

# **Discursive news values analysis of English and Arabic science news stories<sup>(\*)</sup>**

**Maha El-Seidi**

*Associate Professor of Linguistics,*

*Department of English,*

*Faculty of Arts, Minufiya University*

## **Abstract**

The present study aimed at comparing the news values constructed to enhance newsworthiness in English and Arabic science news stories. The study was based on two corpora of science news stories headlines and leads taken from the British *Daily Telegraph* and the Egyptian *Al-Ahram*. Each corpus comprised 120 texts. The rhetorical significance of the opening section (headline and lead) of the news story, especially in terms of establishing newsworthiness, has been consistently emphasized in the literature on news discourse. The study employed the discursive news values analysis (DNVA) approach as presented in Bednarek and Caple (2017). The findings of the analysis have indicated that newsworthiness in science news stories is established largely by means of the discursive construction of the following news values: Eliteness, Impact, Negativity, Newness, Positivity, Proximity, Superlativeness, and Unexpectedness. The analysis has shown similarities as well as variation in the relative frequency of news values and the linguistic resources used in their construction. The examined texts have also demonstrated that the combining of two or more than two of the news values is a predominant feature of the headline and lead section of the science news story in the two languages. Positivity and Negativity, in particular, have appeared inseparably related to other values. The identified variations in the two corpora have been explained in terms of the overarching concern of each group of journalists in their science coverage.

## **Keywords**

newsworthiness, news values, science journalism, popular science

---

(\*)Discursive news values analysis of English and Arabic science news stories Vol. 8, Issue No.1, Jan 2019, pp.33-85.

## المخلص :

تهدف هذه الدراسة إلى مقارنة القيم الإخبارية التي يتم صياغتها لتعزيز استحقاق الخبر للنشر في القصص الإخبارية العلمية في اللغتين الإنجليزية والعربية. ولهذا الغرض تم اختيار مجموعتين من العناوين الرئيسية والفقرات الافتتاحية للقصص الإخبارية العلمية إحداهما من صحيفة "ديلي تلجراف" البريطانية والأخرى من صحيفة الأهرام المصرية. تكونت كل مجموعة من ١٢٠ نصاً تم نشرها في الفترة ما بين أول أغسطس ٢٠١٦ إلى آخر مايو ٢٠١٧. وقد أكدت الدراسات السابقة لخطاب الأخبار على الأهمية البلاغية للعنوان الرئيسي والفقرة الافتتاحية في القصة الإخبارية، خاصةً فيما يتعلق بالتأكيد على استحقاق الخبر للنشر. وقد استخدمت الدراسة منهج التحليل الخطاب للقيم الإخبارية كما تم طرحه في (Bednarek and Caple, 2017). وقد أشارت نتائج التحليل إلى أن صياغة استحقاق الخبر للنشر في القصص الإخبارية العلمية سواءً في الصحافة البريطانية أو المصرية تتم بصورة رئيسية عن طريق البناء الخطاب للقيم الإخبارية الآتية: الإنتماء للنخبة والتأثير والسلبية والحادثة والإيجابية والقرب (الجغرافي والثقافي من المتلقي) والأفضلية وعدم التوقع. وقد أظهر التحليل أوجه التشابه والاختلاف في المعدل النسبي لتكرار استخدام هذه القيم والمصادر اللغوية المستخدمة في صياغتها. كما أظهرت النصوص التي تمت دراستها أن المزج بين اثنين أو أكثر من هذه القيم الإخبارية سمة غالبية في العناوين الرئيسية والفقرات الافتتاحية للقصة الإخبارية العلمية في اللغتين. وعلى وجه الخصوص بدت قيمنا السلبية والإيجابية مرتبطتين ارتباطاً وثيقاً بقيم أخرى على رأسها التأثير والقرب والأفضلية. وقد تم تفسير الاختلافات التي ظهرت بين المجموعتين في إطار التوجه الرئيسي لكل مجموعة من الصحفيين في تغطية الأخبار العلمية.

## الكلمات الدالة

استحقاق النشر، القيم الإخبارية، الصحافة العلمية، تبسيط العلوم

## Discursive news values analysis of English and Arabic science news stories

The present study aimed at comparing the news values constructed to enhance newsworthiness in English and Arabic science journalism. Whether in the form of specialized science magazines like *Daily Science* or specialized science sections in daily newspapers, science journalism is the source from which the public obtain most of their science information (Hyland, 2010). It, thus, represents the principal genre of science

popularization. Also labeled *popular science*, science popularization refers to "science writing for the general public" (Calsamiglia, 2003, p. 139). Popular science discourse can be produced by the scientists themselves or science journalists (Myers, 2003).

Science journalism has been the focus of numerous discourse studies that have investigated the various strategies adopted in the process of transforming or recontextualizing specialized scientific knowledge to the lay public. To elucidate such strategies, one approach of discourse studies focused on comparing the rhetorical and/or linguistic choices in scientific research articles and popularizing articles, (e.g., Fahnestock, 1998; Hyland, 2010; Myers, 1991). Discourse studies have also been concerned with the strategies of science popularization in languages other than English, e.g., Spanish (Calsamiglia & López Ferrero, 2003; Calsamiglia & van Dijk, 2004), French (Moirand, 2003), and Brazilian Portuguese (de Oliveria & Pagano, 2006). Recently, this line of research has been concerned with the discourse strategies adopted in online popular science, especially science blogs (Luzón, 2013). Of all these researchers, it is only Hyland (2010) who has addressed news values, albeit indirectly. Only very recently has discourse research started to pay some attention to news values in science journalism (Molek-Kozakowska, 2016, 2017).

In the remaining sub-sections of this introduction the definitions given by linguists to news values are presented, followed by a review of the relevant literature including the originating study, the communication and linguistics research of news values. Then, the discursive news values analysis (DNVA) approach and the studies that have adopted it are presented.

### **News values: Definition**

Linguists have defined news values in various but related ways. For Bell (1991), news values are the "values by which one 'fact' is judged more newsworthy than another" (p. 155). Van Dijk (1988) views news values as located in the "social cognition" and defines them as "values about the

newsworthiness of events or discourse. . . . [which] provide the cognitive basis for decisions about selection, attention, understanding representation, recall, and the uses of news information in general" (p. 119). News values for Fowler (1991) are a "complex set of criteria of newsworthiness; so news is not simply that which happens, but which can be regarded and presented as newsworthy. These criteria . . . are said to perform a 'gatekeeping' role, filtering and restricting news input" (p. 13). All these definitions indicate the significance of news values in the news process. The definition adopted in the present study is the one presented by Bednarek and Caple (2014), which reads as follows: "News values are . . . the 'newsworthy' aspects of actors, happenings and issues *as existing in and constructed through* discourse" (p. 137, emphasis in original).

### **News values: Originating study**

The work which is considered seminal in news values research is that of Galtung and Ruge (1965). Based on examining the coverage of three international crises in four national newspapers in their own country, Norway, these two social scientists presented an inventory of twelve "news factors" representing the criteria of selecting which "'events' become 'news'" (Galtung & Ruge, 1965, p. 65, emphasis in original). The authors compared the events under consideration for news reporting to radio wave signals, and, using this analogy, they explained the factors and the properties of events.

Galtung and Ruge (1965) classified the news factors into two major categories: *culture-free* (the first eight factors) and *culture-bound* (the last four ones). The factors are listed and explained briefly below. All explanations are those of Galtung and Ruge (1965, pp. 65-68, all emphasis in original).

1. Frequency: [The frequency of an event] refer[s] to the time span needed for the event to unfold itself and acquire meaning. . . . *The more similar the frequency of the event is to the frequency of the news medium, the more probable that it will be recorded as news by that news medium.*

2. Threshold: There is a threshold the event will have to pass before it will be recorded at all [The more intense the event], the bigger the headlines it will make.
3. Unambiguity: An event with a clear interpretation, free from ambiguities in its meaning, is preferred.
4. Meaningfulness: [A meaningful event is one which is] 'interpretable within the cultural framework of the listener or reader' . . . there has to be *cultural proximity*. . . . The other dimension of 'meaningful' is in terms of *relevance*: an event may happen in a culturally distant place but still be loaded with meaning in terms of what it may imply for the reader or listener.
5. Consonance: *The more consonant the signal is with the mental image of what one expects to find, the more probable that it will be recorded as worth listening to.*
6. Unexpectedness: The more unexpected have the highest chances of being included as news. . . [And] by 'unexpected' [is] simply mean[t] essentially two things: *unexpected* or *rare*. . . . Events have to be unexpected or rare, or preferably both, to become good news.
7. Continuity: Once something has hit the headlines and been defined as 'news', then it will *continue* to be defined as news for some time.
8. Composition: The desire to present a 'balanced' whole—[a balance of stories of different kinds across a newspaper or news programme]
9. Reference to elite nations: *The more the event concerns elite nations, the more probable that it will become a news item.*
10. Reference to elite people: *The more the event concerns elite people, the more probable that it will become a news item.*
11. Reference to persons: *The more the event can be seen in personal terms, as due to the action of specific individuals, the more probable that it will become a news item.*
12. Reference to something negative: *The more negative the event in its consequences, the more probable that it will become a news item.*

It is important to note that Galtung and Ruge (1965) have emphasized that the news factors are interrelated rather than "independent of each other" (p. 71). Concerning the operationalization of the factors, they have provided the following two hypotheses which are relevant, especially the second one, to the linguistic analysis of news worthiness. First: *"The more events satisfy the criteria mentioned, the more likely that they will be registered as news (selection). [Second:] Once a news item has been selected what makes it newsworthy according to the factors will be accentuated (distortion)"* (p. 71, emphasis in original). This accumulative effect of factors will result in producing a world image in news stories that may not be the same as what happens actually.

The publication of Galtung and Ruge (1965) has inspired an extensive line of research on newsworthiness by communication scholars and, to a less extent, linguists. In subsequent research, the news factors have been referred to as news values, and for most researchers, as indicated by Bednarek and Caple (2017), the two terms are synonymous.

### **News values in communication research**

Communication scholars have had two different stances towards Galtung and Ruge's approach. On the one hand, the latter's study has been considered the "most influential explanation" of news values (McQuail, 1994, p. 270), and one that provided the earliest systematic definition of newsworthiness (Palmer, 1998, p. 378). On the other hand, several critiques have been addressed to the same approach. Harcup and O'Neill (2001) considered the news values listed by Galtung and Ruge (1965) as "hypothetical" and "limited to the reporting of foreign news" (p. 26). Brighton and Foy (2007) pointed out to the out-datedness of Galtung and Ruge's (1965) model, especially if seen against the changing climate of the twenty-first century media, e.g., live coverage in broadcast media and the "digital converged media forms" (p. 5).

These critics, however, have not called for discarding the Galtung and Ruge's (1965) framework, but rather for developing its central elements to

produce one which is workable for the twenty-first century media. Harcup and O'Neill (2001) put forward what they called a "contemporary set of news values based on the findings of empirical research" (p. 276), one that they further developed in their (2017) study. Another modified framework was provided by Brighton and Foy (2007). The values listed in these models, along with most of the others, have demonstrated, despite some variation in labeling, a lot of overlapping with those in Galtung and Ruge (1965). This overlapping has also been pointed out by Bednarek and Caple (2017). Few additional values, nevertheless, have been identified, e.g., Entertainment and Good News in Harcup and O'Neill (2001), Topicality in Brighton and Foy (2007), Audio-visuals, and Drama in Harcup and O'Neill (2017).

### **News values in linguistics**

For their part, linguists who have studied news discourse have also been concerned with news values in varying degrees, though, generally speaking, it is in the last few years that linguistic studies of news values have started to gain considerable attention. Similar to communication scholars, linguists concerned with news values, have taken Galtung and Ruge (1965) as their point of departure. Bell (1991) considered it the "foundation study of news values" (p. 155). Drawing on his previous experience as a journalist, Bell provided his own model of news values, which he classified into three categories related each to one of the three main aspects of news, that is, news actors and events, the news process, and the quality or style of the news text. Of these categories, the first is the one relevant to the discourse analysis of news values. It includes the following news values: Negativity, Recency, Proximity, Consonance, Unambiguity, Unexpectedness, Superlativeness, Relevance, Personalisation, Eliteness, Attribution and Facticity.

This inventory includes almost the same factors listed by Galtung and Ruge (1965), with the addition of Attribution and Facticity. Attribution consists in the eliteness of news sources (the other "Eliteness" value is kept to elite news actors). Facticity refers to the "degree to which a story contains

the kinds of facts and figures on which hard news thrives: locations, names, sums of money, numbers of all kinds" (Bell, 1991, p. 158). These values for Bell, "drive the way news stories are gathered, *structured*, and *presented*" (Bell, 1991, p. 247, emphasis added) and they can be upgraded by journalists while producing the final story.

Linguists studying broadcast news have also been concerned with news values, notably, Montgomery (2007), who has viewed news values as principles and criteria that have to be satisfied by events to be included in news coverage. He outlined his own inventory of news values, building on Galtung and Ruge's (1965) "pioneering work", as he referred to it (Montgomery, 2007, p.5). His inventory comprises the following values: Recency/Timeliness, Intensity/Discontinuity, Scale/Scope, Conflict, Personalisation, Power, Negativity, Unexpectedness, Consonance, Proximity/Cultural relevance, Meaningfulness/Unambiguity, Composition/Fit. Apart from some slight modifications in terminology and combining of some pairs of values in single entries, Montgomery's list is similar to that of Galtung and Ruge (1965).

Within Critical Discourse Analysis (CDA) of news discourse, news values have been tackled by van Dijk (1988), Fowler (1991), and Richardson (2007). Van Dijk (1988) has emphasized that "news values reflect economic, social, and ideological, values in the discourse reproduction of society through the media" (pp. 120-121). He provided his own inventory of seven news values: Novelty, Recency, Presupposition, Consonance, Relevance, Deviance, Negativity, and Proximity. With the exception of Presupposition, van Dijk's inventory also appears to echo Galtung and Ruge's (1965) one. By Presupposition, is meant the shared background knowledge which may be partly implicit and partly summarized and which is required to comprehend novel and recent information.

Fowler (1991) has emphasized that the values are "cultural" rather than "natural" (p. 13). Thus, for him, unlike Galtung and Ruge (1965), who have distinguished between "culture-bound" and "culture-free" factors, as indicate above, all twelve factors are culture-bound. Richardson (2007) has



pointed out to the change of news values "over time, with certain longstanding features of newspapers discontinued in line with changing preferences of the readership" (Richardson, 2007, p. 93). He referred to the "demise" of the Parliament page from British newspaper as a case in point.

### **Discursive news values analysis approach**

Recently, news values have been gaining increasing attention on the part of discourse scholars, notably Monika Bednarek and Helen Caple. In a number of studies (e.g., Bednarek, 2016a, 2016b; Bednarek & Caple, 2012, 2014; Caple & Bednarek, 2013, 2016), the two authors have developed their "discursive news values analysis (DNVA)" approach and have most recently refined it in Bednarek and Caple (2017). It revolves around the systematic investigation of the role of linguistic and visual resources in establishing newsworthiness; that is, "how specific events, issues or news actors are constructed as newsworthy, for example through foregrounding particular news values" (Caple & Bednarek, 2013, p. 13). They have emphasized that their discursive approach is to be considered complementary to the other approaches developed by linguists, namely, Bell's (1991), van Dijk's (1988) and Fowler's (1991).

It is important to note that as much as Bednarek and Caple have consistently maintained that news values are constructed through discourse, they have emphasized that this does not mean that news values are reduced to discourse or that events do not have potential news values in reality. They have maintained that:

Reality is given meaning by the media. In the context of DNVA, we assume that material events are endowed with newsworthiness by the media, for example, by emphasizing or de-emphasizing certain news values in texts. . . . We also assume that the potential news value of events depends on a given sociocultural system that assigns them value. . . . There are thus constraints and opportunities that arise from the material reality of events, in terms of how they can be represented through discourse. (Bednarek & Caple, 2017, p. 51).

The present study adopted Bednarek and Caple's (2017) approach in restricting the term *news values* to the ones "concerning newsworthiness of events –their potential newsworthiness in a given community, their newsworthiness as determined by newswriters in news practice, or their newsworthiness as constructed through discourse" (p. 42). The DNVA approach is concerned with the ways in which news values are established through discourse. It "focuses on analysing how semiotic [linguistic and visual] resources construct newsworthiness in published news stories" (Bednarek & Caple, 2017, p. 45).

Building on previous research and their own empirical studies, Bednarek and Caple put forward their inventory of news values. The most recent version of this inventory, as provided in Bednarek and Caple (2017), includes the following categories (arranged alphabetically): Consonance, Eliteness, Impact, Negativity, Personalization, Positivity, Proximity, Superlativeness, Timeliness, and Unexpectedness. Definitions of these values are presented in the **Framework** sub-section below.

The DNVA approach has been adopted in a number of recent empirical studies tackling news discourse in various types of media outlets (e.g., Bednarek, 2016a, 2016b; Bednarek & Caple, 2014, 2017). Bednarek and Caple (2014) emphasized the relevance of the discursive news values analysis to CDA research, pointing out to the inadequate attention paid to news values in this research despite the ideological nature of these values, as stated explicitly or implicitly in such studies as Fowler (1991), van Dijk (1988), and Richardson (2007). They have suggested issues of which CDA can gain insight by applying the DNVA, e.g., the consistent foregrounding of a certain news value, particularly Negativity, in stories about news actors of a particular nationality or religion.

Investigating the news values in the most shared news items on Facebook was reported in Bednarek (2016a) and Bednarek and Caple (2017). Focusing on the headlines and leads (opening paragraphs) of these stories, the two studies concluded that the following news values appeared to be of particular importance in this kind of news stories: Eliteness,

Superlativeness, Unexpectedness, Negativity, and Timeliness. Bednarek (2016a) indicated that Unexpectedness and Timeliness (newness) were noticeably common in research news. Comparing Negativity and Positivity, she pointed out that Negativity was more common in the most shared news stories. Bednarek (2016b) focused on the combining of news values in broadcast news and the interrelationship between news values and attribution to news sources.

### **News values in science journalism**

The news stories investigated in the above mentioned three studies fall in the general categories of hard news, soft news, and research news. That is, research news, which can alternatively be classified as science news, has been treated like the other genres of news in terms of the discursive construction of news values. This appears in line with Badenschier and Wormer's (2012) postulation that "many *conventional* news factors should indeed be transferrable to the science coverage of the media" (p. 68, emphasis in original).

Very recently, the discursive establishment of newsworthiness in science journalism has started to gain some attention in linguistics research (Molek-Kozakowska, 2016, 2017), again with a focus on headlines and/or leads. Investigating a sample of the headlines of the most read articles in the online version of a popular science magazine, Molek-Kozakowska (2016) observed the high frequency of the following news values: Novelty, Superlativeness, and Negativity/Positivity. She has considered Novelty a "top value in journalism", particularly in science journalism as journalists underscore "the 'unprecedented pace' of scientific progress to make science news worth attending to" (p. 8). As for Negativity/Positivity, the headlines that could be assessed as positive were more common than the negative ones.

The linguistic construction of news values in a sample of popular science articles related to environmental sciences and drawn from the same popular science journal was examined in Molek-Kozakowska (2017), also

with a focus on headlines and leads. Using Bednarek and Caple's (2012) framework, she focused on the values of Novelty, Superlativeness, Timeliness, Impact and Negativity/Positivity. She argued that the lexical and grammatical devices adopted to enhance the newsworthiness of the environment-related articles served to render these articles into a form of infotainment; i.e., a type of media coverage, especially broadcast media, in which the distinction between information/news and entertainment is blurred (Jebril, 2013). This infotainment approach was also boosted by some features of conversationalization style, particularly the imperative constructs and direct address to the readers.

It appears, then, that news values in science journalism have started to gain attention in discourse studies. On the other hand, Arabic science journalism seems to represent an area which has not been explored adequately in discourse studies in general. The present study was meant as an exploratory one, conducted with the specific aim of investigating and comparing the news values established to enhance newsworthiness in English and Arabic science journalism by investigating two corpora of science news stories headlines and leads taken from the science sections of a British and an Egyptian dailies. The investigation and comparison of the news values constructed in the two corpora of English and Arabic science news texts were carried out to answer the following questions:

1. What are the similarities and differences in the relative frequency of each of these news values and their sub-types in the two corpora?
2. What are the common tendencies and variations in the combining of news values for the enhancement of newsworthiness in the two corpora?
3. What are the similarities and differences in the types of linguistic resources used in the discursive construction of the news values in the investigated English and Arabic science news texts?

## Methodology

### Data

The analysis of news values reported here was based on two corpora of science news stories headlines and leads. The first corpus, comprising 120 texts, was culled from the online version of the Egyptian daily *Al-Ahram*, and the second, also of 120, texts was taken from that of the British *Daily Telegraph/Telegraph*. The size of the data base was considered adequate for the purpose of this exploratory study and suitable for the careful manual qualitative analysis. On the other hand, the size of data base is larger than Bednarek's (2016a) 100-news text corpus (also of news stories headlines and opening paragraphs).

These two newspapers were selected for the following reasons. the *Telegraph* is a broadsheet which has been classified as one of the "United Kingdom's three market-leading daily national newspapers" (Harcup & O'Neill, 2017, p. 1475). Likewise, *Al-Ahram* is the leading national quality press outlet in Egypt.

The analyzed stories were published in the period from the beginning of August 2016 to the end of May 2017. During this period, *Al-Ahram's* weekly section *Tib wa cluum* 'Medicine and Science' published 121 news stories, which formed, with the exception of a single one,<sup>(1)</sup> the Arabic data of the present study. As for the *Telegraph*, its "Science" section is a daily one. With the purpose of selecting the same total number of stories distributed over the same defined period as that of *Al-Ahram*, the first twelve stories published each month were selected. The stories accompanied by videos were excluded since no such stories were found in *Al-Ahram* section. The availability of films has itself been considered a source of newsworthiness, as indicated by Caple and Bednarek (2013). The great majority of the news stories investigated were written by the science journalists of the two papers. Only few English ones were attributed to news agencies and very few Arabic ones appeared with no author's name.

The news values analysis carried out for the present study focused on the headlines and leads of the selected news stories. The significance of

these two elements has been consistently emphasized by linguists studying news discourse. As explained by van Dijk (1988), "main topics are signaled by the news item in headlines and leads. They define the overall situation and indicate to the reader a preferred overall meaning of the text" (p. 40). Thus, together, the headline and lead can be viewed as providing the "Summary of the news text" (p. 53). Bell (1991) has classified the lead as the news story's *abstract*, which summarizes its key action and establishes its point (just like the abstract of the personal narrative in Labov's (1972) model).

For White (1998), the headline and lead represent the position of the "maximal rhetorical prominence" (p. 401); therefore, this is where journalists provide the elements of the story deemed to be "the maximally newsworthy heart of the issue under consideration." The headline and lead, then, represent the "central 'nucleus' dominat[ing] the text [and] providing its focus or angle (White & Thomson, 2008, pp. 5-6). Accordingly, as Bednarek (2016a) indicates, the story's emphasized news values are expected to be found in the opening paragraph, i.e., lead. Hence, the focus on headlines and leads in the news values research by linguists (e.g., Bednarek (2016a; Bednarek & Caple, 2017; Molek-Kozakowska, 2016, 2017).

In both newspapers, the headlines are printed in bold. As for the lead, in the English corpus, it is typically a single sentence marked orthographically with an initial capital letter and a final period and separated from the following paragraph with a line space. In the Arabic data, on the other hand, the syntactic structure and orthographic marking of the lead were not so consistent as those of their English counterparts. Though most of the leads can be analyzed syntactically as consisting of single sentences and are marked by final periods, some stories have more complex syntactic structures and/or are marked by final commas. However, all leads are made clear enough as they are typed in bold and are also separated from the body of the story by a line space. <sup>(2)</sup>

The stories analyzed are related to various scientific fields. Issues related to medicine and health care, however, appeared to be the most commonly covered ones in the two corpora, albeit to different degrees. Stories tackling these issues accounted for 62.5% (n= 75) and 46.6% (n= 56) of the stories in the Arabic and English data, respectively. Though these two related issues were considerably less prevalent in the English corpus than in the Arabic one, it has to be noted that they were by far the most widely covered issues of all in this corpus. The second largest category, relating to environmental issues, consisted of 14 stories (11.6%).

The dominance of medical/health care news stories in media science coverage has been observed to be "internationally consistent", according to Badenschier and Wormer (2012, p. 61). Medicine came at the top of scientific fields covered in leading national German newspapers (Badenschier & Wormer, 2012; Guenther & Ruhrman, 2013). Likewise, based on their study of the science section of *The New York Times*, Clark and Illman (2006) have observed the great attention given to medicine, health, and behavioural science compared with other science issues. Studies of science coverage in British print and broadcast media have also emphasized the dominance of medicine and health care issues (Suleski & Ibaraki, 2010; Weitkamp, 2003).

### **Framework**

The framework used to analyze the news values represented in the headlines and leads of the selected science stories was that of Bednarek and Caple (2017). Table 1 presents the ten news values included in this model and their definitions, as provided by Bednarek and Caple (2017).<sup>(3)</sup>

Table 1.

*News values and their definitions in the discursive news values analysis approach*

<b>News value</b>	<b>Definition</b>
Consonance	The event is discursively constructed as (stereo)typical (limited here to news actors, social groups, organizations, or countries/nations)
Eliteness	The event is discursively constructed as of high status or fame (including but not limited to the people, countries, or institutions involved)
Impact	The event is discursively constructed as having significant effects or consequences (not necessarily limited to impact on the target audience)
Negativity	The event is discursively constructed as negative, for example, as a disaster, conflict, controversy, criminal act
Personalization	The event is discursively constructed as having a personal or ‘human’ face (involving non- elite actors, including eyewitnesses)
Positivity	The event is discursively constructed as positive, for example, as a scientific breakthrough or heroic act
Proximity	The event is discursively constructed as geographically or culturally near (in relation to the publication location/ target audience)
Superlativeness	The event is discursively constructed as being of high intensity or large scope/ scale
Timeliness	The event is discursively constructed as timely in relation to the publication date: as new, recent, ongoing, about to happen, or otherwise relevant to the immediate situation/ time (current or seasonal) <sup>(4)</sup>
Unexpectedness	The event is discursively constructed as unexpected, for example, as unusual, strange, rare

(Bednarek & Caple, 2017, p. 55)



More explanations of these values are included in the presentation of the findings of analysis in the following section.

**Findings**

The analysis of the Arabic and English corpora of science news stories indicated that the newsworthiness of these stories was reinforced through the discursive construction of the following news values: Eliteness, Impact, Negativity, Positivity, Proximity, Superlativeness, Timeliness (Newness), and Unexpectedness. Table 2 presents the total frequency of the major news values, arranged according to their respective total numbers in the two corpora. Two preliminary observations need to be made. First, two of the values in Bednark and Caple's (2017) inventory, namely, Consonance and Personalisation, were too infrequent in the data of the present study to be of any significance. Second, Negativity and Positivity were predominantly inseparably combined with other values, in particular, Impact, Proximity, and Superlativeness. Accordingly, they provided a basis for classifying the sub-types of the three respective values and were included within their respective sections.

Table 2

*Frequency of news values constructed in the English and Arabic news stories*

News value	English		Arabic	
	Count	Percentage	Count	Percentage
<b>Eliteness</b>	71	59.16	101	84.16
<b>Superlativeness</b>	65	54.16	75	62.5
<b>Proximity</b>	47	39	89	74
<b>Newness</b>	59	49.1	58	48.33
<b>Impact</b>	62	51.66	40	33.33
<b>Unexpectedness</b>	22	18.33	4	3.33

*Notes.* Count consistently refers to the number of the texts in which the news value or any other construct is identified.

Percentage is to the total number of texts in each corpus.

In terms of the relative frequency of the news values shown in the table, the two corpora were similar in the most and least frequently established of these values, namely, Eliteness and Unexpectedness, respectively. As for the other news values, in the English corpus, Superlativeness came second in the order of frequency; Impact came third, Newness came fourth, followed by Proximity. The second most frequently constructed value in the Arabic corpus was Proximity, the third was Superlativeness, the fourth and fifth were Newness, and Impact, respectively. The following sub-sections deal each with one of these values in the order of their total frequency in the whole data base, with the exception of Superlativeness, which is the last news value to be presented as it has been identified in contexts involving all the other news values, especially (positive/negative) Impact, as will be made clear in the examples.

### **Eliteness**

As shown in Table 2, Eliteness was by far the most commonly constructed news value in the two corpora of science news stories headlines and leads analyzed for the present study. As defined above, Eliteness refers to the discursive construction of the news event, including people, institutions/organizations and countries, as of high status. The analysis revealed that Eliteness of news actors/sources, i.e., people and institutions, as well as Elite countries was established in the two corpora. As indicated by Bednark and Caple (2017), Eliteness considerations are audience-dependent. It can be assumed, however, that the Eliteness of certain types of professions and organizations/institutions may be recognized independently of national or cultural variation. Thus, in science news stories, such institutions as academic departments, universities, research centres, and specialized scientific societies will be recognized as elite for audiences of different national and cultural backgrounds. The same goes for such professionals as scientists, researchers, and doctors.

The relative focus given to each of the three dimensions of Eliteness and the types of linguistic resources employed in their construction demonstrated some interesting similarities and differences, as explained below. The analysis revealed that the news value of Eliteness was more common in the Arabic corpus (Table 2). The two corpora also varied in the relative focus given to the three dimension of Eliteness, as shown in Table 3.

Table 3

*Relative frequency of the three types of Eliteness in the two corpora*

Type of elite entity	English		Arabic	
	Count	Percentage	Count	Percentage
<b>People</b>	61	85.91	63	62.37
<b>Institutions</b>	17	23.94	77	76.23
<b>Countries/states/cities</b>	1	1.408	14	13.86

*Notes.* Percentage is to the total number of news stories demonstrating Eliteness in each corpus.

The total number of texts that contain the three types in each corpus is larger than that of the texts coded for Eliteness in general, shown in Table 2, as the same text can contain more than one type.

In addition to the differences in the relative frequency of the three types, differences were identified in the discursive construction of Eliteness, especially people Eliteness. The *Telegraph* journalists tended to refer to elite news actors/sources generically as *scientists/researchers/psychologists/experts*, even mostly without their affiliations. For example,

- (1) **Scientists** discover the 'beautiful' secret of how memories are made (H)

**Scientists** have discovered the secret of how memories are made - the brain makes two copies of every event, in a discovery they described as “beautiful”. (L) (07 April 2017) <sup>(5)</sup>

- (2) Boys' voices at seven can reveal what they will sound like as adults, **psychologists**\_find (H) (05 October 2016)

*Al-Ahram* journalists, on the other hand, tended to qualify references to unnamed groups of scientists by their affiliations, specializations, and/or number, e.g., *fariiqun mina-l-baθhiina-l-mutaxaSSiSiina bi-kulliyyati-z-ziraacah* 'a team of specialized researchers at the Faculty of Agriculture', *al-ʔaTibaaʔu-f-jubbaanu bi-Tibi-l-qaSri-l-cayyni* 'young doctors at [Cairo University Faculty of Medicine], Kasr Al Ainy', and *ʔalfu Tabiibin mutaxaSiS* 'one thousand specialized doctors'<sup>(6)</sup>.

As for individual researchers, they are hardly named in the headline/lead of the *Telegraph* news stories, but their newsworthiness is justified by their role label or a particular merit, e.g., *the government chief medical officer, the editor of the British Medical Journal, a prize-winning neuroscientist*. Names and affiliations of scientists (at least these of the leading researcher) were normally provided in the body of the news story. The only scientist named in the headline/lead of a single article is the world celebrity astrophysicist and science popularizer, Stephen Hawking. He represents a case of news actors/sources that are "recognizable to the target audience and of high status" (Bednarek & Caple, 2017, p. 83).

*Al-Ahram* journalists, on the other hand, tended to provide the names of individual news actors/sources, mostly with their positions and affiliations, in the leads of news stories. For example,

- (3) *naaqafa-l-muḥamaru- d-duwliyyu-s-saadisu li-l-fiziyaaḥi- wa-l-laḍi naḌamat-hu kulliyatu culuumi-l-qaahirah ...bi-riḥaasati-d-dukтуurah luṬfiyya-n-naadi ḥustaaḍati-l-fiziyaaḥi-n-nawawiyiyati wa raḥisi-l-muḥamar, wa bi-muḥaarakati culamaaḥin min miSr wa ḥalmanya wa rusya wa-l-hind-ḥaḥdaḥa- d-d-iraasaati-l-baḥḥiyyati fii magaali-l-fiziyaaḥi-n-naḌariyyati wa-t-taṬbiqiyiyati wa s-stixdammati culuumi-l-l-izar wa taṬbiiqaati-hi fii kaafati-l-magaalat*

The Sixth International Conference of Physics, which was organized by the Faculty of Science, Cairo University under the title "Recent trends in Physics" and **chaired by Dr. Lotfiya Al-Nadi, Professor of Nuclear Physics**, with scientists from Egypt, Germany, Russia and India participating, addressed the latest research studies in theoretical and applied physics and the laser science uses and applications in all fields. (L) (25 December 2016)

The Eliteness of the news actor here is multi-faceted, driven from the profession, the status within the profession, and the easily inferred affiliation. This multi-sourced Eliteness has been observed for almost all the

similar cases, demonstrating "the twin task [faced by journalists] of naming the news actors ... and of justifying their newsworthiness by describing or labeling them" (Jucker, 1996, p. 376).

Similar to the English set, reference was made to one scientist, namely, the celebrity chemist, Mostafa El-Sayed, in the headline and lead of a story about his appointment as the new Chair of Zewail City of Science and Technology. Unlike the case of Stephen Hawking, his Eliteness was further established in the lead by such expressions as *al-caalimu-l-miSriyu-l-kabiir* 'the great Egyptian scientist', *al-ʔustaadu bi-gaamiciti jurjiya tik* 'the professor at the University of Georgia Tech', and *wa-l-ḥaaSilu haaḏaa-l-caami cala gaaʔzati bristli li-l-ʔingazaati-l-mutamayyizati fi caalimi-l-kimyyaʔ* 'who was awarded the Priestley award for the distinguished achievements in the field of chemistry this year'. This is a further example of a multi-faceted Eliteness of news actors/sources.

As for reference to elite organizations/institutions, such as universities, research centres, and specialized scientific societies/agencies, the analysis revealed considerably more instances in the Arabic data (Table 3). Arabic examples are: *gaamicatu-l-ʔiskandariyyah* 'Alexandria University', *al-markazu-l-qawmiyyu-li-l-biḥuuθ* 'National Research Centre', and *al-gamciyyatu-l-miSriyyatu-li-l-ḥasaasiyyati wa-l-manacah* 'The Egyptian Society for Allergy and Immunology'. In the English data reference was made to such elite institutions as *University of Leicester*, *The London School of Economics*, and *The Environment Agency*.

The difference in the frequency of reference to elite institutions reflects a significant variation in the type of news actors/sources in the two sets. The *Telegraph* journalists tended to depend on published research for their science coverage, whereas *Al-Ahram* journalists preferred to cover scientific conferences and other scientific activities of the Egyptian scientific institutions. This difference can be indicated by the frequency of occurrence of the nouns *muʔamar* 'conference' and *diraasah/bahθ* 'study/research' in the two corpora. In the Arabic corpus the noun *muʔamar* 'conference' occurred in 35 news stories, that is, 29% of the news stories comprising the whole corpus were based on conference coverage, which

called for mentioning the organizing institutions. In the English data the noun *conference* was not identified at all, neither were any semantically related nouns.

On the other hand, in the *Telegraph* corpus, the "semiotic research products", as they were labelled by Bednarek and Caple (2017, p. 206), *study/research* and less commonly, *report*, *survey*, *trial* and *audit* were identified in 39 stories. That is, 32.5% of the stories investigated were marked directly as based on published research. In the Arabic data, the equivalent nouns *diraasah/baḥḥ* (study/research) or their plurals *diraasaat/ḥabḥaaḥ* (studies/researches) were identified in 18 reports (15%); that is, the Egyptian journalists did also give some attention to the published research as a source for their stories. In this context again, they tended to mention the researchers' names and/or affiliations.

Reference to elite countries/states/cities was identified in 14 Arabic texts and a single English one. As for the decision of what nations are considered elite, Harcup and O'Neill (2001) have convincingly argued that "definitions of elite nations will be culturally, politically and economically determined and will vary from country to country, although there may be universal agreement about the inclusion of some nations (e.g., the USA) among the elite" (p. 263). Galtung and Ruge (1965) referred to the "elite northwestern corners of the world .... [including] traditional powers [such as] Belgium, France, the USA, and Britain" (p. 73). Fowler (1991) referred to the "dominating status of North America, Japan, Europe and Russia in world politics and cultural affairs" (p. 15). Such were the nations identified as elite in the data of the present study, in addition to China.

*Al-Ahram* journalists opted for establishing the Eliteness of the covered events, especially when reporting research published in international scientific journals, by specifying the country of origin of the researchers and/or institutions, e.g., *al-kulliyatu-l-malakiyatu li-l-ḥaṭṭibaaḥi bi-ngiltra* 'the Royal College of Physicians in England'. Coverage of international conferences was another context of reference to elite nations/states, e.g., *muḥṭamaru-l-ḥakadimiyyati-l-ḥalḥamriikiyati li-Tibi-l-*

*cuyuun bi-flurida* 'Conference of the American Academy of Ophthalmology in Florida'. In the two cases, the Eliteness of the institution was combined with country Eliteness.

The only case that was identified as country Eliteness in the English data was included in a reference to the *US surgeon general* in the headline and lead of a story about the hazards of E-cigarettes. The Eliteness here was multi-sourced, as the news actor Eliteness was established by his post as the *surgeon general* and boosted by the fact that he occupied this post in the USA. <sup>(7)</sup>

### Proximity

Proximity, as indicated above, refers to discursively highlighting the geographical and/or cultural closeness of the event to the target audience, which will ensure its "meaningfulness" to that audience (Galtung & Ruge, 1965, p. 70). The analysis revealed that *Al-Ahram* science journalists had a stronger tendency to ensure newsworthiness through establishing the geographical and cultural Proximity of the reported events than did their *Telegraph* counterparts (Table 2). The events established as geographically and/or culturally close in each set were classified as positive, negative, or neutral, which represented another aspect of variation in the two corpora. The relative frequency of the combining of Proximity with positively/negatively/neutrally focused events is given in Table 4.

Table 4

*Frequency of combining Proximity with positive/negative/neutral events*

Proximity	English		Arabic	
	Count	Percentage	Count	Percentage
<b>Positive</b>	19	40.4	62	70
<b>Negative</b>	23	49	17	19
<b>Neutral</b>	5	10.6	10	11
<b>Total</b>	47	100	89	100

*Note.* Percentage is to the total number of texts demonstrating Proximity.

As shown in the table, positively-orientated stories dominated in the Arabic texts. Proximity combined with Negativity featured considerably less frequently. In the English data, on the other hand, Proximity was combined with Negativity more frequently than with Positivity. Neutral events in this context were reported with almost the same relative frequency.

Cultural/geographical Proximity in the Egyptian data was established largely by the noun *miSr* (Egypt), its derivative adjectives modifying institutions and scientists, and the names of domestically familiar institutions, e.g., *al-markazu-l-qawmiyyu-li-l-biḥuuθ* 'the National Research Centre', in addition to names of universities and governorates. The following two examples show how newsworthiness was reinforced by the construction of the Proximity news value combined with Positivity in the Arabic texts.

(4) *fi-l-muḥamari-l-xaamisi-liTibi-l-ḥaTfaal miSru xaaliyatun mina-d-darani qariiban* In the Fifth Conference of Pediatrics **Egypt** [will be] **free from** tuberculosis soon (H) (13 November 2016)

(5) *18 (ḥamaani cafrata) baḥiḥan yazracuuna maḥaaSiila-n-naqli bi-saynaa?*

*nagaḥa fariiḡun mutakaamilun min ḥamaani cafrata baḥiḥan fi ḥamaaniyati taxaSuSaatin cilmiyyatin bi-l-markazi-l-qawmiyyi-li-l-biḥuuθ min xilaali mafruucin baḥiyyin badaḥa caami 2013 (ḥalfayni wa ḥalaaḥati cafr) fi-s-stizraaci maḥaaSiili-n-naqli (al-gawzi wa-l-lawzi wa-l-fustuq) fi misaaḥaatin tagriibiyatin bi-ḥaraaDi muḥaafaḐti saynaaḥ-l-ganuubiyyati bi-manTiqati sant katriin*

Eighteen researchers cultivate nuts in **Sinai** (H)

An integrated team of eighteen researchers in eight scientific specializations at the **National Research Centre** has **succeeded in** cultivating nuts (walnuts, almonds, and pistachios) in experimental areas in the **St Catherine region in South Sinai Governorate**. (L) (21 May 2017)



In example (4), Proximity, established by the noun *miSru* 'Egypt', is combined with Positivity: *xaaliyatun mina-d-darani*, 'free from tuberculosis'. Example (5) shows Proximity construed more than once. The first time, the prepositional phrase, *bi-l-markazi-l-qawmiyyi-li-l-biħuuθ* 'at the National Research Centre', functions to establish both Proximity and Eliteness as it is a culturally/geographically close elite institution. Eliteness is also constructed by reference to the elite actors, (*θamaani cafrata*) *baaħiθan* 'Eighteen researchers'. The second aspect of Proximity, is established through *muħaafaĐati saynaaħi-l-ganuubiyyati bi-manTiqati sant katriin* 'the St Catherine region in South Sinai Governorate'. Positivity is established lexically by the verb *nagaħa* 'succeeded'.

Proximity in The *Telegraph* corpus was similarly established by such words as *Britain, Britons, British, London, Harvard, and Cambridge*. Similar to the Arabic corpus, the English corpus demonstrated the combining of Proximity, Eliteness, and Positivity, as in the following examples:

- (6) **The British Red Cross** has launched a voice-activated app which tells people how to deal with household medical emergencies such as seizures or burns. (L) (12 April 2017)
- (7) Genetically modified wheat could be **grown** in **Britain** from next spring (H)
- Genetically modified wheat could be **grown** in **Britain** from next spring after scientists applied to the Department for the Environment for permission to begin trials which could boost grain yields by up to 40 per cent, in a 'world's first' experiment. (L) (04 November 2016)

In example (6), the noun phrase *The British Red Cross* establishes Proximity and Eliteness simultaneously, providing an instance of a "noun phrase package[ing] several news values", which stems from the "noun phrase's general capacity for informational density and makes it a useful device for **encapsulating** newsworthiness" (Bednarek & Caple, 2017, p. 215, emphasis in original). In addition, this familiar elite entity is the actor

of a positive event, one more news value (Positivity). This last news value is combined with the first two this time "across phrases" (Bednarek & Caple, 2017, p. 215).

Example (7) also demonstrates the combining of Proximity, Positivity, and Eliteness. First, Proximity is established in the headline and lead by reference to *Britain*. Second, the Positivity of the event is constructed by verb *grown* again both in the headline and lead. The elite news actors, *scientists*, and *Department for the Environment* constitute the third news value. (The example also shows the values of Newness, positive Impact, and Superlativeness, which will be the presented below.)

The construction of Proximity in news stories reporting negative events in the Arabic and English corpora is demonstrated in examples (8) and (9), respectively:

- (8) *8 (θamaaniyatu) aalaafi Tiflin miSriyyin yucaanuuna Daafas-samaci sanawiiyyan*

Eight thousand **Egyptian** children **suffer from hearing impairment** annually (H) (05 March 2017)

- (9) **Cholera to return to Britain** as warming seas push deadly bugs north (H)

**Deadly bacteria related to cholera will build up around British shores** as warming oceans fuelled by climate change push the **bugs** northwards. (L) (19 September 2016)

### Newness

"'New' is the key word of advertising, and one of the main factors in news selection" (Bell, 1995, p. 320). For the news to "sell", it has to be "novel" and "fresh", in the words of Catenaccio et al. (2011, p. 1844). The analysis revealed that Newness was constructed almost in the same number of news stories in the two corpora (Table 2). Also, in the two corpora, Newness was established largely lexically. In addition, the superlative *first (of kind)* also functioned in this context. This particular device has been considered "one of the commonplace superlatives of news . . . [one that

establishes] novelty" (Bell, 1995, p. 306). Table 5 presents the linguistic resources used for this purpose. Examples are taken from the news stories investigated.

Table 5

*Lexical resources for establishing Newness*

Lexical resource	English Examples	Arabic Examples
Adjectives	<i>new</i>	<i>gadiid/hadiiθ</i> 'new' <i>mubtakarah/ʔbtikaariyyah</i> 'innovative', <i>muta Tawwirah</i> 'developed'
Nouns	–	<i>al-gadiid</i> 'the new', <i>tagdiid</i> 'renewing', <i>al-mustagadaat</i> 'updates', <i>mubaadarah</i> 'initiative', <i>ʔbdaac</i> 'creativity', <i>taxliiq</i> 'synthesis', <i>ʔTlaaq</i> 'launching' .
Verbs	<i>discover, find, reveal</i>	<i>yabtakiru</i> 'innovate'
Superlative <i>first</i>	<i>the first country in the world to ban sale of ivory antiques</i>	<i>ʔwal markazin baħḥiyyin nawawiyyin li-diwali-l-farq-i-l-ʔawsaT</i> 'the first nuclear research centre in the Middle East'

In the English data, since a considerable number of the news stories were based on published research, as indicated above, Newness was established largely by means of the two lexical devices, shown in the table. The first, the adjective *new*, occurred prevalingly as the pre-modifier of the nouns *study/research*, as in the following example:

- (10) Putting babies in front of iPads before the age of two stunts speech development, a **new** study suggests (04 May 2017)

The verbs *discover*, *find*, and *reveal* in the context of presenting research discoveries and findings represented the second lexical resource of establishing Newness. Verb *find* in particular has been observed to serve the same function by Bednarek and Caple (2017, p. 210). In example (11), both the verbs *find* and *discover* are used to construct the Newness of the reported event.

- (11) Scientists **find** 5 life skills which bring health, wealth and success (H)

The five life skills which bring health, wealth and success throughout life have been **discovered** by scientists. (L) (10 April 2017)

Compared with the ones used in the *Telegraph* news stories, the linguistic resources of establishing Newness in *Al-Ahram* corpus represented a wide variety, a sample of which is shown on Table 5 above. On the other hand, the use of verbs equivalent to *discover* and *find*, the common resource in the English data, was hardly identified in the Arabic corpus. Example (12) illustrates the use of the adjective *ʔibtikaariyyah* 'innovative' to establish the newsworthiness of the reported event.

- (12) *hīluulun-ʔibtikaariyyatun limuʔkilaati-l-kahrabaaʔi wa-T-Taaqati wa-l-kaffi cani-l-vayrusaat*

**Innovative** solutions for the problems of electricity, energy, and virus detection (H) (19 February 2017)

In the following example, three lexical resources are combined in the establishment of Newness:

- (13) *ʔTlaaqu ʔalaaʔi mubaadraatin li-taTwiiri-t-tacliimi bi-miSr*  
The **launching** of three **initiatives** for **developing** education in Egypt (H) (25 September 2016)

In Examples (11), (12), and (13), Newness is combined with positive Impact. It can be argued, following Hyland (2010), that the newsworthiness has been established by changing "academic claims . . . into scientific breakthroughs and present[ing] [them] in terms of what is of immediate

value or potential benefit to readers" (p. 120). The same observation can be made about the other examples of Impact to be presented in the following section.

**Impact**

The news value of Impact, as indicated above, consists in the discursive construction of the event as having newsworthy significance or consequences. The criteria of significance and effect on the audience's own lives appear closely related to science news stories and may even account in part for the dominance of medical and health related news stories that appear in the daily and weekly newspaper science sections, as pointed out above. The analysis revealed that the Impact news value appeared to be inseparable from Positivity/Negativity, Impact being typically constructed as positive or negative. The Impact value was constructed generally more frequently in the English texts. (Table 2). Table 6 shows the relative focus given to positive and negative Impact in each corpus.

Table 6

*Frequency of positive and negative Impact in the English and Arabic corpora*

Impact	English		Arabic	
	Count	Percentage	Count	Percentage
<b>Positive</b>	33	53.2	28	70
<b>Negative</b>	29	46.8	12	30
<b>Total</b>	62	100	40	100

*Note.* Percentage is to the total number of texts in which the Impact news value is constructed.

In the two corpora, positive Impact was given more focus than negative Impact, though more noticeably so in the Arabic corpus. The analysis of the Impact value, on the other hand, revealed two significant aspects of similarity between the two corpora. The first one was related to the dominance of medical or health-related issues in the stories in which the Impact value was established. Such issues were addressed in 36 texts out of 40 (90%) and 37 out of 62 (about 60%), in the Arabic and English data,

respectively. The remaining stories reported issues that can also be considered of direct relevance to the audience's lives, e.g., the environment, behavioural science, and computer technology.

The types of linguistic resources of constructing the Impact value demonstrated the second aspect of similarity between the two corpora in this respect. Both in the *Telegraph* and *Al-Ahram* corpora positive/negative Impact was established largely through lexis. In addition, positive Impact in a few English texts was established by means of directive speech acts. The main types of linguistic resources employed for establishing positive Impact are listed in Table 7 with examples from the two analyzed corpora.

Table 7

*Linguistic resources for establishing positive Impact*

Linguistic resource	English Examples	Arabic Examples
Verbs with positive connotations	<i>create, help, promise</i>	<i>tusaacidu</i> 'help', <i>yuhassinu</i> 'improve'
Verbs referring to counteractions to undesirable conditions	<i>clear away, clear out, halt, prevent, reduce, solve, ward off</i>	<i>tuhidu min</i> 'constrain', <i>tuqalilu min</i> 'reduce'
Nouns	<i>cure, hope</i>	<i>al- [ ifaa?</i> 'cure', <i>tahsun</i> 'improvement', <i>kafaa? ah</i> 'efficiency'
Nominals referring to counteractions to undesirable conditions	<i>treatment</i>	<i>cilaag</i> 'treatment', <i>a-t-tağalubu</i> calaa 'overcoming', <i>a-s-sayTaratu</i> calaa 'controlling'
Adjectives	<i>bright, good</i>	<i>ğaminun</i> 'safe'
Directive speech acts	<i>Care homes should house students to stop 'age apartheid' between old and young</i>	—

The following example illustrates the construction of positive Impact in the *Telegraph* science news stories. (For the sake of clarity, the discussion in this section will focus on the combining of Impact with Positivity/Negativity, ignoring for the moment other values established in the same examples.)

- (14) **Hope** for troops as antibiotics show they could be 'exciting new **treatment**' for PTSD (H)

A **simple** course of antibiotics could **dramatically reduce** the distress experienced by people suffering from Post Traumatic Stress Disorder (PTSD), a new trial has found. (L)  
(4 April, 2017)

As shown in Example (14), the Impact range can be reinforced by evaluative expressions such as *dramatically*.

Positive Impact established by directive speech acts is illustrated in Examples (15) and (16).

- (15) Can't sleep? Insomniacs **should** try camping, say scientists (H) (03 February 2017)

- (16) Want to be more **empathetic**? **Listen** to your heart (beat), scientists say (H) (2 May 2017)

The use of the directive modal *should* in Example (15) and the imperative-form verb *listen* (example 16), following the elliptical direct questions, represents cases of conversationalization, that is "the modelling of public discourse upon the discursive practices of ordinary life, 'conversational' practices in a broad sense" (Fairclough, 1994, p. 253). This, in turn, serves as an attempt by the journalists to enhance the newsworthiness of the reported issues by underscoring their direct relevance to the audience's lives (Hyland, 2010).

Actually, *Relevance* is the label given to the Impact value by van Dijk (1988) and Bell (1991), who have both explained it in terms of the closeness of the reported event to the audience's experiences and how it affects their lives. In other words, the texts in examples (15) and (16) can be

considered instances of the "Usability factor" of selecting science news stories, which involves giving "advice for daily life (medical, technical. . .)" (Badenschier & Wormer, 2012, p. 66).

The construction of positive Impact in *Al-Ahram* science news stories is illustrated in the following example.

(17) *li-l-hifaaDi cala-S-Sihati-l-caamahti wa-l-bii?ati-l-muhiiTah .. fariiqun*

*baḥṯiyyun yabtakiru murakaban bayuluujiyyan li-mukaafahati -l-bacuuD*

*tamakana fariiqun mina-l-baḥṯiina-l-mutaxaSSiSiina bi-kulliyyati-z-ziraacati mini-btikaari murakabin mina-z-ziyuuti-n-nabaatiyyati-T-Tabiiciyyati yumkinuhu-t-taxaluSa nihaa?iyyan min-l-bacuuDi wa bifaklin ḥaminin calaa Sihati-l-?insaani wa-l-bii?ati-l-muhiiTati bi-hi*

For the **protection** of health and the environment.. a research team innovates a **biological** compound to **fight** mosquitoes. (H)

A team of specialized researchers at the Faculty of Agriculture has managed to innovate a compound of **natural plant oils** which can **get rid of** mosquitoes entirely and **safely** health-wise and environment-wise. (L) (5 February 2017)

Various devices are used in this example to establish positive Impact, e.g., the prepositional phrase *li-l-hifaaDi cala* 'for the protection of' and the two nouns referring to countermeasures against undesirable conditions, *a-t-taxaluSa min* 'getting rid of' and *mukaafahati* 'fighting'. The three adjectives *nabaatiyyati* 'plant', *Tabiiciyyati* 'natural', and *bayuluujiyyan* 'biological' in this context all add up to the Positivity of the event, all three are commonly used to indicate eco-friendly products.

Similar to positive Impact, negative Impact was established mostly lexically in the two corpora. Table 8 provides the main types of negative



lexical resources employed in the establishment of negative Impact with examples from the two corpora.

Table 8

*Lexical resources for establishing negative Impact*

Lexical resource		English Examples	Arabic Examples
Verbs with negative connotations		<i>damage, distort, ruin, suffer, threaten</i>	<i>yuhadidu</i> 'threaten' <i>taqtulu</i> 'kill'
Causal verbs followed by nouns with negative connotations		<i>put . . . at greater risk, leaving . . . at greater risk</i>	<i>tuʔadii ʔila-ntifaari mucDami-l-fiTriyyaat</i> 'lead to the spread of most fungi', <i>tusabibu-l-badanata</i> 'cause obesity'
Nouns		<i>disorder, pollution, problems</i>	<i>ħawadiθ</i> 'accidents', <i>rukuud</i> 'stagnation'
Causal nouns/gerunds followed by other nouns with negative connotations		<i>developing asthma</i>	<i>muθiiran qawiyyan liħiduuθi-n-nawbaat</i> 'strong stimulant for the occurrence of attacks'
Adjectives		<i>harmful, unsafe</i>	<i>Daarrah</i> 'harmful'

Examples (18) and (19) show the construction of the negative Impact in the *Telegraph* science news stories.

(18) Heartburn drugs for pregnant mothers **linked to** baby **asthma** (H)

Mothers who take heartburn medication during pregnancy may be **putting** their babies at a **greater risk** of developing **asthma**, new research has found. (L) (9 January 2017)

- (19) E-cigarettes are **unsafe** and ‘major public health **concern**’ for young people, **warns** US surgeon general (H)

E-cigarettes are **leaving** young people at **risk** of **nicotine addiction**, brain development **problems** and mood **disorders**, the US surgeon general has **warned** in a **wide-ranging** report published today. (L) (8 December 2016)<sup>1</sup>

As shown in Example (18), the participial adjective *linked*, though not inherently negative, was used only in the context of negative effects. The relevance of the reported issue to the audience's lives is emphasized by the verbs *warns* and *has warned* in the headline and lead of Example (19), respectively. The evaluative adjective *wide-ranging* in the lead appears to be meant for the same function. The potential negative Impact may be highlighted even more strikingly by initiating the headline with the verbal noun *Warning*, which can count as another instance of conversationalization, as shown in the following example:

- (20) **Warning:** fast food packaging and grease-proof paper contain **potentially**

**harmful** chemicals (H)

Some fast food packaging contains **potentially harmful** chemicals that can leach into food, **warns** a new study. (L) (01 February, 2017)

The following Arabic example illustrates how negative lexis establishes negative Impact, which is meant to present the issue as of direct relevance to the audience's lives.

- (21) *yuctabaru-d-dimaaḡu min ʔakθari wa ʔahami ʔacDaaʔi-l-gismi taʔθuran bi-l-cawaamili-l-xaarigiyyati wa-l-lati qad la nuciiruha-l-ihtimama-l-kaafiyya fii ḥayaatina-l-yawmiyyah faqad yumaarisu-l-ʔinsaanu-l-cadiida mina-l-mumaarasaati wa-l-cadaati-D-Daarati-l-lati taqtulu xalaya-d-dimaaḡi wa tatasababu fi ḥalati-r-rukuudi-l-caqliyyi wa huwa la yudrik*

The brain is considered one of the most important body organs affected by external factors, to which we may not be giving sufficient attention in our daily lives. Man can unconsciously develop many **harmful** practices and habits which

**kill** the brain cells and **cause a state of mental stagnation.**

(L) (18 September 2016)

The examples in this section demonstrate how the Impact news value has been typically established as positive or negative, i.e., the combining of the news values of Impact and Positivity/Negativity. In this sense, Impact may be discursively constructed as positive or negative. One final observation needs to be made concerning the negative-Impact examples. Texts showing negative impact, especially the ones addressing medical and public health issues, can be said to reflect positively on the audience, as they mostly provide direct or indirect *warnings* to the target audience, as in Examples (19), (20), and (21). This may be a characteristic of science news reporting. A similar observation was made by Molek-Kozakowska (2017).

### **Unexpectedness**

Unexpectedness involves the discursive construction of the event as unusual or strange, with elements of contrast. (Bednarek & Caple, 2017). Compared with the other news values, Unexpectedness was not a common one in the two corpora, especially in the Arabic (Table 2). The following two examples, taken from the *Telegraph* and *Al-Ahram*, respectively,

illustrate how journalists establish Unexpectedness by highlighting contrast between the reported event and what is assumed to be the case.

- (22) Chickens exhibit **Machiavellian tendencies**, scientists discover (H)

Chickens are **not as 'bird brained' as previously thought**. (L) (03 January 2017)

- (23) *qad yuxayyalu lil-bacDi cinda samaaci muSTalaḥi-z-ziraacati-l-maaḥiyyati ḡannaha Tariiqatun taḥtaagu li-kimmyaatin ḡakbara mina-l-miyaah laakinna-l-ḥaqiiqata bixilaafi ḡaalika, fahaadihi-T-Tariiqati tuwafiru ḡakḡara min xamstin wa ḡamaaniina fi-l-miḥiti mina-l-miyahi-l-l-ati taḥtaaguha-z-ziraacati fi-t-turbati-l-caadiyyah*

When they hear the term hydroponics, some may imagine that it is a method that requires more water, **but the fact** is that **this method saves more than 85% of the water needed for agriculture in the normal soil**. (L) (22 January 2017)

In Example (22) the Unexpectedness of the scientific discovery is established in the headline metaphorically by *Chickens exhibit Machiavellian tendencies*. It is then enhanced by highlighting the contrast between what is *previously thought* and this discovery. This contrast is used again to establish the newsworthiness of the reported research finding. Similarly, in the Arabic example, the contrast is made explicit between what 'some may imagine' *yuxayyalu lil-bacDi* and the 'fact' *al-ḥaqiiqata*. The two examples, then, demonstrate "element[s] of surprise and/or contrast" (Harcup & O'Neill, 2001, p. 279), which reinforces newsworthiness.

The unexpected event or issue may be established as having a large scope, i.e., Unexpectedness is combined with Superlativeness. The following section addresses the news value of Superlativeness and how it combines with other news values, including Unexpectedness, to enhance the newsworthiness of events by constructing their magnitude.

**Superlativeness**

The newsworthiness of an event can be justified by constructing the event as "being of high intensity or large scope/scale" (Bednarek & Caple, 2017, p. 93); in other words, establishing the event's Superlativeness. The news value of Superlativeness was established more frequently in *Al-Ahram* corpus than in the *Telegraph* one, though it ranked higher in the order of frequency within the latter corpus (Table 2). The analysis also revealed that in the two corpora the news value of Superlativeness tended to be combined with Positivity/Negativity. In few cases in each corpus, the focus was given to the magnitude of the research discovery or findings, rather than its positive or negative ramifications. Table 9 presents the relative frequency of each type.

Table 9

*Frequencies of Superlativeness presented as positive/negative/neutral*

Superlativeness	English		Arabic	
	Count	Percentage	Count	Percentage
<b>Positive</b>	27	41.5	39	53
<b>Negative</b>	27	41.5	32	43
<b>Neutral</b>	11	17	3	4
<b>Total</b>	65	100	74	100

*Note.* Percentage is to the total number of texts in which Superlativeness is established.

Despite the difference in the overall frequency and the relative focus given to positive/negative/neutral Superlativeness, the two corpora, demonstrated similarity in the types of linguistic recourses used for constructing this value. The main devices are listed in Table 10 with examples from the news stories analyzed for the present study.

Table 10

*Linguistic resources of establishing Superlativeness*

Linguistic resource	English examples	Arabic examples
Superlative adjectives	<i>the worst effects of the flu</i>	<i>ʔahamu-l-maraakizi-l-baθiyya</i> 'the most important research centre'
Comparative adjectives	<i>more accurate survival prognosis, tunes ... catchier than others</i>	<i>ħayaatun ʔafDal</i> 'better life'
Specific numerals	<i>1500 crimes, half the chance of suffering, 15 percent increased risk</i>	<i>θlaaθuun caaman mina-d-diraassat</i> 'thirty years of study', <i>bimucadali-θ-θuluθ</i> 'by rate of one-third'
Vague numerals	<i>millions of Londoners, hundreds of traffic accidents</i>	<i>miʔaatun min-namaaθigi-T-Tulaabi-l-muʔaarkiin</i> 'hundreds of models of the participating students'
Grammatical or lexical intensifiers	<i>all patients, super giant star, extreme form of beauty, bone-chilling weather</i>	<i>kaafatu-l-mustaffayaat</i> 'all hospitals' <i>fadiidatu-S-Sucuubah</i> 'very difficult'
Metaphors	a black hole that's taken a record-breaking decade to devour a star - and it's still chewing away	<i>al-ħarbu cala maraDi</i> . . . 'war on the disease of . . .'
Repetition	<i>a galaxy far, far away</i>	—

The use of these resources to construct Superlativeness in the two corpora is illustrated in the examples below. The examples will also make clear how Superlativeness is combined with Positive/Negative impact. First, the following two examples show the Superlativeness of positive Impact in the English corpus

- (24) The robotic brain surgeon will see you now: **drill can perform** complex procedures **50 times faster** (H)

Scientists have revealed a robotic drill that can **cut the most sensitive brain surgery down from two hours to two and a half minutes.** (L) (01 May 2017)

- (25) Bumblebees make flowers grow **bigger** and smell **sweeter** (H)

Gardeners have long known the importance of bees for pollination, but the insects can also help flowers grow **bigger** and smell **more fragrant**, scientists have discovered. (L) (14 March 2017)

Several resources function to construct Superlativeness in the two examples: comparative adjectives in the two of them in addition to numerals and superlative adjectives in Example (24), in which the magnitude is emphasized for both the kind of surgery and the shortening of its time by means of the robotic drill. The numbers used in Example (24) help establish the "amplitude" of the scale of these two dimensions. This appears as another rhetorical function of numerals in addition to suggesting "preciseness in reporting and seemingly direct access of the reporter to data" (van Dijk, 1988, p. 90).

*Al-Ahram* journalists used similar devices in similar contexts, illustrated in examples (26) and (27).

- (26) <<*al-atuθaaniyya*>> *ʔaaxiru ʔabħaaθi-l-caalimi-l-kabiir*  
*ʔasracu mina-l-fimtuθaaniyah bi-ʔalfi marrah wa yutiihu*  
*diraasati ħarakati-l-ʔiliktrunaat*

*Attosecond the last research of the great scientist [Ahmed Zewail]*

***One thousand times faster than the femtosecond** and makes it possible to study the movement of electrons (H) (07 August 2016)*

- (27) *tamtaliku miSru xaaSSatan fi muhaafaDatayy Jamaali wa ganuubi saynaaʔa **cadadan kabiiran** mina-n-nabaatati-l-fariidati daata-l-istixdaamati-T-Tibiyati-l-mutacadidah*

*Egypt possesses, especially in the governorates of North and South Sinai, a **large number of unique** plants with **numerous** medical uses. (L) (14 May 2017)*

In Example (26), a specific number *ʔalfi* 'one thousand' and the comparative adjective *ʔasracu* 'faster' function to establish the Superlativeness of the event. Positive Impact is established lexically with verb *yutiihu* (makes it possible).

*Superlativeness in Example (27), is established first by quantifier **cadadan kabiiran** (a large number) in addition to reference to the uniqueness of the plants. Uniqueness has been considered one of the sources of establishing Superlativeness (Bednarek & Caple, 2017). The phrase *daata-l-istixdaamati T-Tibiyati-l-mutacadidah* 'with numerous medical uses', establishes positive Impact by reference to the medical uses and its Superlativeness by the lexical intensifier *mutacadidah* 'numerous'.*

*Superlativeness as combined with Negative Impact was not uncommon in the two corpora (Table 9). The following two examples illustrate the construction of the magnitude of the Negative Impact in the Telegraph corpus. In the two examples Proximity is also established, which serves to render the Superlativeness all the more impressive.*

- (28) Britons are **dying** because of the **Volkswagen emission scandal** with **dozens killed** from fumes travelling across the North Sea from Germany and '**many times**' **more killed**



**by pollution from cars on UK roads**, a study suggests. (L)  
(03 March 2017)

- (29) Polar vortex to bring **big freeze** and **coldest winter for five years** as NHS [National Health Services] urges public to keep warm to relieve pressure on A&Es [Accidents and Emergencies] (H)

**Freezing temperatures** are likely to hit Britain this winter as the polar vortex above the Arctic moves south bringing **bone-chilling** weather in the run up to Christmas, the Met Office has predicted. (L) (07 November 2016)

In Example (28), the large scale of the *dying* and *killed* Britons, i.e., Superlativeness of the negative Impact of the *Volkswagen emission scandal*, is made clear with the numeral *dozens* and the quantifier *many times more*. In other words, the negative Impact of the event has "go[ne] critical", which justifies its newsworthiness (Montgomery, 2007, p. 6).

In Example (29), Superlativeness is formulated by means of the superlative adjective *coldest* and intensified lexis *big freeze*, *freezing* and *bone-chilling*. Intensified lexis and comparisons have been considered the two forms of "intensification", which is frequently used in headlines and leads. In this context, given the rhetorical significance of this section of the news story, as indicated above, intensification serves to "reinforce the sense that there is something innately remarkable about the events or statements therein described" (White, 1998, p. 425).

In the following Arabic example, Superlativeness of a negative state-of-affairs is established first, followed by reference to means of overcoming it (Positivity). This type of sequence in this context was observed more than once in *Al-Ahram* corpus.

- (30) *ʔirtifaacu marDaahu fi miSri ʔila-θ-θnayy-cafr milyuunan*  
*caama ʔalfayn wa θalaaθiin*  
*ʔadwiyyatun gadiidatun tamnacu-m-mtiSaaSa-l-glukuuz wa*  
*tuxaffiDu mucaddlaati-s-sukar*

The rise of [the number of] its patients in Egypt to **12 million** in the year 2030

New medications prevent glucose absorption and reduce [blood] sugar levels (H) (30 October 2016)

Celebrating the scientific discoveries and research findings which may not be of direct relevance to audience's daily lives appeared to be a context calling for establishing the news value of Superlativeness, as shown in the following English example.

- (31) Dinosaur footprint among **largest on record** discovered in Mongolia's Gobi Desert (H)  
Scientists have unearthed in Mongolia's Gobi Desert **one of the biggest** dinosaur footprints **ever** recorded, measuring **over a metre** in length. (L) (04 October 2016)

The examples provided throughout this Findings section have consistently demonstrated how the combining of news values serves to enhance newsworthiness. It is argued here that newsworthiness can be all the more reinforced by the combining of Superlativeness and Unexpectedness, as shown in the following example.

- (32) Girl is first British child to receive '**miracle**' **artificial heart** (H)  
A 13-year-old girl **has made history** by becoming the **first** British child to receive an **artificial heart**. (L) (10 April 2017)

The reported event, a child receiving an artificial heart, is inherently strange. Lexical intensification in *miracle* in the headline serves to construct the Unexpectedness and Superlativeness simultaneously. The same function is served in the lead by the metaphorical phrase *has made history*.

## Discussion

The analysis of news values in the selected English and Arabic science news stories headlines and leads indicated that science journalists tended to establish the newsworthiness of the reported events in this opening section through the construction of news values. The analysis revealed similarities as well as differences in terms of the following: the news values constructed in each corpus, their relative frequencies, and the types of linguistic resources employed in their discursive construction (the first and third research questions). The news values constructed to enhance newsworthiness in both corpora were the following: Eliteness, Superlativeness, Proximity, Newness, Impact, and Unexpectedness. In addition, the analysis revealed that the two values of Positivity and Negativity appeared inseparably combined with Superlativeness, Proximity, and Impact. Actually, combining of two or more values was a predominant feature of the two corpora (the second research question).

The predominant combining of news values appears in line with the findings of previous research on news values, which has considered the combining of news values as a feature of the headline and lead section of the news story (Bednarek, 2016a; Bednarek and Caple, 2017; Molek-Kozakowska, 2017). This observation, furthermore, is consistent with the emphasized rhetorical significance of the news story headline and lead (Bednarek, 2016a; Bell, 1991; van Dijk, 1988; White, 1998; White & Thomson, 2008). The texts analyzed appeared packed with news values aimed at enhancing newsworthiness and "selling" the stories.

In terms of the relative frequencies of the news values, the first significant similarity between the two corpora was related to the most and least frequently established of these values, namely, Eliteness and Unexpectedness, respectively. That the most frequently constructed news value in the two corpora of headlines and leads of science news stories was Eliteness may be hardly surprising. Science journalists have been observed to be keen on giving "credence" to the reported information by establishing the "credibility of its sources" (Hyland, 2010. P. 122). The two corpora demonstrated variation in the relative focus given to elite people versus elite

institutions, which can be interpreted in terms of the prevailing type of the covered events. Elite institutions were more frequently cited than elite people in the Arabic data. In the English data, it was people Eliteness which was established more frequently. With their focus on covering conferences, scientific achievements, and ceremonial events, *Al-Ahram* journalists highlighted the involved institutions as well. The *Telegraph* journalists, for their part, focused on elite news actors/sources, i.e., scientists.

The two corpora also differed in the discursive construction of elite people, which may be also explained in terms of the different type of science coverage. *Al-Ahram* journalists tended to provide the names, positions, and affiliations of the elite news actors/sources, a practice that resulted in multi-sourced Eliteness. This practice was hardly identified at all in the English data. Elite news actors/sources were referred to generically as *scientists/researchers/experts*. Only rarely were their affiliations provided. It is claimed here that the *Telegraph* journalists kept this rhetorically important section of the headline and lead for the main research findings, their main concern being to establish the significance "of a topic in order to celebrate scientific results" (Hyland, 2010, p. 119). *Al-Ahram* journalists, on the other hand, were concerned with highlighting the scientific information as well as the scientists and institutions early in the news story lead; that is, they were concerned with celebrating the scientific discoveries as well as the scientists and scientific institutions.

The variation in the relative focus given to elite institutions in the two corpora seems closely-related to the difference in the news value of Proximity. The Egyptian journalists' tendency to cite the Egyptian institutions involved in different ways in the reported events served simultaneously to establish the news value of Proximity, accounting also in part to its being more salient in the Arabic corpus. What was also different with respect to this value was the relative focus given to positive versus negative events established as geographically and/or culturally close. In *Al-Ahram* corpus, Proximity was established for more positive than negative events. In the *Telegraph* one, in contrast, Proximity was more commonly combined with Negativity. The salient Proximity-Positivity combining in

*Al-Ahram* corpus may be ascribed to the above mentioned tendency of its journalists to cover the positively-orientated scientific achievements of the Egyptian scientific institutions, i.e., highlight the positive role of scientific institutions in the target audience's lives.

As for the news value of Newness, the analysis revealed similarity between the two corpora with respect to its relative frequency. Generally speaking, the high focus given to Newness in the two corpora appears in line with the significance assigned to this value in the literature on news discourse in general (Bell, 1991, 1995; Montgomery, 2007), science journalism (Hyland, 2010) and news values (Bednarek 2016a; Molek-Kozakowska, 2017).

The significance and relevance of the reported event represented by the news value of Impact was established more frequently in the English corpus. The established Impact was classified into positive and negative, indicating a significant type of news values combining. Positive Impact was more widely constructed in the two corpora, though more noticeably so in the Arabic one.

The analysis revealed that in the various contexts of news values, journalists tended to put forward these values as of large scope or high magnitude, i.e., combined with Superlativeness, a news value which featured more commonly in the Arabic corpus, but ranked higher in the order frequency in the English corpus. Another difference was revealed in terms of its combining with Positivity/Negativity. *Al-Ahram* journalists tended to combine Superlativeness with Positivity rather than Negativity, whereas the *Telegraph* ones tended towards the opposite. Furthermore, in the context of negative Superlativeness *Al-Ahram* journalists revealed a tendency to report positive measures aimed at counteracting the negative large-scope events.

Such cases can be interpreted in terms of what van Dijk (1988) referred to as the need of "deviance and negativity to conformity and positivity" and the audience's need "in the simulation of possible problems . . . [of] models of problem solving" (p. 123). He has even suggested that "negative news without positive elements of some kind is probably hard to

digest" (p. 124). This Positivity/Negativity interplay was also observed by Bednarek and Caple (2017) and Molek-Kozakowska (2017).

The focus on Positivity in the data of the present study appears divergent from the findings of previous news values research in general about Positivity/Negativity. Negativity, as indicated above, has been considered "the basic news value" (Bell, 1991, p. 156), favoured by "all newspapers" (Harcup & O'Neill, p. 1478), and the kind of news which "makes good news" (Montgomery, 2007, p. 8). Positivity, in contrast " may often be de-emphasised, especially in hard news stories (Bednarek, 2016b, p. 36). Negative Impact, in addition, has been observed to be more common than positive impact by Bednarek and Caple (2017). On the other hand, in Molek-Kozakowska's (2017) study of science news, positive Impact was observed to be established more frequently. It can be argued, therefore, that the focus on Positivity in the data of the present study, particularly the dominance of positive Impact in the two corpora, may be interpreted in terms of the genre of the news stories investigated, i.e., science, mostly medical, news stories. Science journalists seem to have a tendency to put forward their stories as reassuring rather than alarmist. Research on news values has pointed out to the variation in news values according to the types of the covered events (e.g., Bednarek, 2016b; Bednarek & Caple, 2017; Montgomery, 2007).

In sum, the investigation of the two corpora of science news stories headlines and leads revealed one main distinctive feature of science journalism in each of the two dailies from which these texts were collected. That is, the *Telegraph* science journalists whose texts were examined tended to celebrate the published research findings and their relevance to the target audience's lives. Their counterparts of *Al-Ahram*, on the other hand, focused on celebrating the scientific findings of research and, more centrally, the Egyptian scientific institutions, their affiliated scientists, and their achievements. These variant approaches appeared to account for most of the identified differences between the two corpora in terms of the relative frequency of the news values, their sub-types, and their discursive construction.

## Conclusion

The comparison of English and Arabic science news texts has indicated common tendencies as well as variation regarding the use of news values. Both groups of journalists whose texts were analyzed appeared concerned with establishing the newsworthiness of the covered event in the opening section (headline and lead) of the news stories through the discursive construction of news values. More often than not, two or more news values were combined to reinforce newsworthiness, which provides more evidence to the rhetorical prominence of this section of the news story, as has long been emphasized in news discourse studies.

The analysis revealed the significant similarity concerning the news values that were established, the most and least frequently established ones. Variation was observed, on the other hand, in the relative focus given to the other values. Concerning the combining of Positivity versus Negativity with other values, the analysis revealed another significant common tendency to combine Positivity, rather than Negativity with the Impact news value, which reflects a common concern on the part of science journalists to present their stories as assuring rather than alarmist. Apart from this, the Egyptian journalists demonstrated a stronger tendency towards establishing the Positivity of the covered event. This final variation is argued to be related to the overarching concern of each group of journalists. *The Telegraph science* journalists appeared principally concerned with celebrating the findings of published research, whereas their *Al-Ahram* counterparts seemed more inclined to put forward the reported events as scientific achievements of the scientific institutions and the affiliated scientists.

The findings of this exploratory study are presented as tendencies observed in the texts constituting the data base. More research is yet needed to consolidate these findings based on larger data bases selected from other newspapers than the ones used for the present study. It may also be interesting to investigate news values in other sub-genres of news stories, e.g., political, business, and sports. A cross-genre analysis, i.e., comparing the news values in different sub-genres of news stories may prove fruitful as well.

Notes:

- (1) The excluded news story was published in August 2016 about a personal rather than scientific issue related to a celebrity scientist.
- (2) Only one lead in this corpus was not printed in bold, but had a final period and a line space separating it from the body of the story.
- (3) In addition to these ten values, Bednarek and Caple's model includes the Aesthetic Appeal value, related to the analysis of visuals, which is beyond the scope of this study.
- (4) The Timeliness news value has two dimensions: Recency, relating to the temporal immediacy of the event, and Newness, i.e., Novelty. The analysis of news value of Timeliness was restricted to Newness, rather than Recency, for the following reasons. Recency in news discourse has consistently been observed to be established mainly by means of the tense/aspect, especially, the simple present tense (Bell, 1995; Bednarek & Caple; 2017; Montgomery, 2007). Bednarek and Caple (2017) have, in addition, pointed out that the use of the simple-present tense in news stories, especially in headlines, is governed by convention. This convention is demonstrated clearly in the English headlines investigated for the present study. The Arabic ones also revealed a predominance of present-tense verbs. As for the leads, more varied verb tenses were used in the two corpora. For space considerations and given the distinction between the tense-aspect systems in the two languages, verb tenses were not further examined; hence the focus of Timeliness analysis on Newness.
- (5) In this and in all the examples below, the parenthetical (H) and (L) stand for the news story headline and lead, respectively. The date provided is the date of the news story publication. The Telegraph and Al-Ahram are the sources of all the English and Arabic examples, respectively. Accordingly, the newspaper name is not given. To highlight the pertinent construct(s), bold type has been added.
- (6) The key to the Arabic phonemic transcription and the original Arabic examples are provided in the appendices. Translations of all Arabic examples are mine.
- (7) In the English data, one more reference was made to the US and another story mentioned Paris and other European cities. However, these two cases were classified as constructing Proximity rather than Eliteness. It is certainly recognized that the same device can construct more than one news value simultaneously, and this is demonstrated in the data of the present study, as will be discussed below. However, in these two cases, the context made the cultural and/or geographical Proximity value far more likely. The two texts in question are:
  - (a) Close-door buttons DO work in British lifts... but not in *US* elevators (H) (02 November 2016)
  - (b) Cosmic dust left over from the dawn of the solar system found on rooftops in *Paris* (H)  
 Tiny specks of cosmic dust which are left over from the formation of our solar system have been discovered on the rooftops of *three European cities*. (L) (06 December 2016)  
 The same can be said about *Britain* in the same data, as will also be made clear in the section on Proximity.



### *Works Cited*

- Badenschier, F. & Wormer, H. (2012). Issue selection in science journalism: Towards a special theory of news values for science news? In S. Rödder, M. Franzen, & P. Weingart (Eds.). *The sciences' media Connection: Public communication and its repercussions* (pp. 59-85). Dordrecht, the Netherlands: Springer.
- Bednarek, M. (2016a). Investigating evaluation and news values in news items that are shared via social media. *Corpora*, 11, 227–257.
- ————. (2016b). Voices and values in the news: News media talk, news values and attribution. *Discourse, Context & Media*, 11: 27–37.
- Bednarek, M. & Caple, H. (2012). *News discourse*. London: Continuum.
- ————. (2014). Why do news values matter? Towards a new methodological framework for analysing news discourse in critical discourse analysis and beyond. *Discourse & Society* 25, 135–158.
- ————. (2017). *The discourse of news values: How news organizations create newsworthiness*. New York: Oxford University Press.
- Bell, A. (1991). *The language of news media*. Oxford: Blackwell.
- ————. (1995). News time. *Time & Society*, 4, 305–328.
- Brighton, P. & Foy, D. (2007). *News values*. London: Sage.
- Calsamiglia, H. (2003). Popularization discourse. *Discourse Studies*, 5, 139–146.
- Calsamiglia, H. & López Ferrero, C. (2003). Role and position of scientific voices: Reported speech in the media. *Discourse Studies*, 5, 147–173.
- Calsamiglia, H. & van Dijk, T. A. (2004). Popularization discourse and knowledge about the genome. *Discourse & Society*, 15, 369–389.
- Caple, H., & Bednarek, M. (2013). *Delving into the discourse: Approaches to news values in journalism studies and beyond*. (Working Paper). Oxford: Reuters Institute for the Study of Journalism, University of Oxford. Available at:  
<https://reutersinstitute.politics.ox.ac.uk/publications/risj-working-papers.html>.
- ————. (2016). Rethinking news values: What a discursive approach can tell us about the construction of news discourse and news photography. *Journalism: Theory, Practice and Criticism*, 17, 435–455.

- Catenaccio, P., Cotter, C., De Smedt, M., Garzone, G., Jacobs, G., Macgilchrist, F., . . . van Praet, E. (2011). Towards a linguistics of news production. *Journal of Pragmatics*, 43, 1843–1852.
- Clark, F. & Illman, D. (2006) A longitudinal study of the *New York Times* Science Times section. *Science Communication*, 27, 496–513.
- Fahnestock, J. (1998). Accommodating science: The rhetorical life of scientific facts. *Written Communication*, 15, 330-350.
- Fairclough, N. (1994). Conversationalization of public discourse and the authority of the consumer. In K. Russell, N. Whiteley, & N. Abercrombie (Eds.), *The authority of the consumer* (pp. 253-268). London: Routledge.
- Fowler, R. (1991). *Language in the news: Discourse and ideology in the press*. London: Routledge.
- Galtung, J., & Ruge, M. (1965). The structure of foreign news: The presentation of the Congo, Cuba and Cyprus crises in four Norwegian newspapers. *Journal of Peace Research*, 2, 64–90.
- Guenther, L. & Ruhrmann, G. (2013). Science journalists' selection criteria and depiction of nanotechnology in German media, *Journal of Science Communication*, 12,1-17.
- Harcup, T. & O'Neill, D. (2001). What is news? Galtung and Ruge revisited. *Journalism Studies*, 2, 269–280.
- ————. (2017). What is news? News values revisited (again) *Journalism Studies*, 18, 1470-1488.
- Hyland, K. (2010). Constructing proximity: Relating to readers in popular and professional science. *Journal of English for Academic Purposes*, 9, 116-127.
- Jebril, N. (2013). Infotainment, cynicism and democracy: The effects of privatization vs personalization in the news. *European Journal of Communication*, 28, 105-121.
- Jucker, A. H. (1996). News actor labelling in British newspapers. *Text*, 16, 373–390.
- Labov, W. (1972). *Language in the inner city: Studies in the black English vernacular*. Philadelphia, PA, University of Pennsylvania Press.
- Luzón, M. J. (2013). Public communication of science in blogs: Recontextualizing scientific discourse for a diversified audience. *Written Communication*, 30, 428–457
- McQuail, D. (1994). *Mass communication theory*, London: Sage.

- Moirand, S. (2003). Communicative and cognitive dimensions of discourse on science in the French mass media. *Discourse Studies*, 5, 175–206.
- Molek-Kozakowska, K. (2016). Stylistic analysis of headlines in science journalism: A case study of *New Scientist*. *Public Understanding of Science*, 26, 894-907.
- ————. (2017). Communicating environmental science beyond academia: Stylistic patterns of newsworthiness in popular science journalism. *Discourse & Communication*, 11, 69-88.
- Montgomery, M. (2007). *The Discourse of broadcast news: A linguistic approach*. London: Routledge.
- Myers, G. (1991) Lexical cohesion and specialized knowledge in science and popular science texts. *Discourse Processes* 14, 1–26.
- ————. (2003). Discourse studies of scientific popularization: Questioning the boundaries. *Discourse Studies* 5, 265–279.
- De Oliveira, J. M. & Pagano, A. S. (2006). The research article and the science popularization article: A probabilistic functional grammar perspective on direct discourse representation *Discourse Studies*, 8, 627-646.
- Palmer, J. (1998). News production, news values. In A. Briggs & P. Cobley (Eds.), *The media: An introduction* (pp. 377– 391). Harlow: Longman.
- Richardson, J. E. (2007). *Analysing newspapers: An approach from critical discourse analysis*. New York: Palgrave Macmillan.
- Suleski, J. and Ibaraki, M. (2010). Scientists are talking, but mostly to each other: A quantitative analysis of research represented in mass media. *Public Understanding Science*, 19, 115–205.
- van Dijk, T. A. (1988). *News as discourse*. Hillsdale, NJ: Erlbaum.
- Weitkamp, E. (2003). British newspapers privilege health and medicine topics over other science news. *Public Relations Review*, 29, 321–333.
- White, P. R. R. (1998). *Telling media tales: The news story as rhetoric*. (Doctoral dissertation, University of Sydney, Sydney, Australia). Retrieved from [https://www.researchgate.net/publication/268256149-Telling\\_Media\\_Tales\\_the\\_news\\_story\\_as\\_rhetoric](https://www.researchgate.net/publication/268256149-Telling_Media_Tales_the_news_story_as_rhetoric)
- White, P. R. R. & Thomson, E. (2008). The news story as rhetoric: linguistic approaches to the analysis of journalistic discourse. In E. Thomson & P. R. R. (Eds.), *Communicating conflict: Multilingual case studies of the news media* (pp. 1-23). London: Continuum.

Appendix 1

**SYMBOLS USED IN THE PHONEMIC TRANSCRIPTION OF ARABIC**

**A. Consonants**

/b/	ب	voiced bilabial stop	/baab/	“door”
/t/	ت	voiceless alveolar stop	/kitaab/	“book”
/T/	ط	voiceless velarized alveolar stop	/Taalib/	“student”
/d/	د	voiced alveolar stop	/diin/	“religion”
/D/	ظ	voiced velarized alveolar fricative	/Dil/	“shadow”
/D/	ض	voiced velarized alveolar stop	/Dariir/	“blind”
/k/	ك	voiceless velar stop	/kaatib/	“writer”
/g/	ج	voiced velar stop (Egyptian Arabic)	/gamal/	“camel”
/q/	ق	voiceless uvular stop	/qalam/	“pen”
/ʔ /	ء / أ	glottal stop	/ʔ ahmar/	“red”
/j/	ج	voiced palatal affricate	/jamal/	“camel”
/c/	ع	voiced pharyngeal fricative	/culuum/	“science”
/f/	ف	voiceless labio-dental fricative	/filfil/	“pepper”
/θ/	ث	voiceless dental fricative	/θaman/	“price”
/ð/	ذ	voiced dental fricative	/ðaalik/	“that”
/Z/	ظ	voiced velarized dental fricative	/Zalaam/	“darkness”
/s/	س	voiceless alveolar fricative	/sacaada/	“happiness”
/S/	ص	voiceless velarized alveolar fricative	/Saabuun/	“soap”
/z/	ز	voiced alveolar fricative	/zaaʔ ir/	“visitor”
/ʃ/	ش	voiceless palato-alveolar fricative	/ʃaacir/	“poet”
/x/	خ	voiceless velar fricative	/xaadim/	“servant”
/g/	غ	voiced uvular fricative	/gʔabiy/	“stupid”
/h/	هـ	voiceless glottal fricative	/haadiʔ /	“calm”
/ħ/	ح	voiceless pharyngeal fricative	/baħr/	“sea”
/r/	ر	flap/trill	/qarrara/	“decided”
/l/	ل	lateral	/laacib/	“player”
/m/	م	bilabial nasal	/mudarris/	“teacher”
/n/	ن	alveolar nasal	/hinnaaʔ /	“henna”
/w/	و	bilabial glide	/walad/	“boy”
/y/	ي	palatal glide	/yawm/	“day”

**B. Vowels:**

/i/	short close front vowel
/a/	short half-open front vowel
/u/	short close back vowel

Length in both consonants and vowels is marked by a double symbol as in /kaatib/ “writer,” /xuruuj/ “exit,” /muqim/ “resident,” /Tayyib/ “good” and /mudarris/ “teacher.”

Appendix 2  
Original Arabic texts

- (٣) ناقش المؤتمر الدولي السادس للفيزياء - والذي نظّمته كلية علوم القاهرة تحت عنوان الاتجاهات الحديثة في الفيزياء برئاسة د. لطفية النادي أستاذة الفيزياء النووية ورئيس المؤتمر، وبمشاركة علماء من مصر وألمانيا وروسيا والهند - أحدث الدراسات البحثية في مجال الفيزياء النظرية والتطبيقية واستخدامات علوم الليزر وتطبيقاته في كافة المجالات.
- (٤) في المؤتمر الخامس لطب الأطفال مصر خالية من الدرن قريبا
- (٥) 18 باحثًا يزعمون محاصيل «النقل» بسيناء نجح فريق متكامل من ١٨ باحثًا في ثمانية تخصصات علمية بالمركز القومي للبحوث من خلال مشروع بحثي بدأ عام ٢٠١٣- في استزراع محاصيل النقل (الجوز واللوز والفسق) في مساحات تجريبية بأراضي محافظة سيناء الجنوبية بمنطقة سانت كاترين،
- (٨) ٨ آلاف طفل مصري يعانون ضعف السمع سنويا
- (١٢) حلول ابتكارية لمشكلات الكهرباء والطاقة والكشف عن الفيروسات
- (١٣) إطلاق ثلاث مبادرات لتطوير التعليم بمصر
- (١٧) للحفاظ على الصحة العامة والبيئة المحيطة.. فريق بحثي يبتكر مركبا بيولوجيا لمكافحة البعوض تمكن فريق من الباحثين المتخصصين بكلية الزراعة من ابتكار مركب من الزيوت النباتية الطبيعية يمكنه التخلص نهائيا من البعوض، وبشكل آمن على صحة الإنسان والبيئة المحيطة به.
- (٢١) يعتبر الدماغ من أكثر وأهم أعضاء الجسم تأثرا بالعوامل الخارجية، والتي قد لا نعيرها الاهتمام الكافي في حياتنا اليومية، فقد يمارس الإنسان العديد من الممارسات والعادات الضارة التي تقتل خلايا الدماغ وتتسبب في حالة الركود العقلي وهو لا يدرك ،
- (٢٣) قد يخيل للبعض عند سماع مصطلح الزراعة المائية أنها طريقة تحتاج لكميات أكبر من المياه لكن الحقيقة بخلاف ذلك، فهذه الطريقة توفر أكثر من ٨٥% من المياه التي تحتاجها الزراعة في التربة العادية.
- (٢٦) "الأوتوتانية" آخر أبحاث العالم الكبير أسرع من الفيمتوثانية بألف مرة ويتيح دراسة حركة الإلكترونات
- (٣١) ارتفاع مرضاه في مصر إلى ١٢ مليونا عام ٢٠٣٠ أدوية جديدة تمنع امتصاص الجلوكوز وتخفض معدلات السكر

