



The Construction of the AI Positive and Negative Traits in Scientific Articles: A Cognitive Linguistic Study

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Abstract

Artificial intelligence (AI) is presented as a pioneering tool that has the potential to revolutionize various aspects of human life. Artificial intelligence has a greater impact on influencing the future than any other development in this century. AI-powered technologies, such as plagiarism detection software, text generation algorithms, and automatic essay graders, have emerged as helpful resources for students looking to improve their abilities. The current paper endeavours to explore the construction of AI's positive and negative traits in scientific articles. The data for the current paper consists of sixteen extracts selected from eight scientific articles about positive traits and eight scientific articles about negative traits that have been written on AI. This paper utilizes the Dynamic Model of Meaning to demonstrate how a cognitive linguistic perspective constructs the positive and negative traits of AI. The results have revealed interesting findings about how language integrates prior experiences with the present context present context to construct dynamic meaning. Moreover, there are both similarities and differences between constructing positive and negative traits.

Keywords: Artificial intelligence (AI), Dynamic Model of Meaning (DMM), Negative traits, Positive traits



السمات الايجابية والسلبية للذكاء الاصطناعي في المقالات العلمية: دراسة لغوية ادراكية

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المستخلص :

يُعتبر الذكاء الاصطناعي أداة رائدة قادرة على إحداث ثورة في مختلف جوانب الحياة البشرية. وللذكاء الاصطناعي تأثيرٌ على المستقبل أكبر من أي تطور آخر في هذا القرن. وقد برزت التقنيات المدعومة بالذكاء الاصطناعي، مثل برامج كشف الانتحال، وخوارزميات توليد النصوص، وأنظمة تصحيح المقالات الآلية، كمصادر قيّمة للطلاب الساعين إلى تطوير مهاراتهم. يهدف البحث إلى دراسة البناء اللغوي للسمات الإيجابية والسلبية للذكاء الاصطناعي في المقالات العلمية. تتكون البيانات من ستة عشر مقتطفًا مُختارًا من ثماني مقالات علمية تتناول السمات الإيجابية، وثمانية مقالات علمية أخرى تتناول السمات السلبية، والتي كُتبت جميعها عن الذكاء الاصطناعي. يعتمد البحث نموذج المعنى الديناميكي لتوضيح كيفية بناء السمات الإيجابية والسلبية للذكاء الاصطناعي من منظور لغوي معرفي. وقد كشفت النتائج عن استنتاجات مثيرة للاهتمام حول كيفية عمل اللغة في دمج الخبرة السابقة مع السياق الحالي لبناء معنى ديناميكي. علاوة على ذلك، توجد أوجه تشابه واختلاف بين بناء السمات الإيجابية والسلبية من حيث البناء اللغوي الإدراكي.

الكلمات المفتاحية: الذكاء الصناعي، أسلوب المعنى الحركي، السمات الايجابية للذكاء الصناعي، السمات السلبية للذكاء الصناعي

1. Introduction

The concept of AI has gained popularity. Technology is advancing rapidly in terms of adoption and usage. AI will soon play a role in almost every aspect of technology. AI allows people to write and modify themselves and do other tasks that would otherwise feel burdensome to humans. AI can be compared to inexpensive labour, which will speed up our work and increase our profits. AI is simple to implement. Unlike humans, machines don't need breaks or refreshments. The machines can be programmed to operate for extended periods of time without growing weary or bored. AI and robotics can be used to save human lives in mining and other fuel exploration processes. This is because humans can create new robots. AI can be implemented in businesses and industries. The term "human error" originated because people occasionally make mistakes. However, if computers are properly programmed, they avoid these errors. AI uses a specific set of algorithms to make decisions based on gathered information. Therefore, there is a chance of achieving accuracy with a higher degree of precision because errors are decreased (Russell & Norving, 2010).

This paper aims to investigate how scholars generate the positive and negative traits of AI in their articles by integrating semantic and pragmatic aspects of meaning into a cognitive linguistic compound. It aims to explore how language and cognition influence these perspectives and how constructions like optimism and AI concern arose. There appears to be a gap in the literature because, as far as the researcher is aware, no study has ever been done on how AI is constructed, both positively and negatively, in scientific articles (SAs) from the standpoint of cognitive linguistics. The present study is an attempt to bridge this gap. It is set for the task of answering a group of research questions that are raised to investigate the positive and negative traits of AI in SAs from a cognitive linguistic perspective. In this regard, the questions put forward are as follows:

1. Do SAs depend more on experimental prior knowledge (of particular scientific experiments) or on general scientific prior knowledge to construct the positive and negative traits of AI?
2. Do the statements of the positive and negative traits of AI stem from speculative or empirical bases that frame the contextual clues indicated in the statements?
3. What are the intentions of the scientific article producers in exploring the positive and negative traits of AI?
4. What are the types of intentions of stating the positive and negative traits of AI in SAs?

5. What are the similarities and differences between the cognitive linguistic construction of the positive and negative traits of AI in SAs?

2. Theoretical Framework

2.1 Key Words

2.1.1 Cognitive Linguistics

Cognitive linguistics (CL) is a relatively recent branch of linguistics. In the early 1970s and early 1980s, it first appeared in the works of George Lakoff, Ron Langacker, and Len Talmy. It is based on recent cognitive science from the 1960s and 1970s; it includes research on human categorization. CL is primarily concerned with the relationship "between language, the mind, and the socio-physical experience" (Evans, 2007).

Cognitive linguists are interested in how linguistic systems reflect mental structures, so this usually relates to linguistic system structures. They examine syntactic and semantic structures in various ways, develop theoretical explanations of how language structures relate to thought, discuss how the physical world and the human body relate to language and thought, compare various languages in terms of how they depict the world and the thoughts of their speakers, and much more. The term 'cognitive linguistics' serves as an umbrella term for research in which cognitive linguists' study how basic aspects of cognition are reflected in language and try to account for the structures in natural language by focusing on meaning. The field is very diverse and comprises more than one homogeneous approach (Evans, 2007; Khalil, 2014; Khalil, 2008).

CL, as it is conceptualized these days, can be compared to a river with numerous tributaries that all contribute to its main flow. These originated from linguistics itself as well as from a several of nearby fields. According to one perspective, CL is largely an amalgam that results from the so-called "linguistic wars" between the dissident generative semantics and the Chomskyan principle (Evans, 2007). Nevertheless, CL is inextricably linked to its relatives, the nearby fields that are collectively referred to as "cognitive science." (Geeraerts & Cuyckens, 2007).

Cognitive linguists aim to understand the fundamental principles and motivations behind language organization. Additionally, CL opposes generative linguistics' view of language autonomy. Generative linguists view language as an independent system distinct from other forms of knowledge, especially encyclopedic knowledge, while CL rejects the distinction between linguistic and encyclopedic knowledge (Geeraerts & Cuyckens, 2007; Wasen & Khalil, 2025).

2.1.2 Meaning Construction in Cognitive Linguistics

In CL, meaning is constructed in the minds of language users rather than in linguistic units. Human communication depends on two cognitive network components: meaning construction and prompting (Fauconnier, 1997). Linguistic forms encourage the construction of meanings. The problem is that the relationship between language and reality is not one-on-one. Grammar only reflects a limited number of general frames that can effectively organize the vast array of situations we encounter and imagine. Meaning is richer than language form (Fauconnier, 1997; Khalil & Al-Zubaidi, 2022). Meaning construction is an inferential process. The linguistic expressions that act as prompts, the situational and discourse context, the encyclopedic knowledge of language users, their individual attitudes, and undoubtedly many other factors restrict the range of possible inferences. These are very specific elements that explain specific aspects of meaning (Radden & Kövecses, 2007).

Both context and lexicon are required to understand the relationship between the meaning construction system (cognition) and the meaning prompting system (language). Context, on the one hand, can take many forms and serve various purposes during communication. Lexicon, on the other hand, serves as both a context thesaurus and an interface between the conceptual level and the linguistic level (Kecskes, 2023).

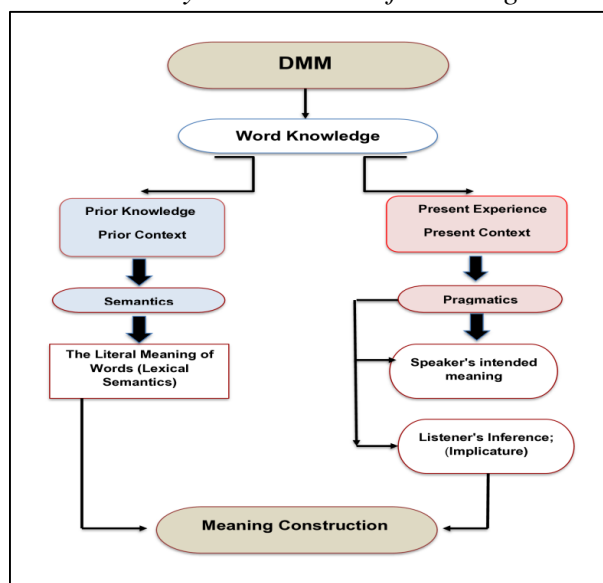
When constructing meaning, interlocutors use both conceptual and encyclopedic knowledge that has already been established and the knowledge that has been co-constructed (emergent) during the interaction process. Traditional communication approaches place a high value on meaning construction, yet sometimes overlook the interlocutors' prior experiences. According to CL, social norms both influence and are influenced by people in the dynamic process of communication. Interlocutors rely on their unconscious motivations from prior experiences in addition to the things they co-create dynamically during the communication process (Kecskes, 2023). For example, the phrase "running out of time" is widely used nowadays. It does not imply the actual disappearance of time. Nevertheless, it indicates that "not much time remains". Cognitive linguistics suggests that meaning is constructed through a mental process that is influenced by context, prior knowledge, and conceptual structure.

2.1.3 The Dynamic Model of Meaning

DMM is a framework in cognitive linguistics that includes both pragmatic and semantic aspects of language comprehension. It acknowledges the importance of both semantic meaning (the literal meaning of words and sentences) and the pragmatic meaning (the meaning derived from context and intentions) in the

process of interpreting language. Fundamentally, the DMM integrates pragmatic and semantic components, acknowledging that meaning results from the interaction of pragmatic principles, contextual factors, and conceptual knowledge. It emphasizes how language comprehension is dynamic and interactive, requiring the cooperation of pragmatic and semantic elements to produce interpretations in real-time communication (Kecskes, 2023). Figure 1 produces the graphic representation of the DMM:

Figure (1)
The Dynamic Model of Meaning



The DMM promotes a comprehensive view of context that takes into account both past and present interactions with the outside world. The dialectic of context states that meaning is constructed by both the encoded private context and the actual situational context as two aspects of world knowledge. The DMM identifies a number of communication process issues that could cause miscommunications and necessitate meaningful negotiation. It recognizes that meaning in a real situational context is usually processed differently from addresser's / addressee's points of view. It results from the "clash" of two or more private contexts (the addresser's and addressee's contexts). This results in a dynamic communication style that is marked by breakdowns, silences, and broken sentences. Contributions may come in messy, unidentifiable packages. The DMM relies on the findings of recent cognitive psychology research on language processing. For example, Giora (2003), Katz (2005), and Kecskes (2004a) argue that the important variable in language processing is saliency rather than the literalness of the lexical unit. Giora (2003) proposed a modification of the literal priority model, which maintains that the lexicon suggests the meaning, but context determines usage.

The significance of the literal meaning should be viewed as secondary to the

significance of the salient meaning, such as conventional, familiar, frequent, and predictable meanings (Giora, 1997, 2003). The most significant meaning is the most likely one among all possible interpretations. There are frequently several meanings for words and expressions, some of which are easier to understand because of cognitive prioritization in our mental lexicon (Kecskes, 2023). The DMM emphasizes the unexpected nature of real-world communication, providing a novel perspective on language use. It also emphasizes the egocentric, present-moment interpretation that frequently comes before true common understanding. Moreover, it suggests dialectic semantic and pragmatic domains that consider the viewpoints of the interlocutors to better explain how meaning is created in interaction (Kecskes, 2023).

2.1.4 Prior Knowledge as Encoded in the Meaning Value of Words (The semantic Level)

Semantics "is the study of meaning communicated through language" (Saeed, 2003). It refers to the connection between words and their referents. Semantics is the study of how language and signs convey meaning. Understanding the relationship between words, phrases, sentences, and punctuation and how body language, tone, and facial expressions impact meaning are a few examples (Plamer, 1981). Lexical semantics is a linguistic subfield concerned with the representation of word meanings, their relations, and the relationship between word meaning and sentence structure or syntax. It makes a significant contribution to the comprehension of vocabulary acquisition in both native and non-native contexts (Saeed, 2003; Yule, 1996). Lexical semantics is the study of the meanings of words (Yule, 1996). The term "lexical relation" refers to the conceptual relationship between words. Phonetic, morphological, and morpho-syntactic relations, such as rhyme and alliteration, are all part of semantic relations.

According to Jackendoff (1983), lexical semantics is an example of concentrating on the mental lexicon, which is an internal dictionary in the mind that locates the store of knowledge about words, their meanings, and the relationships between those meanings. Furthermore, lexical semantics studies how word meanings are broken down into smaller units and how these meanings influence the syntactic and semantic characteristics of usage. Both semantics and pragmatics study aspects of meaning; however, communication gives more weight to semantic interpretation. This observation enjoins the shift of focus toward understanding with respect to context in a communicative setting (Kecskes, 2023)

2.1.5 Present Experience (The Pragmatics Level)

There is widespread agreement that the term "pragmatics" originated with Morris' 1938 essay. Thus, Charles Morris was credited with the oldest definition in 1938. He defines pragmatics as "the relation of signs to their users" (Mey, 2001, 4). Recently, Huang (2017) defined pragmatics as the study

of language use in specific situations. According to the DMM, a dialectic communication model is required for the pragmatic domains within CL. The DMM highlights the dynamic nature of speech communication, wherein interlocutors try to adapt their language to a situation or context that their language initially contributed to creating. It does this by building on the reciprocity between cognitive context expressed in language and actual situational context in meaning construction (Kecskes, 2023).

The DMM identifies a number of communication process issues that could cause miscommunications and necessitate meaningful negotiation. The DMM, in contrast to Clark's contribution theory, acknowledges meaning as the outcome of the "clash" of two or more private contexts (the addresser and addressee contexts) in a real situational context. This distinction is because the real situation context is typically processed differently from the addresser and addressee points of view. This results in a distinct communication dynamism that is characterized by ups and downs and unfinished and unacknowledged statements (Kecskes, 2023). On the pragmatic level, the DMM depicts the present experience as one of the essential components for the dynamic construction of meaning. The actual situational context first indicates the present experience, followed by the intended meanings.

2.1.6 Actual Situational Context

There are numerous ways in which the term "context" can be used. It is described in the Concise Oxford English Dictionary as follows:

- The first part defines context as: "the circumstances that form the setting for an event, statement, or idea"
- The second part defines context as: "the parts that immediately precede and follow a word or passage and clarify its meaning". The linguistic context, or the parts of language that either come before or after a word, an expression, or a larger lexical unit, are not referred to in the second part of the definition, whereas the first part refers to what we can call the scenario or extralinguistic context. This part is one facet of context.

Numerous anthropologists, philosophers, and linguists go into great detail about context. According to Malinowski, language is interpreted in the context of the situation and culture in which it was used. Malinowski's phatic Communion concept refers to the primitive language of Trobriand islanders, where the meaning of words depends on context (Indrawati, 2009). To convey their true meaning, words such as "wood," "paddle," and "place" required free interpretation. According to Malinowski and Widdowson (2017), the meaning of the phrase "We arrive near the village of our destination" (literally: "We paddle in place") can only be determined in context.

According to Widdowson (2017), studying a language spoken by people from different cultures must be combined with studying their culture and environment. Malinowski's context of situation theory posits that speech, which includes technical terms about the environment, is influenced by social behaviors (Indrawati, 2009). Meaning is the outcome of the interaction

between past and present experiences. Context is created in different forms (linguistic and extralinguistic), by different interlocutors (individuals or communities), and in different time (from past and present experiences). The waiter, who heard the words on their own, interpreted them as the guest rejecting or, at most, remaining vaguely noncommittal. The example clarifies the difference between pragmatics and semantics and the effect of context on communication; in a polite acceptance, it expresses the exact opposite of what it means.

2.2 The Intended Meaning

The concept of "intention" is taken from Searle's (1983) definition and has expanded to highlight its dynamic, non-summative, and emergent qualities. In addition to the emphasis of the cognitive- philosophical approaches on the importance of intention in conversation, it is important to consider the dynamic process in which the intention may emerge as a result of the conversation. According to this perspective, the primary organizing principle in the communication process is intention, which is a dynamically shifting phenomenon.

There are different types of intention. These types include information intention, communication intention, and referential intention. The first type, the informative intention, is not limited to explicitly conveyed meaning in language. Communication takes place through verbal and non-verbal means (such as sniffing) depending on the very intention of the addresser to let the addressee know about something. In the example, Olivia opens the door of the room and waves her hand in front of her nose. Her friend is aware of the unpleasant odour in the room even though she doesn't express it. Olivia's friend understands it without any words because her action was meant to inform her. Informative intent refers to the informant's purpose in making the informed party aware of a specific piece of information.

The second type, communication intention, involves making an effort to convey a message in a manner that clearly indicates to the recipient that this effort is being made. It is not enough for the addresser to simply intend to communicate; the addressee must recognize this intention and also be aware of their understanding. This situation becomes one of mutual manifestos. For instance, in the statement, "my mother doesn't close any of the windows," the addresser intends to convey the idea that "There is a bad smell in here," while expecting others to understand this specific message. Upon such apprehension, we denote it as the intention to communicate; in other words, a communicative intention.

The third type, referential intentions, the mental states of the speaker when referring to some object or person while using one of these "this," "that," "he," or otherwise proper names. For example, when I say, "That is my book," and I am pointing at a notebook, my intention is to indicate some object to the recipient. Referential intentions work in interpreting context-sensitive expressions and are used in semantics and pragmatics to deal with how the

speaker controls meaning. Scholars like Donnellan, Kripke, and Evans show how the intentions to refer affect descriptions and proper names (O'Rourke, 2019).

In the present study, the data consists of scientific articles where the dialectic contexts are merely simulated by scholars (scientists and researchers), on the one side, and readers, on the other side. Thus, the addresser's intention that is inferred by the addressee can be figured out by the application of RT principles.

2.3 Related Works

Al-Issawi's (2025) Study

The study is entitled "Critical Discourse Analysis of Media Discourse Related to the Impact of AI on Jobs: Corpus-Assisted." This study uses corpus methods to analyze media discourse using Fairclough's three-dimensional model by identifying themes and modes that influence the audience's perception of the effects of AI on jobs. A corpus of 16486-word interviews from the BBC YouTube channel that discussed AI and jobs was assembled. The most frequently introduced themes are identified through quantitative thematic analysis, which is carried out using AntConc for frequency, concordance, and n-grams. The results show that specific modal verbs, like will, can, should, might, and may, are strategically employed to counterbalance opposing cautious and optimistic viewpoints, highlighting opportunities (productivity, reskilling, and innovation) and challenges (job replacement, regulations, and ethical concerns). In conclusion, the media discourse utilizes modality as a rhetorical instrument to shape public opinion, delineate power relations, and endorse ideological positions that emphasize government regulation and accountability, all while portraying AI as perpetually manageable and under control.

Abdulhameed and Al-Sieedy's (2024) study

The study is entitled, "A Critical Discourse Analysis of Artificial Intelligence in Gates' Social Media Content." This study explores how AI is portrayed in Bill Gates' social media posts to reveal the hidden beliefs of one of the most significant personalities in the AI industry. To examine lexical choices and intertextuality, they used an eclectic model of CDA that is made up of Van Dijk's ideological square and Fairclough's three-dimensional approach. It is observed that Gates used prompting adjectives that implied AI (the "self") is a necessary and safe technology for society, thus positively characterizing it. However, the researcher emphasizes in his depiction of the "other" environment by using disagreeable adjectives. The speech is not only technically sound but also promotes the social advantages of AI, further solidifying his standing as a leader and innovator. The study also discovers that Gates strategically constructs ideology through language by portraying AI as beneficial and inevitable, which significantly expands power and control over public opinion.

In addition, there is the study by Mahmood and Khalil (2025), which is titled "The Cognitive Linguistic Construction of Mental Disorder Anti-Stigma in WHO Reports." By integrating past experiences with current context, the researchers have employed the Dynamic Model of Meaning (DMM) to demonstrate how language generates anti-stigmatization for mental disorders. Within the framework of CL, the study uses a qualitative research methodology backed by manual statistics based on Kecskes' (2023) DMM. The methodology is employed to examine the linguistic construction of the concept of mental disorder anti-stigma in WHO reports. The results demonstrate that WHO makes greater use of general societal information than of anecdotes. The reports primarily use social intentions and concentrate on society as a whole. According to the study's findings, WHO encourages a communal and societal strategy to lessen the stigma associated with mental illnesses? It employs language as a tool to shape behaviour, promote inclusivity, and foster public understanding. In conclusion, the primary objective is to alter the attitudes and behaviors of communities.

3. The Analytical Part

3.1 Methodology of the Study

The present paper is a cognitive-linguistic one. The study adopts a mixed method that integrates qualitative and quantitative procedures to produce more objective results. The current study extracts data from SAs that delve into the positive and negative aspects of AI. Such a study is crucial in finding out not only how meaning is constructed but also how often evaluation strategies recur through various texts (Denzin & Lincoln, 2017). The current study extracts data from SAs that delve into the positive and negative aspects of AI (artificial intelligence) SAs have been selected as a source of the data since AI is one of the major technological developments of the modern era that touches on various scientific and professional domains. Scientific discourse itself plays a fundamental role in molding the perception of AI by outlining its positive and negative aspects. The data for the current study consists of sixteen extracts selected from eight SAs that have written about AI. In linguistic studies, in general, preparing the data depends on the criteria of genre, source, and size. The first important point in creating data is the genre that the researcher intends to investigate. In addition, the topic, objectives, and research questions play a role in this perspective. The focus of SAs in general is primarily on the positive and negative traits of AI. Pardede (2012) argues that SAs can be realized through various forms of academic and scientific writing, including research papers, dissertations, monographs, news reports on scientific facts, conference proceedings, theses, scientific reports, posters, review articles, summaries, and abstracts. This study applies Kecskes' (2023) DMM to the data, the following procedures are adopted in the analysis: conducting an initial thorough reading

of each extract to clearly understand the contents; Reviewing each extract to designate the salient words (and phrases) which indicate **experimental prior knowledge** (of particular scientific experiments) and those that indicate **general scientific prior knowledge** about AI; examining the context of each extract to decide whether the positive and negative traits of AI stem from **speculative** or **empirical** bases that frame the contextual clues indicated in the statements; applying Sperber and Wilson's (1986) RT to each extract to interpret the intentions of the scholars; Comparing the results obtained from conducting the previous procedures for analyzing the extracts of the AI positive traits to those obtained from analyzing the extracts of the AI negative traits.

3.2 Data Analysis

According to the first objective which states “Determining whether the scientific articles depend more on experimental prior knowledge (of particular scientific experiments) or on general scientific prior knowledge to construct the positive and negative traits of AI,” the results arrived to by analyzing the extracts of the positive traits are as follows:

Table (1)
Prior Knowledge on the Positive Traits

Extract	General scientific prior knowledge	Experimental prior knowledge
EX. 1	1	
EX. 1		1
EX. 2	1	
EX. 3	1	
EX. 4	1	
EX. 5	1	
EX. 6	1	
EX. 7	1	
EX. 8	1	
Toal	8	1
Total Frequency		9

In Reference to the same objective, the results of analyzing the prior experience on the negative traits are as follows:

Table (2)
Prior Knowledge on the Negative Traits

Extract	General scientific prior knowledge	Experimental prior knowledge
EX. 1	1	
EX. 2		1
EX. 3		1
EX. 4	1	
EX. 5		1
EX. 6		1
EX. 7		1
EX. 8	1	
EX. 8		1
Total	3	6
Total Frequency		9

According to the second objective, which states, “Determining whether the statements of the positive and negative traits of AI stem from speculative or empirical bases that frame the contextual clues indicated in the statements,” the results arrived at for the positive traits are as follows:

Table (3)
The Bases for the Contextual Clues of the Positive Traits

Extract	Speculative	Empirical
EX. 1		1
EX. 2	1	
EX. 3		1
EX. 4	1	
EX. 4		1

EX. 5	1	
EX. 6	1	
EX. 7	1	
EX. 8	1	
Total	6	3
Total Frequency		9

Within the domain of the second objective, the majority of the statements on the negative traits indicate empirical contextual bases rather than speculative ones, as is shown in table 4:

Table (4)

The Bases for the Contextual Clues of the Negative Traits

Extract	Speculative	Empirical
EX. 1	1	
EX. 1		1
EX. 2		1
EX. 3		1
EX. 4	1	
EX. 4	1	
EX. 5		1
EX. 6		1
EX. 7		1
EX. 7	1	
EX. 8		1
Total	4	7

Total Frequency	11
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According to the third objective, which states, “Generating lists of the intentions of the scholars in exploring the positive and negative traits of AI”, the analysis has led to the following intentions of the scholars for presenting the positive traits of AI:

Table (5)
The Intentions of Scholars for the Positive Traits

Extract	Intention	Type of Intention
EX. 1	Encouraging people to consider alternatives to human decision-making.	Communicative
EX. 1	Considering AI as a reliable decision-maker.	Communicative
EX. 1	Convincing the reader to adopt AI in critical processes that require agreement and decision-making.	Communicative
EX. 2	Informing the reader that AI tools are more than mechanical assistants.	Informative
EX.2	Encouraging people to consider AI as alternative tools.	Communicative
EX. 3	Encouraging people to rely on AI tools in high-stakes decision-making.	Communicative
EX. 3	Encouraging people to consider AI as a trustworthy tool to provide the perfect solution for complex problems.	Communicative
EX. 4	Directed towards the intention of describing the necessity of using AI in our lives.	Informative
EX. 4	Convincing the people to use AI to enhance industry and technology.	Communicative
EX. 5	Convincing people to adapt and use AI in industry.	Communicative
EX. 5	Convincing the reader to see AI not as competing with humans but complementing them by enabling higher-level thinking and creativity.	Communicative
EX. 6	Informing the reader that AI tool does this task not only as an assistant tool but also as a substitute and life saver.	Informative
EX. 7	Informing the reader to consider AI as a beneficial tool in modern business.	Informative

EX. 8	Informing the reader to see AI as a problem-solving machine to assist them in their education.	Informative
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The intentions of scholars in exploring the negative traits of AI are presented in table 6:

Table (6)
The Intentions of Scholars for the Negative Traits

Extract	Intention	Type of Intention
EX. 1	Educating the readers about ethical issues in AI: privacy concerns, bias and discrimination.	Communicative
EX. 1	Keeping people alert of the increasing future risks of AI.	Informative
EX. 2	Improving that the ability of AI to produce original ideas cannot overcome human creativity and originality in addressing serious challenges.	Communicative
EX. 3	Improving that AI has manipulated social media platforms which have been used by some politicians.	Communicative
EX. 4	Convincing that AI might lead to economic crises because AI is replacing human in performing certain jobs informative.	Communicative
EX. 5	Altering the mentality of the readers about using AI as a creative tool.	Communicative
EX. 6	Altering the mentality of the readers by showing the shortcoming of AI; that cannot be overcome learn from experiences and mistakes.	Communicative
EX. 7	Warning and emphasizing the fact that AI complements human intelligence rather than replacing it.	Communicative
EX. 8	Warning the reader about using AI in producing academic research.	Communicative

The fourth objective, which states “Finding out the types of intentions of stating the positive and negative traits of AI in the SAs”, explores the three types of intention: communicative, informative and referential.

The results of analyzing the extracts on the positive traits have shown that the communicative intentions score more than the informative ones, while the referential intentions have scored zero. This is indicated in table 7:

Table (7)*The Types of Intentions of the Positive Traits*

Communicative	Informative	Referential
9	5	0
Total: 14		

As for the extracts on the negative traits, the frequencies of the three types of intention are as follows:

Table (8)*The Types of Intentions of the Negative Traits*

Communicative	Informative	Referential
8	1	0
Total: 9		

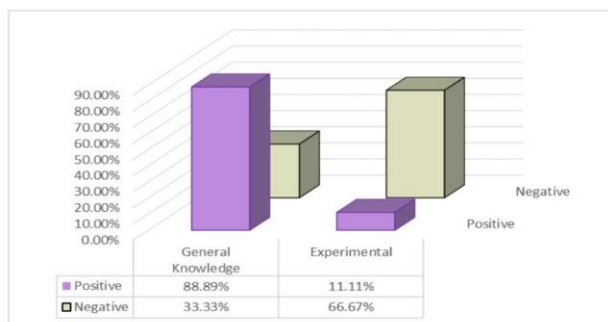
The fifth objective states, Identifying similarities and differences between the cognitive linguistic construction of the positive and negative traits of AI in the SAs". As for the general and experimental prior knowledge, the similarities and differences in constructing the positive and the negative traits are illustrated in Table (9):

Table (9)*The general and experimental prior knowledge in constructing the positive and the negative traits*

No. Types	Positive		Negative	
	Frequency	Percentages	Frequency	Percentages
General prior knowledge	8	88.89%	3	33.33%
Experimental	1	11.11%	6	66.67%
Total	9	100%	9	100%

Figure (2)

The general and experimental prior knowledge in constructing the positive and the negative traits



As for the contexts of the positive and negative traits, table (10) illustrates the differences:

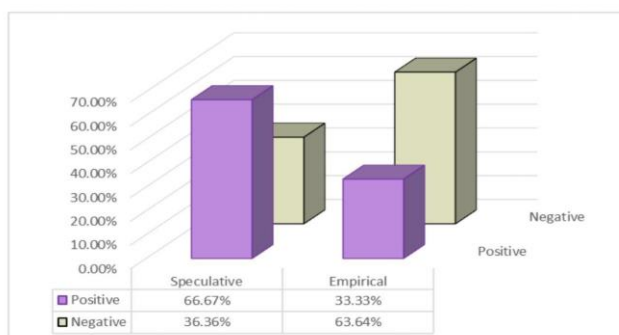
Table (10)

The context in constructing the positive and the negative traits

No. Types	Positive		Negative	
	Frequency	Percentages	Frequency	Percentages
Speculative	6	66.67%	4	36.36%
Empirical	3	33.33%	7	63.64%
Total	9	100%	11	100%

Figure (3)

The context in constructing the positive and the negative traits

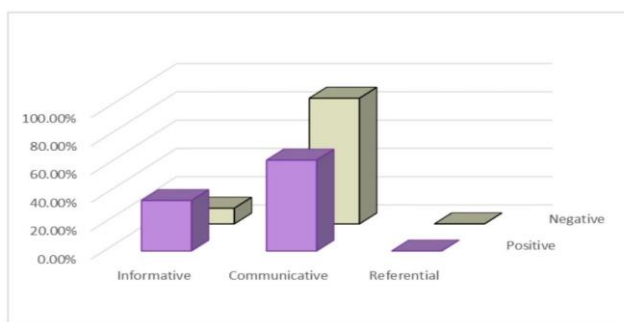


The analysis has resulted in two different lists of intentions for constructing the positive and negative traits. Constructing the positive traits, on the one hand, focuses mainly on encouragement, promotion, and reassurance to

emphasize the reliability and benefits of AI as complementary to human work. The intentions are both communicative and informative. Constructing the negative traits, on the other hand, focuses mainly on educating, warning, and critiquing to emphasize the ethical concerns and risk to society. As is the case with the positive traits, the intentions are both communicative and informative. Table (11) shows the frequencies and percentages for the types of intentions:

Table (11)*The types of intentions for the positive and negative traits*

No	Positive			Negative		
	Types of Intention	Frequency	Percentages	Types of Intention	Frequency	Percentages
1	Informative	5	35.71%	Informative	1	11.11%
2	Communicative	9	64.29%	Communicative	8	88.89%
3	Referential	0	0%	Referential	0	0%
4	Total	14	100%	Total	9	100%

Figure (4)*The types of intentions for the positive and negative traits*

4. Discussions

It is obvious from table 1 that, in presenting presenting prior knowledge on the positive traits, scholars rely more on general scientific prior knowledge than on experimental prior knowledge. The positive traits of AI systems point to potential or expected benefits of AI. They relied on past technological experience instead of experimental data. Since the idea of on AI system is a relatively recent and rapidly improving technology, many of the positive traits of AI have not been yet achieved. This fact is clearly shown in extract 5: has provided advantages and benefits not seen before”. Although, users might be already getting benefits from AI in their applications, until now the more general long-term positive traits have not been seen, tested or confirmed yet.

So, as a result, all these positive traits that were mentioned in the eight extracts were derived from accumulated, observable knowledge, such as in extract 1; “has been trained using unbiased data”. From a linguistic perspective, the patterns of phrases based on general prior knowledge usually use broad terms to present past experience instead of reporting specific measurements.

According to table 2, the scholars rely mainly on experimental prior knowledge in constructing the negative traits of AI. Negative traits of AI are frequently derived from experimental and accumulated experience since many of AI system risks and limitations become evident only when systems are subjected to systematic, tested, and evaluated or documented settings. The scholars prefer to rely on experimental studies when they present negative claims about AI because they aim to avoid subjective and exaggerated criticism as much as possible. These negative traits are often presented through measured outcomes or case studies, such as indicated in extract 2, "One Scientific Paper," which provides concrete evidence to support these claims. Accordingly, only a few of the negative trait's stem from general prior knowledge.

These usually provide well-known issues that have been brought up many times, since these issues have become familiar and they might be reference to as general prior knowledge, as in the case in extract 1, “*often trained on data*”. Linguistically, experiential negative traits adopt specific, technical, and providential patterns, while general prior knowledge is based on broader descriptive phrases rooted in shared experience. Therefore, the presentation of evidence-supported issues places negative traits within an experimental prior frame.

As table 3 shows, the majority of the statements on the positive traits indicate speculative contextual bases (built up by using modality or hedge expressions) rather than empirical contextual bases (built up in a more direct way and often rely on explicit contextual results). An AI system is still rapidly developing and changing system. Many of AI positive traits are put in future contextual settings that have not yet been demonstrated and achieved, as is indicated in extract 8: “*This can potentially improve learning outcomes....*”

Scholars prefer to present the positive traits of AI in the form of expectations rather than empirical facts since it is impossible to collect complete, real-world data. Moreover, the empirical cases need long-term evaluation. The empirical evaluation of AI systems often relies on a specific task (such as speed or efficiency) rather than on functional or social outcomes.

The scholars adhere to a scientifically accurate approach by avoiding the generalization of facts and instead focusing on transforming insights from small, simple domains into broader international benefits. For example, in extract 4, “*AI is the technology that is making each of these devices smarter...*” refers to empirical information that comes from everyday experiences noticed by users in their devices. In fact, many AI systems operate “black boxes”; that means the outcomes of AI are vague even for their developers. Vagueness and ethical norms are additional reasons that lead

scholars to adopt speculative patterns when describing the positive traits of AI. There is a kind of difficulty in empirically measuring the of AI and how AI systems are discussed in SAs. Recently, AI systems, especially recent apps such as ChatGPT, are described and supported by hype-driven narratives which are far beyond what current evidence can prove (Markelius et al., 2024). These narratives are produced by developers and companies and also on social in social media. The aim is to present the ability of AI as a transformation system which can facilitate the life of an individual socially and intellectually. Linguistically, these inflated claims rely on generalized and aspirational patterns that tend to shed light on future expectations rather than systematic observation or scientific experiments, as in extract 5, "**these technologies not only save time, but also potentially save lives...**".

Unlike the positive traits, the negative traits stem from documented problems and observed consequences. Negative traits (such as algorithmic bias, privacy violations, and social harm) start to appear in AI systems in the real world. Case studies, field reports, and rigorous observations have revealed these traits. These negative traits have ethical and legal as well as social consequences. So, scholars should support these claims with evidence rather than hypothetical claims, since academic norms adopt evidence-based methods when criticizing any system. This is clearly indicated in extract 3 "**Ferdinand Marcos, Jr., wielding a TikTok troll army to capture the votes of younger Filipinos during the Philippines' 2022 election**".

From a pragmatic perspective, the negative traits that are in real-world contexts are also dependent on empirical contextual clues since they rely on observable consequences. Negative traits of AI are presented facts, such as in extract 5, "Creativity is a human trait that machines cannot mimic", or observed effects such as in extract 8 "New AI technologies increased the risk of creating falsified work". Consequently, the statements of the negative traits of AI stem from empirical bases that frame the indicated contextual clues.

Collectively speaking, the intentions are orientated towards shaping a favorable perspective on AI. They emphasize the potential for AI to complement human abilities rather than replace them. They address certain concerns about AI (mistrust, doubts about the reliability of AI, and displacement concerns) by portraying AI as a trustworthy and efficient tool. The intentions also focus on the ability of AI to deal with complex problems and handle decision-making. AI can provide innovative solutions, which are, sometimes, beyond human ability. Moreover, the intentions view AI as a cooperative partner in many fields (e.g. education, daily tasks, industry). AI is also intended as a tool that enables people to focus on creativity and innovation. These intentions encourage people to accept and adopt AI as a tool for progress and innovation; AI can improve the quality of life.

The list of intentions in Table 6 shows that the scholars mainly intend to emphasize a critical and ethical understanding of the impact of AI on society. The scholars address ethical issues (e.g., privacy concerns, discrimination, and bias) not to condemn AI but to educate the people about its critical social

implications. They want to ensure that the employment of AI remains moderate. The scholars have focused on certain risks (job displacement, the exploitation of AI for social and political manipulation, and economic crises) to encourage individuals and organizations to mitigate these challenges.

In addition, they emphasize the limitations of AI in the domains of originality, creativity and ethics to maintain a balanced view of AI; it is a tool that complements human intelligence rather than replaces it. This orientation of the intentions is to preserve the value of human creativity and intuition and encourage human decision-making. The scholars also warn against misusing AI in sensitive fields (e.g., social media and academic research) to achieve integrity in these fields.

The scholars usually present, **the positive traits of AI** in way that is intended to convince the reader to recognize the importance of AI, rather than merely informing them about future expectations. Linguistically, the scholars use more than one pattern in the statements to achieve communicative intentions, such as using the verbs “encouraging” and “convincing” in the statements, or even using modal verbs such as “can” or “have” to persuade people to try to adopt AI in their lives, as is the case in extract 1 “*That can help provide more equity in things*”. The informative intentions aim to clarify the reality of AI's positive traits without additional interpretation or attempts to change people's behavior towards AI.

However, since AI is widely viewed as a new promising system, the scholars intend to convince the people, as much as they can, of the potential benefits of AI. Thus, they tend to make communicative rather than informative intentions. Linguistically speaking, referential intentions are achieved through descriptive statements with Referential terms. They refer to and identify concepts or sources without justification or argumentative meaning. This type of intention is absent in the SAs on the positive traits of AI because the AI system is already known to the readers. So, the scholars do not intend to refer to or identify AI technologies; instead, they intend to explain and justify the purpose of using AI.

It is obvious that the communicative intentions are of the highest frequency. These findings This can be attributed to the fact that negative traits of AI here are presented in SAs which depict very specific contexts. SAs represent neutral and purely factual discourse. When scholars describe the negative traits of AI, they usually explain Statements that express intentions regarding the negative traits of AI are presented as evaluative arguments, which not only inform the reader about the risks of AI but also acknowledge the future consequences of those risks (e.g., warning the reader about using AI in academic research). Therefore, such statements involve both judgements and attempts to persuade. Thus, communicative intentions are more prevalent than other types of intentions. Thus, the communicative intentions are the majority among the other types of intention.

Informative intentions are just meant to inform the readers about certain negative facts and future consequences of AI with no further interpretations.

In this case, the aim of the scholar is to make the reader recognized the piece of information itself. However, scientific scholars prefer not to follow this pattern of intention. They usually express uninformative intentions since the purpose of SAs goes beyond SAs tend to engage the readers to make critical thinking and address real-world issues. Scholars encourage deeper understanding and action.

Thus, they adopt communicative intentions, to contextualize their findings and practical concerns. Scholars need to persuade readers and make policy changes; this requires communicative approach.

Referential intention is usually used when the scholar wants to point to things or studies to interpret or judge them. In other words, it is mostly used to describe or list things, not to analyze them. According to the data (SAs) of this study, this type of intention is mostly missing because the scholars also mention topics other than AI systems. They require explanation and interpretation of why this system is a risk and how this system fails, sometimes, to answer the vital needs of people.

Obviously, there is the same number of the total occurrences for the instances of prior knowledge. However, in positive traits, the percentage of general prior knowledge exceeds that of experimental prior knowledge (88.89% for the general and 11.11% for the experimental). For the negative traits, the percentage of experimental prior knowledge exceeds that of general prior knowledge (33.33% for the general and 66.6% for the experimental). This is because the positive traits are based on accumulated observable knowledge and future expectations, while the negative traits rely on specific, technical, and providential pieces of evidence.

There are, clearly, more contextual clues for the negative traits than for the positive traits (9 for the positive and 11 for the negative). The abundance of the contextual clues for the negative traits results from the ethical considerations of these traits. For example, bias and lack of privacy require precise explanation to avoid misinterpretation and to ensure clarity because of the sensitivity of these traits. In contrast, the positive traits (e.g., efficiency and innovation) require a less explanation. In addition, the negative traits need thorough contextualization to be more convincing, while the positive traits are more acceptable for people and require minimal contextualization.

There is also a difference in the type of context; the positive traits rely more on speculative context while the negative traits rely more on empirical context. This difference is due to the fact that the positive traits do not require speculative contextual clues since they predict future benefits and typical outcomes that have not been achieved yet. Negative traits, in contrast, indicate observed cases (e.g., bias and lack of creativity) which are based on empirical evidence. These traits are indicated by experiments and case studies that provide tangible evidence. Experiments and case studies, which provide tangible evidence, indicate these traits. The empirical context ensures scientific and objective criticism regarding the heavy reliance on AI implications.

For both the positive and negative traits, there are more communicative than

informative intentions. The focus on communicative intentions shows that SAs not only want to share information about the traits but also want to shape how people think and act about AI. The call to avoid the negative traits and the encouragement to embrace the positive traits are constructed in a way that engages the addressees intellectually and emotionally to encourage them to change their attitude and behavior towards AI.

The absence of the referential intention is due to the nature of SAs. The referential intention focuses on objective statements of information; they do not engage the addressees or encourage them to change their behavior. SAs construct AI traits within broad scientific frameworks that are of a communicative nature. Thus, ASs go beyond reporting and tend to participate in shaping people's attitudes and behavior.

5. Conclusion

Using the DMM, the cognitive linguistic analysis of the positive and negative traits of AI in SAs demonstrates the way meaning acts as a dynamic process in meaning construction. Accordingly, the paper has arrived at the following conclusions:

1. In the positive traits, SAs depend more on general prior knowledge than on experimental ones. However, in negative traits, SAs rely on experimental prior knowledge more than the general ones.
2. In the positive traits, SAs rely on speculative rather than empirical contextual bases. However, in the negative traits of AI, positive and negative traits stem from empirical bases rather than speculative ones.
3. Two different lists of intentions for constructing the positive and negative traits have been generated. Constructing the positive traits focuses mainly on encouragement, promotion, and reassurance, emphasizing the reliability and benefits of AI as complementary to human work. The intentions are both communicative and informative. Constructing the negative traits focuses mainly on educating, warning, and criticizing them to emphasize the ethical concerns and risk of society.
4. The communicative intention is more dominant than the informative one in both positive and negative traits. The referential intention is missing in both positive and negative traits in SAs.
5. The analysis has revealed interesting similarities and differences between constructing the positive and negative traits of AI, as shown above. Such variation proves the principle of the DMM, which emphasizes the dynamic nature of meaning that arises from the interaction between the prior experience and the present context of the

situation.

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