d **on the other end of the scale: a description of** e **will not pinpoint** a**, and (43) has not the same interpretation as in (41) and (42) :**

43. في المسرحية، تبدو كرستين لندا وكأنها كرستين لندا

In the play, Kristine Linde looks like Kristine Linda.

44. في المسرحية، تلتقي اني ماري بكرستين لندا

In the play, Anne Marie meets Kristine Linde.

If the meeting happened in reality, the clause would single out

45. c **meets** v

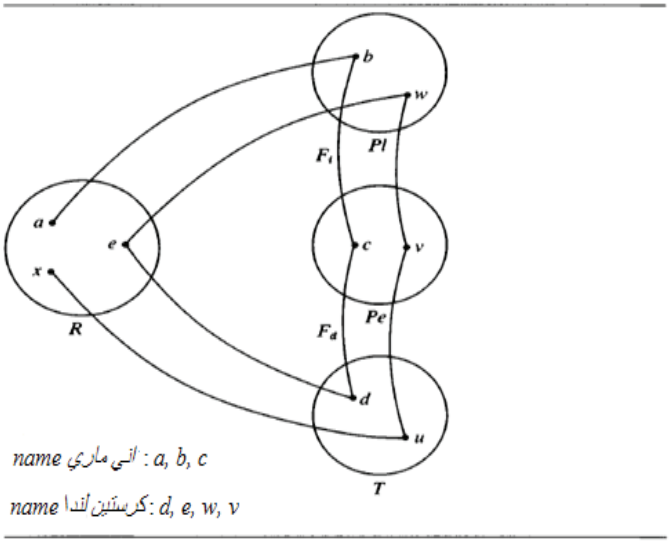


Figure (20) based on Fauconnier (1994:77)

e (كرستين لندا) is connected to c by virtue of d and can function as a trigger for its identification, e is further is bound to v by dint of w, and in turn can be a trigger for the identification of c and v. Identity of triggers operates on reflexivization to yield (45).

46. في المسرحية ، تلتقي كرستين لندا بنفسها

In the play, Kristine Linde meets herself.

Because c is hooked up to a by means of b, (45) can surface as (47).

47. في المسرحية، تلتقي اني ماري بركستين لندا

In the play, Anne Marie meets Kristine Linde.

Also, c itself surfaces as the trigger, since it is connected to v by dint of d, e, w. If c is taken as a common trigger, it will induce reflexivization, again:

48. بنفسها في المسرحية، تلتقي?

In the play, she meets herself.

Interpretation: the clause is questionable because the actress that plays the part of اني ماري cannot be the one who plays the same part of that actress as is the case in reality. Moreover, the tie between c and v does not include Fi °Fd.

If different triggers accompanying the same name, d and w, are selected for c and v, the result is a nonreflexivized clause, as in (49).

49. بكرستين لندا في المسرحية، تلتقي كرستين لندا

In the play, Kristine Linde meets Kristine Line.

If it was supposed that one actress, هيلين, plays the part of اني ماري as a young girl, and كرستين لندا plays the part of اني plays the part of اني ماري as a woman, the single element (اني) in Pl and Pe would have two counterparts in (كرستين and هيلين). Pe, thus, is subdivided into two spaces (''Anne's youth,'' and Anne's womanhood''), with the configuration shown in Fig. 18.

50. في المسرحية،حملت اني ماري طفلا

In the play, Anne Marie carried a baby.

51. في المسرحية،حملت هيلين طفلا

In the play, Helen carried a baby.

But no path from d **and** c' **is there (no composite function** Fd °Fi) **;** d **cannot be an appropriate target, as in (52).**

In the play, Kristine Linde carried a baby.

52. في المسرحية، حملت كرستين لندا طفلا

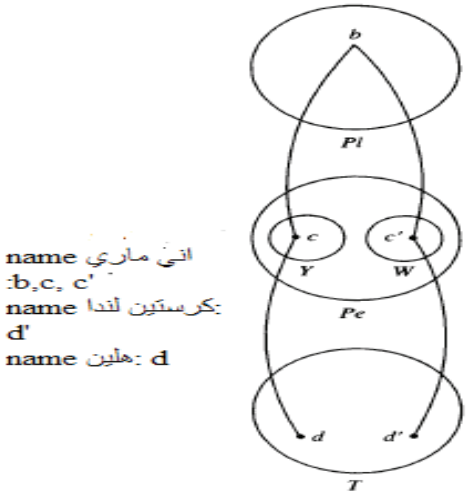


Figure (21) based on Fauconnier (1994:79)

4. Conclusion

Mental spaces have given the Arabic grammatical categories, which are arranged at the clausal level or at the sentence level, their cognitive aura, as to how the speaker or the hearer sets up spaces to structure them internally in his/her mind. The Arabic language exhibits the elements that are bound in different, miscellaneous and open spaces. The Arabic pronoun freely assigns its counterpart in an affiliated space if it is escorted to its antecedent in a single space. As for a simple-clause construction, a connecter produces more than one element counterpart in a single element.

Being objects or individuals, the Arabic noun phrase is constructed as a setter of elements. Therefore, definite descriptions advocate many lineaments in terms of roles rather than direct reference.

The Arabic indefinite article sets up new elements overtly; therefore, the indefinite description in Arabic are analogous to definite ones in that they set up new roles and spot the role itself or its value.

The proper name in Arabic does not overtly indentify a role, unless pragmatic conventions pertain to enable proper names to behave as roles, a function that lies in contrast to the definite description.

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Abstract

Mental spaces are small packages and conceptual regions constructed as one dynamically construes a situation or an event to enhance a psychological operation in constructing meaning within grammatical categories that are congregated and bunched up to form a clause or a sentence. Of these dynamical and psychological construals of meaning are roles and multiple connectors. This paper hinges on Gilles Fauconnier's (1994) mental spaces theory to determine how Arabic opens up and sets up mental spaces to schematise these two phenomena. The Arabic language freely assigns a pronoun counterpart in a connected space; it sets up a noun phrase as an element pointer; and it settles an agreement between indefinite description and definite descriptions in that they both set up new roles and spot their values.