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The role of metaphor in creating polysemy complexes in Jordanian Arabic and American English

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Abstract

Most papers written on polysemy focus on sense overlaps and lexical ambiguity, yet studies that explore the possibility of establishing a polysemic complex and explaining how the new interpretations arise through metaphor are almost non-existent in Arabic. This paper aims to explore how metaphor serves to create new concepts as part of polysemic complexes through adopting Dynamic Conceptual Semantics. The target words are *bidʒannin* [make mad][1] in Jordanian Arabic (JA) and *mad* in American English (AE). An online questionnaire containing 15 items was sent to forty participants (20 JA speakers and 20 AE speakers) where they were asked to provide the interpretations of the words *bidʒannin* and *mad* in contextualized sentences. The AE contextualized instances of *mad* were collected from Corpus of Contemporary American English (COCA) which generated 5,168 tokens of *mad* (in the years 2015/2019). The questionnaire results were discussed in a semi-structured focus-group discussion involving 10 participants. We have demonstrated that when an expression is deemed suitable for all situations categorized under both the primary perspective of MADNESS and a related perspective involving exaggerated descriptions of entities, a concept (P) emerges that bears similarity or relevance to the polysemic complex (*bidʒannin\mad*) to which the expression belongs. In such cases, we can consider the related perspective (P') as a member of the polysemic complex (*bidʒannin\mad*). Thus, this study explains how the same metaphor can lead to a complex of multiple meanings in two different languages that are not necessarily related to each other.

Keywords: *metaphor, polysemy complexes, dynamic conceptual semantics, Jordanian Arabic, American English*

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[1] Although there is an adjective derived from the root *dʒ-n-n*, i.e. *madʒnu:n* 'insane\mad', it is used in certain, more restricted contexts to mainly describe a person as mentally ill, reckless, or extremely irrational. The scope of *bidʒannin* is wider.

Роль метафоры в формировании полисемантических структур в иорданском диалекте арабского языка и американском варианте английского языка

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Аннотация

В большинстве публикаций, посвященных полисемии, внимание исследователей сосредоточено на частичном совпадении значений и семантической неопределенности, в то время как работы, объектом которых становятся многозначные комплексы в арабском языке и возникновение новых смыслов на основе метафорического переноса, практически отсутствуют. Цель статьи – установить роль метафоризации в формировании новых значений как части многозначных комплексов на основе принципов динамической концептуальной семантики. Объектом исследования являются лексические единицы *bidʒannin* в иорданском диалекте арабского языка и *mad* в американском варианте английского языка. Сорок участников (20 говорящих на иорданском диалекте арабского языка, 20 – на американском варианте английского языка) интерпретировали значения лексических единиц *bid'annin* и *mad* в 15 контекстах, предложенных в онлайн анкете. Контексты были отобраны из Корпуса современного американского английского языка (COCA) – 5168 вхождений *mad* за период с 2015 г. по 2019 г. Результаты анкетирования обсудили 10 участников полуструктурированной фокус-группы. В ходе исследования было выявлено, что когда выражение (e) считается уместным для всех случаев в прямом значении «сумасшествие» или в иных связанных с ним значениях, включающих гиперболизацию, возникает значение (P), близкое многозначному комплексу (*bidʒannin \ mad*), к которому принадлежит выражение. Такое семантически связанное значение (P') может быть включено в структуру многозначного комплекса (*bidʒannin \ mad*). Проведенное исследование показывает, как одна и та же метафора приводит к появлению разнообразных значений в двух языках, не обязательно генетически родственных.

Ключевые слова: *метафора, полисемантические структуры, динамическая концептуальная семантика, иорданский диалект арабского языка, американский вариант английского языка*

1. Introduction

The study compares the words *bidʒannin* in JA and *mad* in AE. It reveals how a similar metaphor can lead to polysemy complexes in unrelated languages, offering insights into the universality of certain cognitive processes in language. The target JA word is formed from the Modern Standard Arabic (MSA) root *dʒ-n-n,* with the past tense of the verb in MSA being *dʒunna*, which means 'someone lost his mind' (Almaany 2022). Similarly, the etymology of the word *mad*, based on the Oxford

English Dictionary (OED), can be traced back to Old English *gemǣd* (second half of the 13th century and the first half of the 14th century), meaning 'insane.' By the 16th century, the word *mad* became the usual term for 'insane' (OED). The meanings listed under the Arabic root and its derivatives in MSA dictionaries are generally negative. However, *bidʒannin* has not been investigated in a spoken dialect such as Jordanian Arabic, and *mad* has not been explored from the viewpoint of Dynamic Conceptual Semantics. Thus, examining the different interpretations of any word in a spoken dialect offers considerable insights into that dialect and the thought processes of its speakers. Additionally, understanding how metaphorical interpretations contribute to polysemy deepens our comprehension of language and the cognitive processes involved in meaning creation.

In general, the process of concept formation involves organizing increasing amounts of data, specifically satisfaction situations for expressions, according to similarity or association under different perspectives. This leads to the development of stabilizing sequences, which are quasi-concepts forming the basis of the fundamental experiential conceptual structure (see Bartsch 2002, Dirven & Pörings 2009, Kövecses 2010). These principles also contribute to the use of metaphoric or metonymic language, resulting in the creation of new concepts expressed through lexical forms. As the newly formed conceptual structure strives for stability, there is a natural tendency to expand these structures through metaphor and metonymy, particularly when encountering situations that do not fit into previously established concepts. Thus, incorporating metaphorical and metonymical uses of expressions into established concepts may destabilize those concepts.

Building on the above, Bartsch (2009) argues that metaphor and metonymy, as suggested by cognitive approaches (Lakoff & Johnson 2003), involve not only the transfer of certain entities or structures from the source domain to the target domain but also a shift in perspective is essential for transferring concepts from one domain to another. However, when concepts are broadened or narrowed, no perspective shift is needed since they generally occur within the same perspective, which may be more or less specific. A perspective consists of a selection of dimensions or similarity spaces that determine which aspects of concepts are part of that perspective compared to other concepts within the same perspective. Therefore, a perspective can be seen as a "second-order concept of a certain type, which is a concept of concepts" (Bartsch 2009: 57). The latter refers to a set of concepts that can be distinguished by selecting information provided by the perspective, which can be generated by a question or driven by a desire or interest. Subsequently, predicates are used to express the concepts, resulting in possible answers to the question or possible fulfillment of the desire or interest.

According to the Dynamic Conceptual Semantics model, polysemy—having multiple meanings—can be explained through the use of metaphor and metonymy to create new interpretations of expressions (Bartsch 2002, 2009). A polysemic complex is a group of first-order concepts, but its structure is different from that of a perspective. In a perspective, concepts are set up in opposition to one another, while in a polysemic complex, concepts are linked together through metaphorical

or metonymical relationships. Therefore, the formation of polysemic complexes relies on the relationships of similarity and/or contiguity between concepts from different perspectives (Bartsch 2009).

Using Dynamic Conceptual Semantics as a framework (as described by Dirven & Pörings 2009, Bartsch 2009), this study seeks to explore how both the assumption that utterances are truthful and general principles of concept formation can contribute to understanding and creating new interpretations of expressions. Essentially, the study aims to determine whether a particular expression can be considered a member of a group of expressions with multiple meanings, based on whether it satisfies certain conditions.

More specifically, if the expression *e* is considered satisfactory for all situations *s* categorized under one perspective (*P*) and also under a related perspective (*P'*), and if there is a concept (*P*) that is similar to or related to the polysemic complex (*X*) to which the expression belongs, then that related perspective (*P'*) can be considered a member of the polysemic complex (*X*). This will be accomplished through investigating the different interpretations of the word *bidʒannin*, which is one of the commonly used words among Jordanian Arabic (JA) speakers, and *mad* as used informally in contemporary American English (AE). In particular, it aims to answer the following research questions:

1) How does metaphor function in the formation of novel concepts within polysemic complexes in JA and AE, as per the framework of Dynamic Conceptual Semantics by Bartsch (2009)?

2) What are the implications of mapping features from the source domain of MADNESS in generating metaphoric concepts within the polysemic complex of *bidʒannin/mad*?

3) How does the relationship of similarity impact the inclusion of concepts ('P') into the Polysemic complex of *bidʒannin/mad* when they are based on metaphoric associations?

Most papers written in this area study polysemy in terms of sense overlaps and lexical ambiguity. Generally, few studies focus on the possibility of establishing a polysemic complex and explain how the new interpretations arise through concept formation and understanding. There is also a scarcity of studies conducted on polysemy in the Arabic language. So, by focusing on the creation of polysemic complexes through metaphor, it fills a significant gap in the existing literature that tends to concentrate on sense overlaps and lexical ambiguity. The following section provides a background on polysemy, previous research done in the same field of study, polysemic complexes, and Dynamic Conceptual Semantics.

2. Background

2.1. What is polysemy?

Polysemy is the linguistic phenomenon where one word has different but etymologically and semantically related meanings. According to Kovács (2011), polysemy is very common in different human languages, and almost all words are,

to an extent, considered polysemous. Moreover, the most commonly used words are the most polysemous ones (Ravin & Leacock 2000). Polysemy has been a subject of extensive research and examination by numerous linguists, philosophers, and psychologists. Much emphasis has been placed on distinguishing between *homonymy* and *polysemy*, (e.g., Klepousniotou 2002, Bergenholtz & Agerbo 2014). The two sense relations were mainly studied in terms of the semantic relatedness of their meanings (e.g., Kovács 2011, Jaber et al. 2016) and etymology (e.g., Kovács 2011, Klepousniotou 2002), among other aspects of their semantic and historical characteristics.

Homonyms are words that have the same string of letters with different, unrelated meanings (Ravin & Leacock 2000). Conversely, a polysemous word refers to a single word that has many different senses, but they are related (Klepousniotou 2002). Therefore, in the dictionary, lexicographers list polysemous words under the same entry while homonyms are listed under separate entries. The difficulty lies in determining whether the meanings are related or not. So, even though the definitions of 'homonymy' and 'polysemy' seem simple, they are not clear-cut, and much research was devoted to differentiating between them.

Polysemy is considered pervasive in languages because almost every lexical item can be interpreted in many different ways, and therefore have different meanings (Klein & Murphy 2001). However, the number of senses differs for each word, and even different dictionaries have different senses of the same word. This indicates that there is little agreement by lexicographers on the degree of polysemy.

In a dictionary, polysemous words are listed within one entry, and each sense has subentries (Brown 2008), and even in mental lexicons, all senses of a single lexical item are stored under a single entry (Falkum 2015). According to Allerton (1979), different senses of a word must share a core meaning in order to be considered polysemous. In addition, polysemy is considered a productive phenomenon in language. New senses can always be added to the same words, and therefore, words will even be more polysemous as they are compositional and can be differently encoded or extended (Copestake & Briscoe 1995). For example, the main entry of the word '*reel*' is a '*container*,' but it can be used with another word to mean something completely different according to the context. A 'reel of film,' for example, refers to the film it contains (*ibid*: 30–31). Although polysemy poses some problems in semantics, lexicography, and translation, polysemy rarely causes problems for speakers while communicating, as they are able to understand the intended meaning easily and unconsciously due to having contextual cues (Kovács 2011). However, it can be used in humor and puns as it poses some ambiguity (Ravin & Leacock 2000). For example, a 'whistle' is regularly defined as 'making a shrill clear sound by a rapid movement,' but in another context, it might be referring to the sound produced by a whistle, intending the instrument or the device (Ravin & Leacock 2000: 2).

Falkum (2009) emphasizes that polysemy must not be studied in terms of the language system only, and it should be seen in terms of how communication works

between humans, taking into account the pragmatic inference. In other words, he argues that polysemous words emerge in a linguistic system "which is embedded in a pragmatic inferential capacity" (Falkum 2009: 51). According to the study conducted by Falkum (2015) to investigate whether polysemy words emerge from lexical-internal processes or pragmatic-inferential processes, he found that the 'pragmatic-inferential account' is the most promising basis to treat polysemous data. In other words, even though it is stated that linguistic knowledge has a key role in generating polysemous words, it is found that "polysemy arises mainly as a result of the operation of pragmatic processes over underspecified lexical meanings" (Falkum 2015: 97). In addition, it was argued that the pragmatic processes result in generating new senses based on the context, which are called 'occasion-specific senses' (Falkum 2015). That is, different contexts and the pragmatics of any word or the occasion the word was used on greatly affect what is meant by the word or the different interpretations it might refer to.

2.2. Previous studies

Ibarretexe-Antuñano (1999), using Cognitive Linguistics as a framework, conducted a cross-linguistic study on the analysis of polysemy of perception verbs in English, Basque, and Spanish. It is stated by Ibarretexe-Antuñano that, in Cognitive Linguistics, polysemy's main approach is that meanings are related in systematic ways, i.e., metaphorical and metonymic mappings, because they are what build our sense-related vocabulary. So, polysemy does not solely pertain to a word being associated with multiple senses. The researcher, accordingly, proposes a model for analyzing polysemy. The new model is composed of three stages of analysis: determining the bodily basis to which the semantic field belongs, establishing the conceptual polysemy, which means the different conceptual mappings of the senses a word has, and then establishing its gradable polysemy, which explains that these conceptual mappings are expressed using different lexical items in different languages. In addition, as the researcher analyzes data from three different languages, he emphasizes the idea that conceptual polysemy is universal as our experiences are based on the world around us and the way we view it.

Furthermore, Kjellmer (2007) studied the polysemous word *risk* and the ambiguity it might cause. The researcher firstly identifies the two senses of the word 'risk' and determines that the shared ground between them is that taking risks is for doing something worthy. However, both senses differ in that one is used for putting a valuable, pleasant thing in a hazardous situation (e.g., to risk his life), and the other is used for referring to an unpleasant object or unwanted consequence (e.g., to risk bankruptcy). In his analysis, the researcher focused mainly on the contextual information, but if it is not sufficiently informative, he relied on a less specific interpretation. Therefore, the researcher argues that there are cases where the word 'risk' is ambiguous, based on the reader's or the hearer's perspective, and the interpretations may differ accordingly. The study concludes by suggesting that if

the context is not informative enough, a default interpretation or a general interpretation are called for.

In his study, Alsalim (2017) investigated the Arabic verb *dˁaraba*, which means 'hit,' using cognitive grammar as a theoretical framework. His study focuses on identifying the related senses of the verb in various uses and contexts. Results show that the verb *dˁaraba* has a core, polysemous meaning that has many 'discrete' meanings, such as mixing, parables, appointments, records, deafening, disunion, among other meanings. However, these different meanings are related through meaning chains. In other words, all senses elaborate on the two attributes of the verb, mainly: changing or damaging by the point of contact; but they are used differently according to the different paths and domains.

Moreover, Alsaleem (2018) examined the multiple meanings of some words used in Jordanian Arabic, especially between the dictionary sense and the contextual uses. The sample of the study consists of 38 nouns used in spoken language in Al-Mafraq City, Jordan. She classified the uses of the nouns into two types: to encompass not only its conventional lexicographic signification but also diverse semantic differences (opposite meaning, polysemy, sarcasm, and metaphor). For example, the word *mˁallim*, which literally means 'a teacher,' has different meanings based on the context in which it is used. In a school, for example, *mˁallim* means a teacher, but in a garage, it means a mechanic. It also may be used to refer to an experienced worker or a handyman, or employees may refer to their boss using *mˁallim* (Alsaleem 2018: 50). The study concludes by arguing that polysemy is a main characteristic of most syntactic classes of human languages, and that different meanings depend on speakers and contexts, and possibly on different sociolinguistic factors such as age and gender.

In English, various studies have explored the means by which metaphor gives rise to polysemy. Lakoff and Johnson (2003) explained how the metaphor ARGUMENT AS WAR can give rise to the polysemy of the word *attack*, which can mean both physical assault and verbal criticism. Sweetser's (1990) study focused on the MIND AS BODY metaphor, which can give rise to polysemy in English. The scholar argued that the metaphorical mapping between physical and mental experiences can explain why words related to physical sensations are used to describe mental states. For example, the word *grasp* can be used both to describe physical acts of holding onto objects and mental acts of understanding complex ideas. Sweetser suggested that this kind of polysemy arises from the metaphorical extension of our bodily experiences to abstract domains, and that it reflects the way our minds are embodied and grounded in physical experience (see also Kövecses 2000, 2010, Charteris-Black 2004, Zibin 2021).

Based on the above discussion, it appears that various theoretical frameworks or approaches have been employed in studying polysemy, yet none have applied Dynamic Conceptual Semantics to analyze this sense relation in both JA and AE. Therefore, further research is required to obtain a deeper understanding of the multiple interpretations a word can possess, as well as the influence of the context

on the sense interpretation. By exploring the mechanisms that underlie the generation of novel interpretations and senses, this research extends beyond the conventional boundaries of polysemy analysis. Consequently, it offers a fresh conceptual perspective and makes a contribution to the existing body of knowledge in this field. The following section provides a definition for polysemy complexes.

2.3. Polysemic complexes

According to Bartsch (2009: 58–59), unlike other concepts that can be categorized under the same perspective, once a concept has been stabilized under a particular perspective (P), it is possible for the concept to extend beyond the boundaries of P through word transfer in order to maintain the stability of the original concept. In cases where the transferred word does not fit *salva stabilitate*, the process is referred to as either metaphoric or metonymic transfer, which occurs through similarity or association.[2] The effect of metaphoric and metonymic transfer is that they assume an already established concept and a conventionalized use of the word for that concept, which can lead to the formation of new concepts. Bartsch (2009) provides a consistent definition for polysemic complexes based on this understanding:

> If there exists a condition P' that is satisfied in all situations *s* where expression *e* is fulfilled, and there is a condition P belonging to the set of possible completions of e (POLCOMP(e)) that is either metonymically or metaphorically related to P', then P' also belongs to POLCOMP(e). When the expression (e) is used in the context of perspective (P), it conveys the property (P') that exists at the intersection of (P) and the polysemic complex to which the expression belongs (POLCOMP(e)). In other words, the intersection of (P) and POLCOMP(e) is equal to {P'}
>
> (Bartsch 2009: 58–59)

In the process of forming concepts, the ordering of quasi-concepts on a realistic level can be similar to the ordering on an experiential level. Assuming that (P) is a quasi-concept that has been stabilized as a concept, the polysemic complex of concepts can be structured further by adding a newly created concept (P') that satisfies the following condition:

> If for all situations (s) that fall under the concept (P') within the perspective (Pi), the expression (e) is considered to be satisfied by (s), and there exists a concept (P) belonging to or being a member of the polysemic complex of (e)

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[2] The phrase *salva stabilitate* is Latin, and it can be translated to English as "with stability" or "while preserving stability." Generally, it means that when a concept is stabilized or established within a particular perspective and the aim is to maintain its stability, incorporating cases of using the same word that do not fit or do not contribute to that stability should be avoided. In other words, it suggests maintaining the integrity and consistency of the established concept within that perspective without introducing elements that disrupt or undermine its stability.

such that (P') and (P) are related through either metonymy or metaphor, then (P') is a member of the polysemic complex of (e).

(Bartsch 2009: 58–59)

A starting concept, which is the initial established concept P expressed by expression e, is already in place. The second concept P' is then added if it satisfies condition 2'. Additional concepts can be added thereafter, either originating from the first or second concept (Bartsch 2009: 59–60). The question that will arise here is how polysemy can be generated on the experiential level. Thus, it is exemplified in the subsequent context:

Assuming that expression *e* is used truthfully in situation 2, and the situation *s* satisfies the conditions of perspective *Pi*, then we need to determine the concept expressed by *e* under *Pi* with respect to *s*, which could potentially be a member of the polysemic complex of *e*. The following process is used to identify such a concept, as outlined by Bartsch (2009: 59–60):

• First, we consider the set of previous satisfaction situations for *e* and create a new set *Se,i ∪ {s}* for *e* under *Pi*.

• We choose *Se,i* such that all situations in *Se,i* are identical to s under perspective *Pi*.

• We extend this set taking into account the new satisfaction situation *s* of *e* in a way that conforms to Pi-harmony and contradicts other Pi-properties.

• This results in a sequence of growing subsets up to *Se,i ∪ {s}* together with a converging decline containing the internal similarity degree that keeps intact contradiction under *Pi*.

• If it is not possible to construct *Se,i ∪ {s}* in this manner, then we need to delineate another corresponding set for *e* under *Pi* that fulfills these conditions and name it *Se,i*.

• This process results in a quasi-concept *Se,i ∪ {s}* that approximates a concept that is a construction of a property, which is a concept that is realized in *s*.

Having discussed polysemy complexes, we devote the following section to an overview of Dynamic Conceptual Semantics as envisaged by Bartsch (1998, 2009).

2.4. Dynamic Conceptual Semantics

The Dynamic Conceptual Semantics model (Bartsch 1998, 2009) provides a framework for understanding how metaphor and metonymy can be regarded as new ways of creating sequences of "satisfaction situations for an expression on the experiential level". These cognitive operations involve selecting similarity and contiguity relations under specific perspectives (*Ps*) to form growing sets of data into similarity and contiguity sets (Bartsch 2009: 55). Metonymy involves a change in perspective to create contiguity relationships, such as *means-end, cause-effect, instrument-action*, and *action-result*. Conversely, metaphor involves a change in perspective to create similarity relationships. It is important to note that the source concept is already stabilized; thus, the integration of a new use of an expression into

the old concept under the previous perspective would result in the destabilization of the concept (Bartsch 2009: 55).

For young children in early developmental stages, the distinction between metaphoric or metonymic uses and normal language uses does not exist. They only have language use guided by similarity and contiguity under changing perspectives. The distinction between creative and standard uses of an expression occurs only when conceptual stability is reached (Bartsch 2009: 55). In metaphoric and metonymic languages uses, the process of concept formation encompasses the stabilization principle as well as the change of *P*, from a default to a context-dependent and locally introduced perspective. A relationship of similarity and contiguity is formed via subjective and local series of theories and experiences on both levels of thinking and understanding, as well as experiences generally made and stereotypes or theories adhered to in a certain speech community. The application of new perspectives, called the new Ps, can then be applied locally or globally to the established experiential and theoretical concepts. This is achieved by selecting the feature basis of a metaphor and enriching it with situational experiences and additional knowledge. As a result, a new concept is created through a combination of selection and enrichment (Bartsch 2009: 55).

The words analyzed in this study originate from a metaphorical use. Their literal meaning is 'to drive one crazy,' while they are usually used to refer to positive features and characteristics about something or someone. This study aims to explore the polysemy found in *bidʒannin* and *mad* from the viewpoint of Dynamic Conceptual Semantics. The next section reviews some studies that have adopted different frameworks to study polysemy.

3. Methodology

Twenty Jordanian participants (14 females and 6 males), whose ages ranged between 20–35 years old and twenty native speakers of AE (13 females and 7 males) whose ages ranged between 25–39 old took part in this study. The age of the participants was crucial in this study since, as discussed before, participants should have reached conceptual stability. The participants were recruited through a convenient sampling procedure where the researchers chose a sample which is easily accessible to them (see Alazazmeh & Zibin 2022); they were friends, family members and acquaintances of the researchers who agreed to willingly take part in this study. The JA participants were all native speakers of Urban Jordanian Spoken Arabic, the dialect which is spoken mostly in Amman, the capital of Jordan, and the second group were all native speakers of American English. The data elicitation tool employed is an online questionnaire sent to the participants either through the email or social media platforms. Specifically, the participants were asked to provide the interpretations of the words *bidʒannin* and 'mad' in contextualized sentences. The JA sentences were written in consultation with two linguists whose native language is JA. An illustration is provided below (translated from Arabic):

What is the interpretation of the word *bitdʒannin* in the following context?
You and your friend went on a trip to Aqaba (a coastal city in southern Jordan), you booked a room in a 5-stars hotel that has a nice view of the Red Sea, your friend said:
ʔilʔitˤlaːleh   bitdʒannin (the view\scene makes you mad)
The meaning of bitdʒannin is --------------.

The AE examples were adapted from the Corpus of Contemporary American English (COCA) (see Goddard & Wierzbicka 2021, Goddard, Wierzbicka & Farese 2022).[3] The researchers searched for the word *mad* as used in the period between 2015–2019, eliciting 5,168 tokens in total. The generated tokens were then filtered manually to find examples in which the word *mad* is used to describe an entity\human\behavior\action in different contexts similarly to the way *bitdʒannin* is used in JA. The task was done separately by the three researchers; the total number of examples generated by the three researchers was 26, then it was narrowed down to 15 which is the total number of items that was included in the questionnaire. The participants were given a similar question to the one described above. The two words, i.e., *bidʒannin* and *mad*, were chosen in particular because they are extensively used words among JA and AE speakers in different contexts based on the observation of two of the researchers whose native language is Urban Jordanian Spoken Arabic. As discussed below, it has several interpretations based on the context in which it occurs. In addition, the two words also have a literal meaning which could be different from their interpretation in context. The questionnaire also contained an open-ended question where the participants were asked to suggest other interpretations of the words *bidʒannin* and *mad*.

To get more insight into the different interpretations of the target word and to triangulate our results, the results obtained from the online questionnaire were discussed in a focus-group discussion consisting of 10 speakers of JA and 10 native speakers of AE (see Zibin, Altakhaineh & Hussein 2020). The sample was chosen randomly using a simple random sampling technique. That is, one researcher approached students randomly at the University of Jordan and asked them to take part in the focus-group discussion; thus, any student at the university had a chance to be selected. Ten JA participants (6 females and 4 males) mean age 22 years old and 10 AE native-speaking participants (8 males and 2 females) mean age 25 years old agreed to take part in the discussion which took place at one of the rooms at the faculty of foreign languages and lasted for 60 minutes. The results are presented in the section below.

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[3] 'Adapted' here means modifying or changing the original sentences to better suit the task at hand. This involved a variety of changes, such as altering the grammatical structure, substituting words or phrases, or omitting parts of the sentence. The purpose of adapting sentences is usually to make them more relevant, accurate, or appropriate for the target task.

4. Data analysis

The researchers analyzed the answers provided by the participants in the questionnaire by calculating the frequency of each answer and then selecting the answers that received the highest percentages to be analyzed. These results were supported by the ones we obtained from the focus-group discussion. The results showed that the words *bidʒannin* and *mad* were found to be generally used to positively describe an object, a situation, or a person taking into account that the context and other factors can influence the interpretation. In this regard, JA is different from MSA, where the senses are mainly negative. Examples discussed below show different interpretations of the word *bidʒannin* based on different contexts and uses.

(1) ʔil-jaww   bidʒannin
     DEF-weather   make.mad-3SGM
     'The weather is extremely nice [warm, rainy, foggy, snowy].'

(2) It is mad cold outside today.

Using the word *bidʒannin* to describe the weather is very common in JA. It may have different interpretations according to one's favorite season. For example, if one likes winter, they would describe windy, rainy, and foggy weather with the word *bidʒannin*, but if one likes summer, s/he would describe sunny and hot weather as *bidʒannin*. In AE, the matter is rather different because the speaker would normally explain the remark using an adjective after 'mad' as shown in example (2) (cf. Kjellmer 2007). Yet, saying something like "the weather is mad tonight" can have different interpretations based on the context, the speaker as well as other factors. The answers obtained from the participants on the questionnaire show that the weather is mainly described as *bidʒannin* when it is clear and mild since the sentence in the questionnaire was about summer, and more than half the participants answered that warm and sunny weather is what they describe the most as *bidʒannin*. In AE, the participants in general agreed that describing the weather as *mad* usually means very hot or very cold.

(3) qma:ʃit-ha: bitdʒannin
     fabric-3SGF make.mad.3SGF
     'The fabric is amazing [soft, stylish, beautiful].'

(4) This dress is mad.

The words *bidʒannin* and *mad* can be used to describe the fabric of a piece of clothing. Participants were asked to describe the best fabric\dress\suit they like, and it was indicated that the words *bidʒannin* and *mad* are usually used to mean that the fabric\dress\suit is beautiful, impressive, stylish and others.

(5) ʔil-walad   bidʒannin
     DEF-boy   make.mad.3SGM
     'The boy is extremely clever\handsome\nice\gentlemanly.'

(6)   hal-bint   bitdʒannin
            this-girlmake.mad.3SGF
            'This girl is extremely smart\beautiful\nice\funny'.

(7)   She is mad smart.

Describing people with the word *bidʒannin* may mean different things according to the context. In example (5), for instance, if the sentence was said in the context of school, it will mostly mean that the boy is clever and always outperforms his classmates. So, a student may be described as *bidʒannin* because s/he is intelligent. However, in example (6), describing a lady in the context of marriage, the sentence will mean that she is beautiful and has good features to be a future wife. In AE, describing a person as mad is usually meant to be negative; however, if an adjective is added after *mad* which functions in this case as an adverb, then the interpretation would depend on the adjective that follows mad, e.g. in (7) "the guy is extremely smart".

(8)   bitdʒannini
            make.mad.2SGF
            'You are extremely gorgeous\captivating\kind.'

(9)   That girl is mad gorgeous.

The word in example (8) is very commonly used by girls to complement each other. For example, girls commonly say *bitdʒannini* to express how beautiful their friend looks or describe how kind a girl is. So, *bitdʒannini* can also be used as a complement. In (9), again using *mad* accompanied by *gorgeous* means "that girl is extremely beautiful".

(10) ʔil-ʔakil   bidʒannin
        DEF-food.3SGM   make.mad.3SGM
        'The food is extremely tasty\appetizing\mouthwatering\scrumptious.'

(11) This is mad tasty.

Food, too, can be described as *bidʒannin\mad*. In this case, it means that it is delicious. This sentence is mostly used to describe how good a specific restaurant is, or to complement food served at a feast. In general, it can be observed that both words function as adverbial modifiers of degree in 8–11.

(12) kala:m-ak   bidʒannin
        Speech-2SGM   make.mad.3SGM
        'You are absolutely right.'

When words or speech are described using *bidʒannin*, they are absolutely correct, accurate, convincing, and precise to the one who is listening. This sense according to the participants is not used, with *mad*, in American English.

(13) ʔil-ʕutˤur   bidʒannin
        DEF-perfume.3SGM   make.mad.3SGM
        'The perfume smells extremely appealing\exotic.'

(14)   The perfume is mad.

Describing perfume as *bidʒannin\mad* means that it is extremely appealing, and perfume is one of the things that is commonly described with *bidʒannin* among Jordanian speakers, but not very often by American English speakers.

(15)   ʔil-dokto:r   bidʒannin
       DEF-doctor.3SGM   make.mad.3SGM
       'The professor is extremely helpful\ kind\ lenient'.

(16)   She is mad cool.

(17)   ʔil-lma:ddeh   bitdʒannin
       DEF-course.3SGF   make-mad.3SGF
       'The course is extremely easy\beneficial\informative\enjoyable'

University students use the word *bidʒannin* to describe a professor to mean how helpful and distinguished s/he is, and that s/he makes things clear and easy during classes. A course can be described using *bidʒannin* as well, but in this case, it will mean that the course is easy, beneficial, informative or enjoyable. According to the AE native speakers who took part in the focus-group discussion, *mad* is not normally used in an academic context, yet it can be used to describe a person [even a professor] as in example (16), but with an informal connotation. The ability of the participants to infer the meaning of *mad* and *bidʒannin* relying on the context and state that these words are suitable to be used in others [online language comprehension and production] provides support to pragmatic-inferential account proposed by Falkum (2015). Yet, explaining how the polysemy arises in these two words given that they belong to two different languages but used in similar ways may not be explainable by a pragmatic account alone (see Section 5).

(18)   ʔil-ʔaʕdeh/ ħafleh/ dʒamʕa   bitdʒannin
        DEF-visit\party\gathering.3SGF   make.mad.3SGF
       'The visit/the party/the gathering was extremely delightful\cool\nice\fun.'

(19)   The hobby shop was mad fun.

The sentence in example (18) is commonly said at the end of the event to express how nice it was and how happy the guests are, and that they enjoyed themselves. The same applies to example (19), where a place can be described as extremely fun using *mad*.

(20)   ʔil-ʔitˤla:leh   bitdʒannin
       DEF-view.3SGF   make.mad.3SGF
       'The view is extremely breathtaking\spectacular\striking.'

(21)   This view is mad.

Views and scenery, in JA, are very commonly described with the word *bidʒannin* to express how impressive and breathtaking they are. This sentence can be used to list the special features of a hotel room, a restaurant, or a new house with

a balcony, in order to mean that it has a very special view. In example (21), a beautiful view\scenery can be described as mad to convey how extremely beautiful it is according to the participants.

(22) sˤu:tu   bidʒannin
      Voice.3SGM   make.mad.3SGM
      'His voice is extremely captivating\melodious\ mellifluous.'

Someone's voice can be described as *bidʒannin* if it is engaging and melodious to listen to. The sentence in example (22) would be very commonly heard in a conversation between two people speaking about their favorite singer. Someone's voice or vocals are not normally described as *mad* in AE.

(23) ʔil-ʃuʕu:r   bidʒannin
      DEF-feeling.3SGM   make.mad.3SGM
      'The feeling is extremely distinct\liberating.'

This sentence was said in the context in which a person was expressing how perfect it is to feel free after being very busy and overwhelmed with much work. However, the sentence may be used in various contexts to refer to different things. For example, one might say it to describe how great it is to get something after trying hard, to say that it is great to love and to be loved, or in the context of doing something to refresh you and re-energize you. It can also be used to express negative feelings such as anxiety, frustration and disappointment in certain contexts as in the following example:

(24) halwadˤiʕ   bidʒanninak
      this.situation.3SGM   make.mad.3SGM
      'This situation makes you extremely frustrated\angry\annoyed.'

Feeling *mad* in AE is usually used with negative connotations as in feeling extremely angry or annoyed as in:

(25) The woman was mad angry by this.
(26) I snapped. I get mad fast.

In addition, examples (27–29) show that the target words are not only used to describe entities\humans, it can also be used to describe actions, skills, and behaviors. Consider the following examples:

(27) ʃuɣluh   bidʒannin
      work.3SGM   make.mad.3SGM
      'His work skills are extremely impressive\remarkable.'

(28) He has mad skills.

(29) tˤari:ʔit   taʕa:ml-uh   maʕ l-mawdu:ʕ   bitdʒannin
      way.3SGF   dealing-3SGM   with DEF-issue.3SG   make.mad.3SGF
      'The way he dealt with the situation was extremely professional\ competent\impressive\practical.'

In example (28), for instance, describing someone's skills as *mad* means that they are exceptional.

5. Discussion

Through the present discussion of some examples spoken regularly in JA and AE, it has been shown that the words *bidʒannin*, along with its other conjugated forms, and *mad* have different interpretations according to the context in which they are used. Although used similarly, the scope of *bidʒannin* is wider than that of *mad* as the latter is unacceptable in certain contexts. It is noticeable that the majority of interpretations are considered positive, and accordingly *bidʒannin* and *mad* have relatively positive connotations in JA and AE.

All senses of a word should be in relation to the 'construction' in which it is found, considering the cultural and pragmatic contexts in which this interpretation is made (Okeke & Okeke 2017). Accordingly, from the perspective of Dynamic Conceptual Semantics, it can be argued that all senses of the words *bidʒannin\mad* can be traced back to a metaphorical use responsible for its multiple related senses, as they all have related exaggerated senses. So, according to what is discussed above, a polysemous word should have semantically related interpretations, i.e., the majority of senses that *bidʒannin\mad* [used as either adjectives or adverbs] convey are positive, exaggerated ones.

After providing the examples of the target words that were given by the participants, in the next section, we will demonstrate how metaphor contributes to the creation of new concepts that are included in polysemic complexes at both the experiential and theoretical levels of concept formation, by utilizing the Dynamic Conceptual Semantics approach (Bartsch 1998, 2002, 2009).

From the view point of Dynamic Conceptual Semantics (Bartsch 1998, 2009), the polysemy of *bidʒannin\mad* can be explained as follows: on the experiential level of concept formation we have a person\people who established an analogy between the extremity that one experiences when being irrational (rather than being literally insane as in mentally ill) and to show extreme enthusiasm about a certain entity (clothes, food, weather), human, action or behavior so that such an entity is described as being extremely breathtaking, captivating, exceptional, beautiful, delectable, breathable, soft and so forth. The list of aspects\features being mapped from the source network and the source domain itself to be satisfied on the target are those related to the entity being described, i.e., if it was food, then it would be appetizing, if it was fabric, then it would be soft, beautiful, billowy, etc. depending on the context and individual preferences. Thus, what is being mapped from the domain of IRRATIONALITY and INSANITY is extremity. At first, speakers go through a series of previous experiences\situations where enthusiasm about an entity is described in terms of extremity established through similarity, in other words through metaphor. In these situations, speakers described certain entities, humans, actions or behaviors as *bidʒannin \ mad* but did not literally mean that entity \ human \ action \ behavior is making you actually mad or is driving you out

of your mind. The two speech communities, in our case, would notice that the word is used to convey extremity either positive (mostly) or negative about a certain entity\human\action\behavior. The perspective under which speakers of these communities perceive the mapped feature (extremity) from the domain of MADNESS\INSANITY, which is also the one under which they have to understand the metaphorical interpretation of *bidʒannin\mad,* is the perspective of exaggerated description of appearance of an entity, action, behavior, etc. This perspective chooses the most common extreme aspect and other related exaggerated aspects in the experiential concept created by the situations of *bidʒannin\mad*. It is typical as opposed to the description of entity, human, action or behavioral properties of normal unexaggerated situations experienced daily. Thus, speakers would use *bidʒannin\mad* to describe entities in situations that are extremely [adjective] based on the context being experienced.

Under such perspective, speakers can continue selecting situations of *bidʒannin\mad* by adding to these [salva stabilization] situations the experiences in which they need to express extreme enthusiasm about a certain entity, human, action or behavior, and finding a situation that fits as a continuation of these respective experiences. By doing so, they create a new concept of extreme enthusiasm that is situated under the perspective of exaggerated or extreme description of X, contrasting with other descriptive concepts. This concept can be applied not only to the entities mentioned above in appropriate situations, but also to other entities, behaviors, and actions. The primary or standard perspective under which *bidʒannin\mad* falls is the perspective of insanity, madness or irrationality, while the secondary perspective under which the metaphoric use is created is the perspective of an exaggerated description of entity, human, behavior or action.

On a theoretical level of forming concepts, the expression *e* is a concept that is defined through language in a semantically unique syntagmatic field of the expression, as described by Bartsch (2009: 61). This field consists of a group of general sentences where *e* is used as a general term and is accepted as true. The context-specific sentences of the generalized *e* that are part of this set make up the semantically unique distribution of the term. Furthermore, the semantically distinctive predicates and conjunctions are included in this field, which form the characteristics of the concept in relation to how they are linguistically expressed. If a concept is explained in this manner, it is called a linguistically explained concept (Bartsch 2009). Choosing specific features and predicates that appear in a subset of true general sentences that form a coherent theory can result in the distinctive distribution of a term. Consequently, the concept represented by the term becomes a theoretical concept in relation to that theory. This selection of features and predicates can highlight the semantic difference between the term and other terms in the theory.

These features and predicates also constitute the semantic characteristic distribution that differentiate the concept expressed by the target term from other concepts that stand in contrast to this term. For instance, there are certain features

that are mapped from the primary concept\source domain of MADNESS\INSANITY onto a target, e.g., LOVE (as in LOVE IS MADNESS) which are different from those mapped from that same domain\perspective onto say an extremely well-done job. In the former, what is being mapped is the irrationality and impulsiveness of individuals who are in love which leads them to make stupid and impulsive decisions (see Zibin et al. 2022), while in the latter what is being mapped is extremity.

Based on the above discussion, it can be suggested that the case of the words *bidʒannin and mad* can be viewed a polysemy complex. The effect of the metaphor taken from the domain of MADNESS is that it presupposes an already stabilized concept as well as a conventionalized use of the words for the said concept. Taking this into account, new concepts can be formed under that perspective:

Based on the assumption that *P* is a concept that has already been established, the polysemous complex of concepts is further structured by introducing a newly created *P'*. This is achieved by satisfying condition 2, which states that if an expression *e* is considered applicable to all situations *s* classified under the concept *P'* within perspective *Pi,* and there exists a concept *P* within the polysemous complex of *e* (POLCOMP(e)), which is metaphorically related to *P'*, then *P'* is also considered a member of the polysemous complex of *e* (POLCOMP(e)). This applies to expressions which were not provided by the participants, e.g. *sna:nak bidʒanninu:* lit. your teeth drive us mad. 'your teeth are extremely white\clean\shiny' or *your vocals are mad [as in your signing voice is extremely impressive].* That is, if the expression *e* [like the one above] is considered true in all situations classified under the primary perspective of MADNESS, as viewed through the secondary perspective of exaggerated description of an entity, and there exists a concept *P* that is part of the polysemic complex of *bidʒannin\mad* based on a metaphoric relationship of similarity, then *P'* can also be considered a member of the polysemic complex of *bidʒannin\mad*. This would also apply to other expressions that meet the above definition. What is rather interesting in this discussion is that the same set of experiences relying on mapping the same features from the same source domain [MADNESS] take place in two unrelated languages, which gives rise to relatively the same polysemic complex. This is in agreement with Ibarretxe-Antunano (1999) who through examining SEEING IS TOUCHING and SEEING IS EXPERIENCING metaphors, argued that metaphorical mappings involved in these two metaphors reflect basic embodied experiences, and that understanding the underlying conceptual structure of polysemous words can shed light on the nature of human cognition and the relationship between language and perception. The study has demonstrated that conceptual metaphors based on shared experiences can give rise to the same polysemy complex in two unrelated languages.

6. Conclusion and recommendations

Through the use of authentic examples of the words *bidʒannin* and *mad*, this research has demonstrated how metaphor functions at both the experiential and

theoretical level of concept formation to generate novel concepts within polysemic complexes, based on the framework of Dynamic Conceptual Semantics by Bartsch (2009). The study has explained the role of perspectives in this process, which are shaped by the available situational or contextual information regarding a particular focus of attention. It has been shown how metaphor involves crossing between perspectives which select similarities or similar features or aspects as well as differences from each of the chosen perspectives. Through mapping features from the source domain of MADNESS, we have demonstrated that if for all situations (*s*) which are classified under the primary perspective of MADNESS under the secondary perspective of exaggerated description of an entity, an *e* is taken to be satisfied by *s*, and there is a concept *P* with *P* belonging to or being a member of the polysemic complex of *bidʒannin\mad* so that the relationship is based on similarity, i.e. metaphoric, then *P'* would be a member of the polysemic complex of *bidʒannin\mad*. The presence of a shared metaphorical source in two distinct languages may indicate that some metaphors are indeed shared across cultures. The mappings of this source domain gave rise to words that have evolved and acquired additional meanings over time. Thus, the shared metaphorical source has revealed how speakers of two different languages rely on similar cognitive processes to understand and create meaning. The analysis also contributes to the field of lexical semantics by illustrating how metaphors can play a significant role in creating polysemy.

Finally, it can be suggested that there is a scarcity of research on polysemy complexes in Arabic in general, and in Jordanian Spoken Arabic in particular. Hence, more research studies are needed to examine other polysemic complexes that are derived from metaphor and metonymy in Arabic. Future studies can also examine if the same metaphor can give rise to a polysemy complex in other unrelated languages.

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