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ORIGINAL ARTICLE

Gongsun Longzi's "form": Minimal word meaning

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Abstract: Inspired by Gongsun Longzi's "form-naming" idea about word meaning, this paper argues that 1) the internal lexicon contains only the list of word-meaning pairs, with no additional information either as part of word meaning or as a structural level above it; 2) the meaning of word is a minimal C-Form, the identifying conceptual meaning that individuates a concept; 3) C-Form is the interface between word meaning and concept meaning; and 4) a sentence has a minimal semantic content, consisting of the minimal meanings of the words composing it, which is propositional and truth-evaluable, and contextual elements contribute nothing to the meaning of language expressions. This paper adheres to semantic minimalism, believing meanwhile that meaning holism helps in semantics inquiry, since reflection on language meaning differs from language meaning itself.

Keywords: Gongsun Longzi; semantic minimalism; word meaning; meaning holism

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1. Introduction

The basic theoretical tenet of semantic minimalism is that a sentence of a natural language has a minimal truth-evaluable semantic content formed by the principle of compositionality. "The meaning of a sentence is exhausted by its syntactically represented parts" (Borg, 2012: 143). It is necessary, then, that all the words that occur in the sentence must have each its own minimal meaning. For this reason, minimalists hold, first, that the meaning of a word is atomic and cross-contextually invariable so that a token of a word type makes the same contribution to the meaning of a phrase or sentence it is in, and second, that the meaning of a word is referential, or about the world (ibid.: 143–144).

However, semantic holism appears to be a theoretical barrier. There are different expressions of semantic holism, but in general they share what is formulated by the entry in *Dictionary of Western Philosophy*:

[Semantic holism] Also called meaning holism, the view that meaning is holistic rather than atomistic. The unit of meaning is not the word or the sentence, but rather

the theory or language of which the word or sentence is a component. The meaning of an expression lies in its relations with other expressions of the language in which it is embedded. It is nonsense to speak of a linguistic component abstracted from the linguistic whole to which it belongs. (Bunin and Yu, 2001: 914)

So, one cannot make sense of the word *dog*, unless one also knows, as the precondition, the meanings of *domesticated*, *animal*, *pet*, to name just a few of potentially many others (*carnivorous*, *mammal*, *of the same species as wolf*, etc.). These descriptions are themselves concepts expressed by words whose meanings depend on still many other words or phrases, such as *having life*, *antonym of being wild*, *weapon-prey*, *biological taxonomy* and so on and so forth until probably all the words of a language are mobilized for the interpretation. To grasp the meaning of the verb *buy*, one must have at least a conceptual script that involves the roles of buyer, seller, commodity, price, tax, receipt, mall, bargain (probably), etc. Or at the very least, to know the meaning of *sibling*, one has to assume there being more than one child born of the same parents. In a nutshell, conceptual meanings are rich and complex as the semantic contents of words and atomism has to be rejected.

To meet the challenge, the minimalists can take the strategy of showing that semantic holism may lead to absurd theoretical consequences and atomism is a better choice in explaining language meaning, as Fodor and Lepore (1993) did, or they can admit the complexity of conceptual meaning, but insist that words must have their minimal meanings. Borg (2012) proposes the acceptance of organizational lexical semantics (OLS), the main idea of which is, to the effect, that the lexical items may have complex additional information, but in the internal lexicon the additional information “does not constitute the meaning of a word nor does it impose any conditions on the possession of that word’s meaning, instead it imposes constraints on our competence with the word” (ibid.: 193). The additional information is set up as an organizing structure of the internal lexicon above and beyond the word-meaning pair list, whose job it is to group the listed words into different categories (ibid.: 194).

It is certainly important to separate the word meaning from the additional information, but it may be problem-inviting to locate the additional information in the internal lexicon. The danger is that this may well lead to a theoretical sliding into meaning holism, which is exactly what minimalism opposes. To avoid the danger, this paper suggests removing the additional information from the internal lexicon and let the information be part of the system of thought, or a Quinean web of beliefs that an individual has about what things are and how they operate in the world. Besides, minimalists would have to explain what word meaning is and how word meaning can be learnt. So far, there is not yet a satisfactory answer. It is right to say that learning happens as the result of “our transactions with the world, which trigger the acquisition of concepts we can label” (ibid.: 195), but this has not answered the question of how learning word meaning from definition is possible.

To stand on a firmer ground, semantic minimalism would have to address the issues of what the denotation is in the “mere word-denotation pair” (ibid.) in the lexicon since it is not definition (dictionary or otherwise), and where it comes from. These issues are important because defining what literal meaning is that makes communication successful remains a “notorious problem” so far, and where the literal meaning comes from is thus far above the minimalists’ worries (Kawczynski, 2017). That is why this paper is written. In the following sections, this paper begins from a discussion on some questions on Borg’s idea, and then goes on to discuss what the minimal word

meaning is, based on a head-starting idea of ancient Chinese philosopher Gongsun Longzi's, and finally comes to our proposal concerning the minimal word meaning and related discussions. In the following text, capitalization is used to mark concept or word meaning, while italicization, the word form.

2. Reconciling Holism and Minimalism

OLS is adopted to deal with the issue of lexical complexity; i.e. as Borg's example shows, it seems obvious that the possession of the concept BACHELOR requires as the precondition the possession of the concept UNMARRIED, or that knowing the meaning of DOG requires as the precondition knowing the meaning of ANIMAL. Borg's strategy is to weaken the role of such preconditions by rejecting them as constitutive semantic features of the lexical meaning *per se*, but granting them an organizational role of categorizing words in the lexicon. Thus, features such as +ANIMATE and +AGENT are not part of the meaning of a noun like *dog*, but just indicators that the noun *dog* belongs to a category; or +MANNER OF MOTION and +CONTACT function to group verbs *hit*, *kick*, *chop* into one category, though the two features are not part of the meaning of any of the three verbs. The important point is that the word meaning is separated from the other semantic features traditionally believed in semantics to be part of the definitional meaning of a word. In this way, semantic atomism is kept without robbing the concept of its content. This is well justified, since "facts about the world [are] not facts about our language". (Borg, 2012: 200) However, to keep the additional information in the internal lexicon entails certain difficulties.

The first problem with OLS is that if the additional information, essentially semantic features, remains in the lexicon, it is not successful in defending semantic atomism. OLS sets up a super-ordinate level where the semantic features categorize words instead of being a part of the meaning of words in the pair list of the lexicon. If so, the issue of lexical complexity still remains. For OLS still assumes that to know that a word falls into certain category means to know the semantic features that go with the word. For instance, to know which category the word *boy* falls into requires, as precondition, knowing the features of +ANIMATE, +HUMAN, +YOUNG, and/or +AGENT (if the word *boy* serves as the subject of an active affirmative sentence) and so on. This is not much different from the decompositional theory of meaning. What is more, the matter can be even more complicated. The word *girl* may fall into the same category as *boy*, if a category, say CHILD, has the features of +ANIMATE, +HUMAN, +YOUNG, but a girl is certainly not a boy and therefore another semantic feature, namely SEX, is necessary to shovel *boy* and *girl* into different categories of MALE and FEMALE respectively. The additional information thus programmed is not just a device of competence constraint, but as a structural part of the lexicon these semantic features indirectly (categorically) define the meaning of words. This means in effect that to know the meaning of a word, one must also possess the additional information as precondition, a thesis which OLS sets out to reject. More seriously, these features are themselves meanings, which in turn must have their own super-ordinate additional information level. If this is the case, OLS slides into meaning holism unavoidably.

The second problem with OLS is the same as that we may question the definitional theory of meaning: if the meaning of a word is defined by, therefore composed of, the semantic features, how many features should we list in order to complete a word's meaning? If, say, +ANIMAL is

a semantic feature of the meaning of *dog*, what about PET, BOW-WOW, DOMESTICATED and so on? And if +AGENT is also a feature, what about +INSTRUMENTAL, or +RECIPIENT? Would +COUNTABLE, –MATERIAL and other syntax features also be there? The features can be enumerated almost endlessly. The same question can be asked about the additional information structure of OLS, even though it actually sums up, or generalizes, in a tidy way the originally word-bound features into a level above and beyond the word pair list. Just how many pieces of such additional information must the organized structure contain in order that all the words in the lexicon can be located appropriately in different categories? How many categories must there be, such as case of *boy* and *girl* mentioned above imply? What kind of category would the meaning expressed by *wild-dog* fall into? This indicates that the content of the organizational structure cannot be easily determined. If we specify certain limited features to be in the structure, that would be virtually the same as giving definitions to the meanings of words in the lexicon, resulting in supporting definitional theory of meaning; but if the number of features cannot be specified, then the content of structure can be astronomical in size and complicated in its internal relationships, resulting in adopting meaning holism.

The issue of learning the meaning of a word by definition is also a problem. Borg (2012: 195) realizes this issue, but states just curtly, following J. Fodor, that word meanings are not learnt, nor are they innate at birth, but “acquired through our transactions with the world, which trigger the acquisition of concepts we can label”. This, however, is not enough, because word learning by definition is a fact, which cries out for an explanation as to why it is possible. To be sure, as mentioned above, one doesn’t have to know the meaning of either ANIMAL or PET prior to knowing the meaning of, or using, the word *dog*, but it actually happens that one can learn to use the word *dog* by being told that it is a kind of pet animal that bow-wows. Word meaning is not innate at birth, but if it is acquired through our interaction with the world which is a process of concept forming and labeling (and we agree with Borg that it is), then this process simply cannot happen in the internal lexicon, because the organizing structure contains semantic features that are part of concepts already formed. Or else, whose features would they be of? But if we put concepts with their full content into the lexicon, we are already advocating holism. So this paper holds that if semantic atomism would hold its ground, an explanation must be given of how learning word meaning by definition is possible. Such an explanation cannot be given without incurring theoretical trouble of holism, if the additional information, which are semantic features in essence, remains in the internal lexicon.

For these reasons, we suggest removing the additional information structure from the internal lexicon, regarding the information as part of the general conceptual or cognitive system. This is reasonable because if the additional information adds to the meaning of a word and functions to impose constraints on the competence with the word, there is no reason why all the other information in the knowledge repertoire, or the web of beliefs, an individual possesses about the world would not do the same job. If +ANIMAL adds to the meaning of and constrains the competence with the word *dog*, so do many other associations, such as +PET, +TRAINED FOR HUNTING, +LOYALTY, to name just three. Indeed, such additional information helps the individual who uses the word *dog* to answer questions like “What is a dog?” or to explain how a dog differs from a wolf in spite of their being highly similar in appearance, or to speculate on whether wild dogs are dogs. This postulates that the individual also knows what a pet is, what hunting

means, what a friend means and so on almost endlessly. This process is regressive until the entire web of beliefs the individual possesses may be involved.

However, it is the conceptual thought about dog that is activated by the meaning of the word *dog*, the thought that A DOG IS AN ANIMAL, A DOG IS LOYAL and so on and so forth. This does not entail that the contents of the thought compose the meaning of the word. The conceptual meanings can be rich, complex, multi-dimensional and dynamic, but the meaning of a word is a simplex. Later in this paper, we shall elaborate on this topic, but here we want to emphasize that meaning holism and semantic minimalism are not conflicting with each other. This is not only a matter of compatibility between the basic theses of the two theories (Cf. Kawczynski, 2017). More critically, they are two theories for different purposes: meaning holism is an epistemological theory exploring the content, structure and function of the mind, concept or thought, while semantic minimalism is a theory of philosophy of language concerned with the form and meaning of words or sentences as well as the role of language in human communication. Just as Borg (2012: 201) says, facts about dog are not facts about the word *dog*. The “facts” here does not merely denote actualities out there, but should refer more essentially to our conceptualization and interpretation of the actualities. A rose at the door can be an objective fact, but that the rose is red and fresh, that it is from someone, that it symbolizes love and so on are our mental facts, which may vary from individual to individual (in some places, people eat deep-fried rose petals, for whom it may conjure up the mental fact of the rose being eatable).

Viewed this way, minimalism does not need to stand in opposition to holism at all. Indeed, minimalist accepts that “a semantic theory is a small part of what one needs to know to operate successfully within the world” (Borg, 2012: 201). In other words, language meaning is a small part of our knowledge about the world in general. Fodor (2008: 198) says, “the semantics of thought is prior to the semantics of language”. This means for the present topic of this paper that 1) concept meaning and word meaning are two different but related analyses and 2) the minimal word meaning comes from concept meaning. Minimalism can accept holism as the meaning theory of conceptual thought while insisting on the minimal word meaning. This does not mean that the issue of minimal word meaning is trivial or that word meaning must be grounded on holism; what needs to explore is the relationship between conceptual meaning and word meaning.

3. Gongsun Longzi’s word meaning: a conceptual form

Our solution to the problem we have in hand is not complex: with the inspiration from Gongsun Longzi’s idea on word meaning, we propose what the minimal meaning of word is and how it is related with concept, or conceptual thought. This is a heavy job, but we can manage if we focus primarily on word meaning. For this reason, we’d like to make a claim before we go on, that this paper treats thought and knowledge, concept and conception altogether as the content or mechanism of the cognition, or conceptual, system, realizing meanwhile that these are certainly different issues. Surely, an individual may have the knowledge that WATER IS H₂O without thinking about H₂O whenever she uses the word *water*; or one may have the concept of DOG with a conception of it, say as dirty animal with fleas, very different from that of another person, say as a pet. The reason why we decide to lump these issues together is that 1) thought, knowledge, concept, etc., are themselves big questions philosophically or scientifically which have not been satisfactorily answered and it is

beyond a mere essay like this to talk about what they are, and therefore 2) it suffices for our present topic to treat them as something different from the meaning of language word, just for the sake of convenience of discussion.

Now let's return to our topic of what the denotation is, if the internal lexicon contains a list of word-denotation pairs, or word-meaning pairs. Our idea is started by Gongsun Longzi, an ancient Chinese thinker of over 2,500 years ago, whose famous propositions include "*A chicken has three feet*", "*The hard, the white and the stone are two things*", "*White-horse is not horse*" among others. These traditionally mislabeled "sophistic" propositions are in fact Gongsun's rationalistic speculation on word meaning¹. For instance, by saying "*A chicken has three feet*", Gongsun is arguing for the necessity to distinguish two different facts, the empirical fact that a chicken has two feet and the mental fact that the concept of CHICKEN-FOOT is the meaning of the word *chicken foot*. He had to do so at the time when there was no word for CONCEPT. Gongsun might well have been the first thinker in the intellectual history of China to be aware of the issue of concept, however rudimentary his idea about concept might be.

This is further witnessed by his distinction of the knowledge that the mind grasps from that of sensory experiences. In his essay, entitled *On Hardness and Whiteness*, Gongsun argues that the perceptual experiences with specific things out there produce only preliminary unreliable knowledge, and only what the mind extracts from the perceptual experiences can be the true knowledge. By saying "*the hard, the white and the stone are two things*", he emphasizes the hard and the white as the true knowledge that the mind extracts, the hard being not the property of a stone but that which makes a thing hard. The same is true of the white. Just as the meaning of *stone* is STONE, a conceptual entity, the meaning of *hard* and *white* are HARD and WHITE, conceptual entities independent of STONE or anything else.

His famous "sophistic" statement of "*White-horse is not horse*" should be understood in the same way. With this, he attempts to show that the meaning of a word is a conceptual entity instead of being directly linked with an actual object, as ordinary people understand it. His strategy is to argue that as an empirical fact, horses existing out there do have colors, white, brown, black, etc., but as a concept, HORSE is colorless. The word horse names the form (of HORSE) and white the color (of WHITE). He says, "*Horse' is what we use to name a form*", in which the *form* is not the empirically perceivable appearance or shape of a horse but the conceptual form of HORSE. What names a color cannot name a form, nor vice versa, because the form (HORSE) does not require any color (WHITE) to be one of its meaning features; nor does the color depend on any form for its meaning. As to the compound name such as *white horse*, Gongsun chooses to regard it as denoting the form of WHITE-HORSE, another form independent of both HORSE and WHITE.

The key word here is "form". On the one hand, his form is similar to Plato's Idea in that it is the abstracted idea that the mind grasps of a category of objects, but unlike Plato, Gongsun does not grant his form any realistic existence. Instead his form remains a mental conceptual entity constituting the meaning of a word. On the other hand, his form also resembles Fodor's concept, or LOT word (Fodor, 2008), in that it is the atomic representation of a category of external objects. However, while Fodor is concerned with the whole informational representation caused by external

1. Elsewhere we have given our reasons why these propositions should be retranslated and reinterpreted and limited by space we can't reiterate them here. Interested readers could refer to the Chinese-English bilingual works by Liu (2015).

objects, Gongsun proposes his form as a meaning radical that a word names, which is just a conceptual form with no other informational content. For instance, the STONE is a pure conceptual form without hardness or whiteness as its meaning components. The same is true of HORSE. No information about what is known about horses constitutes the meaning of HORSE. A horse runs fast, a horse hisses, a horse has a color, a horse is a herbivorous animal, etc., these may all be true empirically, but none of them contributes to the meaning of HORSE, a pure conceptual form in the mind. This is true also of adjectives. The word *white* names the color form of WHITE and the word *hard* the form of HARD. But neither WHITE nor HARD denotes the property of any specific thing. WHITE or HARD is just that which makes a thing white or hard, grasped only by the mind. They are themselves atomic conceptual meanings that contain no further analyzable information. Gongsun has not talked about verbs, but along his line of thought we believe he would agree that the meaning of a verb is also a conceptual entity of what the mind grasps about an action, a state of affairs, etc. For instance, verbs like *kill*, *is ready*, etc., would name the atomic conceptual forms of KILL, IS READY, etc. There may be different ways of killing with or without tools in different situations, but none of these kinds of information is part of the conceptual meaning of KILL. The same is true of IS READY. Information about who is ready to do what, or for what, contributes no meaning to the conceptual form of IS READY, which is just what the mind grasps of the state of readiness.

To sum up, Gongsun has proposed three points concerning word meaning. 1) A word is a right name for an actuality only if its meaning is the true knowledge about the actuality, extracted from the perceptual experience of it. 2) The true knowledge is a conceptual entity in the mind and this is true not only of nouns, but also of adjectives. 3) The conceptual entity as the meaning of a word is self-complete and simple, with no other meanings or associations as its content. The third point can be rephrased this way: the meaning of a word is an atomic conceptual form. Let's name such a form "C-Form".²

However, there is a serious mistake in Gongsun's theory: the confusion of knowledge about an actuality and the C-Form paired with the word that is applied to the actuality. In other words, his theory regards C-Form and concept as equals, which renders his theory vulnerable. First, if C-Form equals concept, the true knowledge of an actuality, then the meaning of a word cannot be atomic at all. After all, the concept of DAUGHTER postulates the concept of MOTHER, and if MOTHER is a semantic feature of the meaning of the word *daughter*, we fall into the trap of holism because MOTHER would have to be related to quite a lot of other meanings, conceptual or propositional in a web of belief. Second, with concept being equal to C-Form, one simply cannot explain many meaning facts, such as entailment, synonymy, etc., since the C-Form has to be simple with no other meaning content. For instance, why is *bachelor* synonymous with *unmarried man*? One cannot explain why "*A horse is an animal*" is true but "*A horse is a fruit*" is false, because there is no way to categorize concepts, still less the metaphorical expressions, since there is no semantic feature that provides the ground between the tenor and the vehicle. What is it that makes the sentence "*Tom is a gorilla*" comprehensible? Third, it is bound to overburden the internal lexicon, because it cannot explain the compound expressions that abound in any language. Gongsun's WHITE-HORSE as a unique C-Form offers no way-out, for that makes the internal lexicon astronomical in size, overloaded with redundancies, thus violating the principle of economy.

2. We named Gongsun's form as "sense-form" (Liu and Pan 2018), but that term might be ambiguous and so we decide to give it up.

So, if we tend to accept the C-Form as the meaning that a word is paired with, or what a word denotes, in the internal lexicon, we must reject his equating concept with C-Form. We hold that the true knowledge that the mind grasps of an actuality out there constitutes the content of the concept of that actuality, but the concept, with all its contents including what Borg refers to as additional information, is part of the system of general cognition and not of the internal lexicon. Next, let's see what our proposal is.

4. C-Form and its relation with conceptual meaning

The C-Form in our theory is the form of the concept it copies from. Elsewhere we called it a "concept fragment",³ regarding it as the part of a concept that sets it apart from the other concepts. It is true that so far we know little about what a concept is, but philosophers and scientists assume that a concept is a mental entity, which is an operational definition to make the discussions about it possible. If we regard a concept as an entity, then logically it has a form and contents. Of course, this does not mean that a concept literally has a form, but when we talk about a specific concept or judge two concepts as being different, our conception of a concept must have its ITNESS. The ITNESS of a concept separates it from the other concepts, even if the ITNESS is content-free, i.e., carries no further information about the concept. This ITNESS proposal of ours may find support in Prinz's idea, according to which concepts are proxytypes that represent a category (Prinz, 2002: 149). The interesting point of his idea to our theory is that his proxytypes are "bound shape representations" and his idea that tokening a proxytype in thinking is a simulation of the manipulation of real objects (ibid.: 150). If this is the case, proxytypes are clearly individuated mental entities. In other words, a concept, acting as a proxy in thinking process, is a mental object with its ITNESS which identifies the concept as itself.

The C-Form that we propose is not analogous to a filename in a computer, by clicking which the entire file can be loaded into memory, because a filename may have nothing to do with the content. C-Form is the very ITNESS of a concept. Nor is our C-Form a mere label of a concept. A label can be arbitrary, but C-Form is not arbitrary at all, being the identifying information of a concept. In fact, it is C-Form that is to be labeled by word (sound pattern or written shape); i.e., it is the pairing of a word with a C-Form that is arbitrary. It is reasonable to suppose that C-Form is the identifying information of a concept. This is because one may have a mere C-Form with no other information in the mind. H. Putnam (1999) admits that he cannot tell an elm from a beech, but he is sure he means ELM by *elm* and BEECH by *beech*. He uses this to illustrate his semantic externalism, but this example of his shows that he has the concept of ELM which he knows differs from that of BEECH, but these two concepts in his mind are practically content-free, i.e., they are just C-Forms of ELM and BEECH. Similarly, the authors of this paper have the C-Form of QUANTUM only (both having shied away from physics), knowing virtually nothing about quantum other than that it is different from, say force, magnetism, and so on. The C-Form we propose resembles more a young child's or an animal's concept WATER than Homer's concept WATER, both of which are employed by Fodor (1998: 156) to argue for his information atomism, to whom there is no difference since they all have the concepts "locked to water via its familiar phenomenological properties". But to us, there is a big difference. For Homer, his concept WATER might have been associated with additional properties

3. That paper is in Chinese, but space does not allow us to reiterate the ideas. Interested readers can refer to Liu & Pan (2018).

such as IS WET, QUENCHES THIRST and FIRE, FLOWS ALWAYS DOWNWARD and so on, which are parts of the informational content of his concept WATER, though such information is not what Homer conveys by *water* when he uses the word. Similarly, a young child may just know WATER can be applied to water in the sense that she is able to lock word *water* to water, but her concept WATER may well lack all the other associative information that Homer's concept WATER has, because she may simply not have any idea what WET, THIRST, FIRE or FLOWS DOWNWARD, etc., are. In this sense, the young child has only a C-Form WATER; or rather, a child's concept WATER is much the same as Homer's C-Form WATER. As to animal's concept WATER, we might guess it as similar to that of a child's, but there are key differences: 1) a child's C-Form WATER can later develop into a complex and structured concept with more information added in, i.e. it can be engineered, but there is so far no evidence that this is the case with animal's WATER; 2) a child can acquire a piece of additional information by learning, i.e. by being told that such and such is true of water, but so far no animal is known to be able to do the same. These two differences are important because it is the fact of word paired with C-Form that helps fixing the C-Form of a concept while leaving the semantic content of the concept modifiable.

Our idea is, in a nutshell, that given that concepts exist as mental entities, a C-Form is part of a concept, the part without which the concept cannot be. For instance, +ANIMAL, +RACE FAST, +HERBIVOROUS, etc., are the semantic features, or additional information, of concept HORSE, but none of these features is what makes concept HORSE be. Even +EQUINE does not necessarily make HORSE be, because donkeys, zebras, etc., are all equine. The only thing that makes HORSE an individual and independent concept is C-Form HORSE, a pure conceptual meaning with which all the other relevant semantic features, or additional information, can be associated. Conversely, a C-Form, copied to pair with a word (sound, written pattern), confirms the identity of the concept that has it, no matter how complex or simple its other semantic information is or how the content of it may change.

According to our theory, that different people have the same concept in their mind means only that they have the same C-Form of a concept, and they may well differ, sometimes radically, in terms of the content of the concept. When a child's concept WATER differs from a chemist's concept WATER which in turn may differ from a philosopher's concept WATER, it is the content and not the C-Form of the concept that differs. This is why conceptual engineering can and does happen: a concept may change in its content but its C-Form remains the same. Conceptual engineering is not a switch of topic, because the C-Form stays even though the content may have been totally replaced. Concept ATOM in physics is still ATOM, even though being indivisible is no longer an essential definitional element of the concept. Under (or within, or behind) the C-Form WOMAN, the contents are no longer just FEMALE, ADULT, HUMAN BEING, but has been tremendously enriched, or in a sense one can even say substituted, by other features, such as socio-political or socio-psychological attributes: status, gender awareness, sense of helplessness and so on (Cappelen, 2018: 13–14). However, the C-Form is still WOMAN, applicable to the same references and any discussion of WOMAN is still on the topic of women and not men. If conceptual engineering is an operation on the world (ibid.: 46), what it engineers is the content of concepts about the world and not the C-Form of concepts.

Our view resembles Fodor's informational atomism, but there is a difference. Fodor seems to be equating conceptual content with conceptual form. Of course, Fodor has not talked about a

concept having a form literally, but as a word-like mental entity, a mentalese word, his concept is individuated, just like a word in a language, and for this reason a concept must have a form. But this form contains nothing other than the atomic information that is represented of an actuality. Thus, the content and the form of a concept are the same thing, which constitutes the meaning of a word. We believe this is the major problem Fodor's informational atomism has. It cannot explain semantic categorization. Why are DOG and CAT in the same category but DOG and PENCIL in different categories? Nor can it explain concept acquisition. It does not help to just say concepts are innate, because quite a lot of concepts that an individual may have are learned, most often by definition. One may never have seen a kangaroo, but certainly can form the concept KANGAROO by being told that it is an Australian animal that hops and carries baby in the mother's belly-bag. Essential or not is not the concern, but the person now has the concept with the C-Form KANGAROO.

It is this C-Form that is copied to be the meaning of a word. A concept as a mental entity is structured with its multidimensional and complex informational contents and so cannot serve as a word meaning which has to be simple and atomic, in order that the internal lexicon can be economically a list of "mere word-denotation pair" (Borg, 2012: 193). But C-Form is the indispensable part of a concept, since it is C-Form that sets a concept apart from other concepts, while none of the other features of the content of a concept can do it. If a dog is an animal, a cat is an animal, too; or if a dog is domesticated, a horse is also domesticated. None of these semantic features (ANIMAL, DOMESTICATION) separates concept DOG from other concepts, CAT, HORSE, etc.

Our C-Form theory adopts his semantic atomism, but only in describing word meaning. If the internal lexicon contains only a list of word-denotation pairs, it is not responsible for any complex conceptual operations, such as definition, categorization and so on. However, in order for words to activate corresponding conceptual operations, or the combination of words to express certain proposition, the words in the internal lexicon cannot be just a repertoire of roots without meaning. Instead, each word must have a meaning which is derived from a corresponding concept. Further, since concepts are complex and structured but word meaning is simple and unstructured, only the concept identifying meaning can be the meaning of a word, which has to be indispensable for the concept to be an individuated mental entity. We name such a meaning "C-Form". As mentioned before, we appreciate Prinz's idea of proxytype individuation, and our C-Form can be seen as the form of an individuated proxytype. But while Prinz only grants the "proxytype individuation" to nouns (his examples of gnu-shaped, person-shaped, rifle-shaped representations), he does not think there are fat-shaped or hunt-shaped representations. Instead, he thinks FAT proxytype or HUNT proxytype are contained in simulation and meld with other proxytypes (Prinz, 2002: 150–151). Different from him, we think there are C-Forms that are copied to be the meanings of adjectives and verbs from concepts of properties or of actions and so on. It's true that the concept of a property or an action may not literally have a "shape" in Prinz' sense, but if such a concept should also be involved in thinking, or in Prinz's words "be contained in simulation", there is no reason why such a concept has to be meld with other concepts, because in so doing Prinz has already held concepts of property, relation and action as being individual proxytypes different from those of entities. Since Prinz admits that FAT or HUNT as concepts can be tokened, then whether they can be individuated by shape boundaries or not is not important. That one cannot perceive any boundary shape of what verbs or adjectives express (HUNT, FAT, etc.) does not mean that as mental entities they cannot be

attributed with some form of conceptual meaning that identifies them and sets them apart from the other concepts.

As to the match of a C-Form with a word form (sound or written), we agree with Chen (2014) that it is only a matter of social convention. Saussure is still right in regarding a word as a sign, the combination of signifier and signified, except that the signified is not a concept but a copy of the indispensable identifying form of the concept, the C-Form. In so doing, we can maintain Fodor's informational atomism but fare better in avoiding the problems that his theory faces, such as publicity, categorization, and so on. Our theory can explain why two individuals with possibly very different conceptual knowledge of a concept can communicate with each other, and for the same reason, why acquiring a concept by definition is possible. The key point is, what varies from one individual to another is the content of a concept, but what does not vary is the C-Form that a language community binds up with a word, which provides the members with the start point of language communication. Well, if everyone has the same web of beliefs, or the same informational content for each concept, what's the use of language? Language communication is necessary exactly because people differ in their conceptual knowledge or web of beliefs, but if language communication should be successful, it must make sure that people talk about the same thing, however differently they know about the thing. It is C-Form that guarantees language publicity and makes concept acquisition possible.

If our program as outlined above holds ground, which we believe it does, meaning holism and semantic minimalism are not antagonistic at all, the former being a meaning theory of thought and the latter of language expressions, though there is a close relationship between what these two theories focus on. Given this understanding, we adhere to semantic minimalism, believing meanwhile that meaning holism helps in semantics inquiry. Insistence on that words and sentences have a minimal semantic content entails neither the exclusion of further elaboration on the content, nor the inquiry into the content, because the meaning of language expressions is one thing but the reflection on the meaning is another. Surely, "semantics is essentially a theory of thought" (Fodor, 2008: 198), but there is no reason to keep semantics of thought off the reflection on language meaning. On the one hand, ordinary language users reflect on word or sentence meanings, which is why there are many phenomena, such as inference, intention-reading, ambiguity, disagreement, etc., which can be occasional, spontaneous, or idiosyncratic, but are all cognitive reasoning based on the users' web of belief. On the other, semantics as a scientific theory of meaning seeks to find out the conventions or general rules that are hidden in and constrain language use, in order to achieve a universally accepted understanding of the meaning expressed by language. It is in this sense that semantics is a science of language meaning, which in no way rules out the existence of the minimal semantic content of words and sentences composed of words. We also hold that it is in this sense that Lepore and Stone (2015) are right in pointing out that what are commonly regarded as "pragmatic" aspects of meaning (inference, intention-reading, humor, etc.) are ruled by conventions linguistically packaged. Semantics as the inquiry into language meaning can be atomistic, operating with lexical structural properties and syntactic principles, but it can also be part of thought reflection (de Almeida, 2018: 225).

5. C-Form and truth-evaluable proposition

Our argument on the topic of C-Form and truth-evaluable proposition is inspired by an essay by Qian (2015) in which he says that the conceptual meaning of a noun as the subject in a sentence is empty and must be given by the predicate; if one predicate is not enough, a sufficient but unspecified number of predicates would do the job. He takes *horse* as the example to argue that *horse* does not give the concept of HORSE. The conceptual content of HORSE is provided incrementally by predicates in sentences with *horse* as the subject, such as *a horse hisses*; *a horse is herbivorous*; *a horse is odd-toed*; *a horse races fast*; *a horse can carry heavy load*; and so on. Two questions we can ask about Qian's argument. 1) If the noun *horse* does not carry any information of concept HORSE, how can we determine what predicates can be chosen to match the subject to form a reasonably meaningful sentence? On the one hand, it is reasonable to take *odd-toed*, *animal*, etc., to be the predicate of *horse*, but it is absurd to select *turbo-charged* or *tell lies* to predicate of *horse*, since what such sentences express is semantically invalid. On the other, of the semantically valid sentences, some are said to be true while others false: predicating of *horse* with *herbivorous* is true, but with *carnivorous* is false. 2) The predicates themselves consist of verbs or adjectives or nouns that express corresponding concepts, or individuated proxytypes, of property, action, state, etc. To regard them as concepts and probe into their conceptual meanings, one might enter possibly an infinite regression of interpretation and end up accepting either holism for explaining word meaning or contextualism which claims that the meaning of words and sentences is context-sensitive and therefore can only be determined relative to specific contexts. For instance, *herbivorous* means grass-eating, which implies additional information of grass as plants, which implies in turn further assumptive information of life science and so on and so forth. Similarly, RACE is a behavior that differs from HISS, which represents a different behavioral event and all the related features of the behavior, such as its definition and thematic structure, but these can only be specified in a concrete context. Also, FAST means high in speed, but this meaning is uncertain since the criterion of speed and the scope of comparison are all missing.

However, our C-Form theory deals with the situation quite readily. First, it is true that the word *horse* cannot give the entire conceptual content of HORSE, but *horse* must have a meaning that enables it to allow some predicates to combine with it so as to form a semantically valid and true (or false) statement. That meaning is C-Form of HORSE; let's call it F-HORSE. F-HORSE is derived from concept HORSE, a copy of the conceptual form of HORSE. For this reason, F-HORSE is semantically connected with concept HORSE as a reproduction of its C-Form. We think that the function of F-HORSE as the meaning of the word *horse* is to provide semantic validity to the meaning of the sentence in which *horse* occurs as the subject and enable the sentence meaning, if valid, to be truth-evaluable. To be semantically valid simply means that the semantic content of the predicate that predicates of the subject is a piece of additional information of the concept whose C-Form is expressed by the subject. For example, if HISS is what a speaker knows about HORSE, she is most likely to say "*Horses hiss*", which to her is semantically valid and true. The speaker is highly unlikely to produce the sentence "*A horse is four-cylindereed*", which to her would be invalid semantically and so it makes no sense to judge its truth value, unless she is joking or writing for other purposes, say, telling a fairy-tale. On the other hand, the hearer would agree that "*Horses hiss*" is true if it matches what she knows about HORSE, but would be puzzled by "*A horse is four-cylindereed*" since to her knowledge, the meaning of CYLINDER cannot be applied to HORSE. This point is nothing but a common-sense. However, this point is worthwhile highlighting, because it is what lies behind concept learning by definition and the nature of a sentence meaning being truth-

evaluable. Clearly, if one knows a horse hisses without also knowing that a horse is herbivorous, the sentence “*A horse is herbivorous*” provides her with a new addition of information into her concept content, but her F-HORSE remains the same. Her concept HORSE becomes thus richer than before and she is ready to acknowledge that a horse is grass-eating is true, which she could not before. A semantically invalid statement, however, does not have this function, because no one can confirm or falsify it in any way, resulting in no new information acquired. This is the reason why we mention semantic validity in addition to truth and falsity. As to the nature of a sentence meaning being truth-evaluable, we shall have more to say soon. Here, let’s just say that a semantically valid sentence expresses a truth-evaluable proposition. “*A horse is a grass-eating animal*” and “*A horse is carnivorous*” are semantically valid and so truth-evaluable, the former being true and the latter false. To generalize, when a nominal item occurs in a sentence as the subject, it functions to form with a predicate a semantically valid sentence that expresses a minimal semantic content, or what Borg (2012: 39) calls “minimal proposition”. We shall soon say what we mean by such a minimal proposition being truth-evaluable, but before that let us answer the second question we raise.

The predicate itself consists of verbs or adjectives which are also word-meaning pairs in the internal lexicon. According to our theory, the meaning of verbs and adjectives is also the C-Form, a copy of the conceptual forms of the corresponding concepts of action or property, etc. As we argued a moment ago, Prinz appears to be hesitating as to whether there are action proxytypes or property proxytypes, but we make clear that there are. Or else, on what basis can we say an action is that action or a property is that property? KILL refers to the action of killing, regardless of instrument, manner, or other information or knowledge about killing. The important thing is that KILL as a concept differs from KISS or KEEP as concepts. They have different conceptual forms. The same is true with adjectives like RED or READY. The concept READY has the content of an agent being ready for something or to do something, which is syntax-driven informational content (Borg, 2012: 210-211), but its conceptual form is just readiness that sets READY apart from other concepts like RED. The predicate in the sentence *The students are ready* means not that the students are RED, nor that they are TALL, but that they are READY. As to what they are ready for, or what they are ready to do, these are not given by the predicate C-Form READY. Call it “F-READY”. *The students are ready* is sufficiently meaningful, so long as for the individual, her word meaning, i.e. the F-READY is the copy of the form of her concept READY with its meaning structure of READY (X, Y). Whether X is ready for an exam or is ready to eat out contribute nothing to the meaning of the sentence. In other words, the meaning of a predicate combined with that of a subject forms a sentence whose meaning is a truth-evaluable proposition. Meanwhile, just like nouns, the C-Form of either an adjective or a verb remains resistant to change, while the concept content can change. KILL with stone and rod in ancient time differs from KILL with a gun in modern time, but KILL remains the same in its conceptual form. It is this conceptual form that gives the minimal semantic content of the predicate in which an adjective or a verb occurs. The minimal meaning of the predicate and that of the subject form the sentence that expresses a truth-evaluable proposition.

We must hasten to make a point here. Certainly, facts provide the truth-condition of a proposition, but “*facts*” does not necessarily denote empirical objects or events in the immediate context of language use. Let’s think about Tarski arguing for his convention-T (Tarski, 1999), where a typical example is *The sentence “Snow is white” is true if, and only if, snow is white*. If someone says “*Snow is white*” in a situation where it is snowing and the whiteness of the snow can be seen,

then obviously it is the empirical fact that the snow is white is the condition that makes true the meaning of the sentence, or is the truth-maker of the proposition. However, when Tarski uses this as an example, he is most likely not in a snowing context; instead he is most likely at his desk. At this moment, what makes him to be sure that “*Snow is white is true*” is not any perceivable fact in the environment, but a piece of his knowledge about snow. This point is important as we see it. As authors of this paper, we know that water is H₂O and so we may say to someone: “*water is H₂O*”, or when we hear the sentence, we say that is true. This is not because we always carry devices with us so that we can always reproduce the experiment that proves that water is H₂O, but because we have this knowledge item as part of our concept WATER. In fact, we may even know nothing about how to decompose water molecules and any principles or theorems of chemistry and physics involved thereof, but we know we can count on chemists’ expertise if necessary, and so are convinced that WATER IS H₂O expresses a truth. There are cases where someone’s concept is just a C-Form without any other additional information, but in such cases the identifying conceptual meaning would still be there in the person’s mind with its content yet to be filled up. As we talked a moment ago about a young child’s early concept WATER, the child may not even have the conceptual information that water quenches fire or thirst, for she does not yet have an idea what thirst is, though when she is thirsty, she instinctively drinks water, and she is cautiously kept off fire. But undoubtedly, she has C-Form WATER, since she is aware of to what the word *water* is applied. Not only is this the case with young child, what we have mentioned previously are also cases of similar nature, such as our concept QUANTUM or Putnam’s concepts ELM and BEECH.

Now let’s come back to the truth-evaluable topic. A proposition as the meaning expressed by a sentence is truth-evaluable, or it can be judged true or false, because the evaluation is essentially dependent on the informational contents, i.e. definitional or other descriptive knowledge items, of the concept, which an individual has in mind, whose conceptual form is what the C-Form of the subject word (usually a nominal) is a copy of. The proposition of a sentence is likely to be judged valid and true, if what the predicate expresses matches an item of information or knowledge in the concept content a person possesses. Take concept HORSE for example. When HORSE contains the informational item of ANIMAL, the person judges the sentence “*Horses are animals*” to be true. But when the content of a concept lacks the corresponding information item, the case is more complex. In some cases, the person tends to judge a sentence as invalid and therefore false, if what the predicate expresses deviates far away from her knowledge of possible meanings of the concept; i.e., she would judge the proposition expressed by the sentence to be false. One is most likely to reject A HORSE IS FOUR-WHEELED as nonsensical and therefore false. However, if the predicate meaning does not deviates far, a person may judge the proposition expressed by the sentence as false, when the predicate meaning is in conflict, or incompatible, with the information she possesses as part of the content of her concept of the subject nominal. One is most likely to judge the proposition A HORSE IS A WILD ANIMAL as false, because the predicate may not be compatible with what one know so far about the subject HORSE. And if the meaning of a predicate presents something that a person is unfamiliar with, given her knowledge of any concepts in her mind, she would find it hard to judge. She may just ask about what the predicate means. This is important because it is in such a case that new item of information may be added into her existing content of a concept. A HORSE IS HERBIVOROUS. What does *herbivorous* mean? Well, it means GRASS-EATING for short. All right, now she knows that horses eat grass, which becomes a new item of information added into her concept HORSE. This is not just a speculation. It is an empirical fact

that all of us do not have the same contents of the concept. A zoologist specialized in horse study has her concept HORSE with its content enriched by intellectual information, such as its biological definition, anatomic category and so on, but a horse-racing gambler's concept HORSE probably lacks any of such knowledge information items. And it is highly likely that a horse owner knows that a horse is grass-eating, but hesitates when he hears the sentence *A horse is herbivorous*, unless he knows that *herbivorous* is roughly synonymous with *grass-eating*.

The moral is, a speaker predicates of a subject (e.g. *horse*) by using the words with C-Forms that her concept contents already possess, unless she is joking or talking nonsense. The sentence thus formed expresses a proposition which is truth-evaluable in the sense that it is always true to the speaker at the time she utters the sentence, but can be either true or false to the hearer who has her own information for making her truth evaluation about what she hears. In other words, what a sentence expresses is always a truth-evaluable proposition, regardless of the contexts of its use.

However, we are not proposing that the truth condition of a proposition has nothing to do with the external facts of the world. After all, the concepts that we form, together with their contents, come ultimately from our empirical experiences, i.e. our interactions with the world out there. As Prinz says, "Nothing is in the intellect that is not first in the senses. ... All (human) concepts are copies or combinations of copies of perceptual representations" (Prinz, 2002: 106-108). The issue of concept is not our topic here, and we accept Prinz's idea about it to keep our theory consistent with the truth condition theory of meaning. What we propose here is that the minimal semantic content of a sentence with its subject, a word paired with its C-Form, matched by its predicate, also words paired with their C-Forms, is a proposition that is truth-evaluable by conceptual informational facts which are ultimately derived from empirical facts. Most likely, Tarski knows from his experiences with snow that it is white and SNOW IS WHITE is represented in his mind. When he writes "The sentence '*Snow is white*' is true if, and only if, *snow is white*", he is well-justified to take his belief SNOW IS WHITE as representing a true fact of snow, even though at the moment he is not in the context in which he sees any snow. In most cases, this logic expression of his is used to explain or comment on his convention-T (in philosophy class, for instance) and all users would say that the "*snow is white*" on the right side of the bi-conditional notation is the metalanguage translation of the sentence "*Snow is white*", asserting it as the empirical fact that makes the sentence true. But when the users say so, they are not in the context in which snow is there and white. Most probably, they even know for sure that snow is actually colorless, the whiteness that humans perceive is simple a reflection of the sunlight of all visible wavelengths.

So, it is the belief, the knowledge item, that enables one to judge the truth value of the semantic content of, or the proposition expressed by, a sentence, even though the belief is ultimately a representation of certain empirical fact experienced, or of what is told by others about such an empirical fact. With this understanding, we can say with confidence that the context, with the specific facts therein, is not necessary for the minimal semantic content of a sentence to be truth-evaluable. In other words, the semantic content of sentence does not need to appeal to pragmatics whose job is but the fixing and identification of specific references (Borg, 2012: 134). As Lepore and Stone (2015: 94) say, "Pragmatics merely disambiguates." But as we see it, even the disambiguation must be semantically guided, i.e. one has to know first whether or not the C-Forms that compose the sentence meaning are correctly applicable to the external objects or events that are taken to be the evidence for disambiguation.

6. Coda: A by-product of our analysis

Our argument looks a bit too tedious because to us it is important. Thoughts, concepts, propositions, etc., are mental possessions or processes in individual mind, but language meaning has to be public. This paper sets out to speculate on what the minimal semantic content of a word is, intending to clarify some ideas which we have already published but find them vulnerable. The authors are basically linguists who feel uncomfortable with contextualism, which, to us, makes semantics unnecessary, or worse, impossible, for if the meanings of words and sentences are context-sensitive and for this reason relativistic, it makes no sense to attempt to construct a universal meaning theory of language. The reason is simple: if contextualism were right, language meaning would be ephemeral and public-exclusive; i.e., only the participants on the spot of speech at a given time in a specific situation could understand the meaning which no one else could and would cease to be meaningful once the situation and the time were different for the same participants. For this reason, the consequence of contextualism is theoretically disastrous. This is why we write to discuss the minimal semantic content of word, as we deem this a topic insufficiently explored with no satisfactorily convincing ideas, when greater efforts on the part of minimalists are exercised on sentences and their propositional meaning. Our start-point is the possible reconciliation of minimalism with holism.

We believe our paper has achieved its purpose. If our model of C-Form copy is right, we can not only shrug off the problems that OLS faces, but also answer questions such as concept acquisition and word meaning learning. Indeed, in our proposal, what we learn about (traditionally conceived as) word meaning through definition is not the meaning of word, but the content of the concept that word meaning activates. What is more, we can also support the proposal of Lepore and Stone that the commonly assumed pragmatic processes are pre-packaged linguistically. Further, while they believe that only the meaning of metaphors and other non-literal meanings are not conventional but is left free for imagination, we can say that even the metaphorical meaning can be semantically analyzed, if we distinguish the cognitive content of concept from the C-Form meaning of word, the former being epistemological but the latter linguistic.

With the discussion going on, we have turned up with a by-product: our argument for the minimal semantic content of a sentence as truth-evaluable proposition. We believe this by-product is of reference value to the theory of semantic minimalism, according to which the minimal semantic content of a sentence is a truth-evaluable proposition. Our discussion backs the minimalist theory: the minimal meanings of words arranged according grammar rules produce the minimal meaning of a sentence. But it is here that minimalist theory is attacked vehemently, especially by contextualism that links sentence meaning to a fact in an immediate context. Contextualism might appear to be reasonable, if truth condition consists only of empirical facts immediately perceivable. If contextualism were right, it would be indeed hard, if not impossible, to determine the reference (entity, property, relation and so on) of any words that compose a sentence that supposedly expresses a trans-contextual but truth-evaluable semantic content, and sentences could only deliver a fragment of meaning which should be expanded or narrowed in a concrete context of speech (Borg, 2012: 150). This caused a lot of trouble to minimalism, but the defense on the part of the minimalists is not really powerful (Ye, 2017). The problem lies not only with what a proposition is, but also with what constitutes the truth condition. Ye (2017: 62) thinks that the minimalists had better be satisfied

with Tarskian disquotational interpretation of truth condition in regard to the possibility of concept, but he has explained neither what “possibility of concept” means, nor why disquotational truth-condition is feasible. Our theory does it. If we reconcile epistemological holism with semantic minimalism, as we have been doing, we can find a way-out. A proposition is the meaning that a sentence expresses, with contributions from the C-Form meanings of its component words. Such a proposition is truth-evaluable and its truth condition is not contributed pragmatically, i.e., by external facts in the immediate environment of language use, but is contributed semantically, i.e., by conceptual items and their information about external facts. It is so because a C-Form of a concept that is copied to pair with a word is a natural bound with the concept which is semantically rich and structured, serving for this reason as the interface between word meaning and concept meaning. In this way, we insist on semantic minimalism without worrying about the enormous complexity of conceptual meaning, such as holism reveals. Wittgenstein is simply wrong: the meaning of a word is not its use in a language. The word *slab* means SLAB whatever language games an individual is playing (in English), so long as the English-speaking public links by convention C-Form SLAB with the word shaped *slab*. Make-shift change of the concept SLAB among a specific few in specific contexts (such as spy group agrees to use *slab* to mean some secret) is possible, but this cannot engineer the concept of SLAB unless it is accepted by the general public and becomes a new convention of word-C-Form pair. Contextualism can thus be rejected; whatever the context is, the literal representation lingers (de Almeida, 2018: 225). Our trick is simple: based on a distinction of the general meaning of thought and the semantic content of language expressions, we let OLS’s additional information be part of general knowledge or cognition, leaving the internal lexicon to be a list of word-C-Form pairs, so that semantics is a reflection on word meaning (or in a larger sense, language meaning) instead of being itself part of the content of word meaning (or of language expressions).

Author contributions

LL conceptualized the research and drafted the paper. QH provided constructive suggestions for the study and revised the paper.

Conflict of interest

No conflict of interest was reported by the authors.

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ORIGINAL ARTICLE

The experimental turn in philosophy of language

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Abstract: With the rise of experimental philosophy in the twenty-first century, the past two decades have witnessed the experimental turn in the field of philosophy of language. We delineate in this paper the experimental turn in philosophy of language before distinguishing armchair theorizing from empirical testing and highlighting the complementarity between the two approaches, and then carry out an analysis of the experimental tools and methods available for philosophical experiments with examples by classifying them into three major types, viz., the method of survey, the method of big data, and the method of cognitive neuroscience.

Keywords: experimental philosophy; philosophy of language; experimental method

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1. Introduction

The fundamental research method of philosophers of language is linguistic or conceptual analysis, that is, to carry out an in-depth analysis and elucidation of concepts through linguistic and logical analysis. From the perspective of philosophers of language, quite a number of philosophical puzzles can be ascribed to the obscurity of concepts, and hence they advocate conceptual analysis by means of thought experiments and by bringing up counter-examples. Dennett (1980) coined the term “intuition pump” to vividly describe what a thought experiment is and how it works—to pump (or elicit) one’s intuition regarding a philosophical proposition or problem with hypothetical cases. However, there is no doubt that the reliability of intuition itself is dubious. As philosophers make a claim by using “people would say (in this situation)”, “intuitively”, or “ordinarily”, they argue by appealing to their (own) intuitions. But how can we make sure that a theory or a thesis is plausible and well-founded if only a dozen of philosophers claim such and such out of intuition? With its initial aim to empirically test the reliability and generality of intuition, experimental philosophy (often abbreviated as X-Phi) has developed since the turn of the twenty-first century and is gaining momentum. Experimental philosophers adopt the experimental methods typically used in social psychology and cognitive science to investigate questions of philosophical interest and make an attempt to justify or falsify the theoretical claims and hypotheses made by traditional philosophers

with empirical evidence.

Since its emergence at the beginning of this century with the groundbreaking work of Weinberg et al. (2001), Nichols et al. (2003) and Machery et al. (2004), the approach of experimental philosophy has been adopted in many fields of philosophy, including not only philosophy of language, but also epistemology, ethics, philosophy of mind, philosophy of economics, and others. It also needs to be noted that this new philosophical movement has greatly contributed to the rethinking and reexamination of metaphilosophy and philosophical methodology. Many traditional philosophers might not readily accept the experimental approach, but the influential work and achievements of experimental philosophers should never be ignored. With the rapid development of experimental philosophy, experimental semantics and pragmatics, experimental philosophy of language is also gaining in popularity in the past two decades, with its main topics including (empirical tests of) the reference of proper names and natural kind terms, Kripke's Gödel case, the context-sensitivity of "knows" (knowledge), transparent ascriptions, etc. The unprecedented important role that experimentation plays in the study of philosophy of language and the emergence of an abundance of experimental research in philosophy of language both indicate that philosophy of language is taking an experimental turn. This, however, never means that the experimental approach will take place of conceptual and linguistic analysis, but simply that experimental philosophy has provided philosophers with an indispensable and useful toolkit, thus ensuring a higher validity and reliability of philosophical studies if they make good use of the experimental methods. In this paper we will first explain the distinction between armchair theorizing and empirical testing and their complementarity before illustrating three kinds of experimental tools available to philosophers, viz., the method of survey, the method of big data, and the method of cognitive neuroscience.

2. Armchair theorizing vs. empirical testing

Ever since the age of Plato, the appeal to intuition has been an essential, if not the only, source of evidence in doing philosophy. Philosophers generally see consistency/inconsistency with intuition as the default standard in making judgments about the reliability and acceptability of a theory or an argument. For philosophers of language, the major work they are engaged in over the years is conceptual analysis, and a common way to do conceptual analysis is to devise real or imagined cases (thought experiments) and to make intuitive judgments about the truth value or acceptability of some proposition of philosophical interest in the cases, on the basis of which arguments are developed, justified, or falsified. People may wonder where these intuitive judgments come from? Generally speaking, they are from themselves. As the traditional or typical way analytic philosophers theorize is through linguistic and logical analysis (which we can carry out all in an armchair with no need to go out to conduct experiments), traditional analytic philosophy was given a "nickname"—"Armchair Philosophy" ("AP" hereafter), contrasted with experimental philosophy. Experimental philosophers cast doubt on the reliability of intuition on which armchair philosophers rely in theorizing by the "Argument from Variation", which goes like this:

- 1) Experimental studies have shown that intuitions vary as a function of inappropriate factors like cultural background, emotional state, and so forth.
- 2) The above variation shows intuition to be an unreliable guide to philosophical truth.

3) Philosophers must abandon their reliance on intuition-based methods of theorizing. (Nado, 2016: 1–2)

It should be noted, however, that the Argument from Variation stands only if the traditional philosophers' method of philosophizing is really intuition-based. However, some analytic philosophers like Cappelen and Ichikawa have argued against the centrality of intuition by claiming that it is not intuition, but facts about philosophical phenomena which constitute the basis of evidence in philosophy (see Cappelen, 2012; Deutsch, 2009, 2010; Ichikawa and Jarvis, 2013; Ichikawa, 2014). But the real fact could be that facts and arguments are both intuition-related. Hence both intuitions and facts are supposed to come under empirical scrutiny.

As a matter of fact, conceptual analysis and empirical testing complement each other and should be combined in use in philosophical studies. Conceptual analysis and argumentation are never the privilege of philosophers. Likewise, experimentation is not the privilege of scientists, either. As Kornblith claims, "When philosophical theories in epistemology are constructed from the armchair, they run a serious risk of being divorced from the very phenomena they seek to illuminate. The only way to assure that we do not build elaborate castles in the air, unconnected to the real world phenomena which motivate our work in the first place, is to base our work on the best available experimental understanding of those phenomena." (Kornblith, 2014: 207) Arguably the rise of experimental philosophy symbolizes the return of the tradition of the continuity of philosophy and science. We agree with Papineau that philosophy is like science in several ways. First, the claims made by philosophy are synthetic, not analytic. Second, philosophical knowledge is a posteriori, not a priori: the claims established by philosophers depend on the same kind of empirical support as scientific theories. And finally, the central questions of philosophy concern actuality rather than necessity: philosophy is primarily aimed at understanding the actual world studied by science, not some further realm of metaphysical modality. (Papineau, 2014) The continuity of philosophy and science is clearly reflected by the fact that a variety of sub-disciplines with the form of "philosophy of X" have well developed since the twentieth century, such as the philosophy of science, the philosophy of psychology, the philosophy of physics, the philosophy of cognitive science, and the philosophy of information. If philosophy is consistent with science and can benefit from experimentation in a real sense, we would not have any reason to reject the available experimental methods of cognitive science, psychology, and neuroscience.

3. The methodology for experimental philosophy

Experimental philosophers do not have their own methodology, but they have borrowed in their research a wide variety of experimental tools and methods from social psychology and cognitive science. The most commonly adopted method in experimental philosophy has been questionnaire survey, which is used to elicit folk intuitive judgments about questions or propositions in devised cases. Nevertheless, it has been realized that survey is only one of the experimental tools available to philosophers, and there are still many different types of experimental methods available for philosophical investigations, such as corpus analysis, eye-tracking, VR technology, and fMRI. Ever since the beginning of this century, a number of philosophy laboratories have been established at world-renowned universities, such as the Experimental Philosophy Laboratory at the University of California at San Diego, the Experimental Philosophy Laboratory at Yale University and

the University of Arizona, the Experimental Epistemology Laboratory at Indiana University, Experimental Epistemology Research Group at University at Buffalo, the State University of New York, Pittsburgh Empirical Philosophy Lab at the University of Pittsburgh, to name but a few.

We classify the experimental methods applicable to philosophical experiments into three major types, viz., the method of survey, the method of big data, and the method of cognitive neuroscience. The method of survey is typically used to conduct behavioral and psychological experiments. By using the method of big data, we can collect data of real linguistic and conceptual use as empirical evidence for theoretical arguments. By adopting the method of cognitive neuroscience, data of brain activities can be precisely tracked with the aid of sophisticated equipment. Despite the wide range of experimental tools available, experimental philosophers have not broaden their use of the toolkit in their philosophical studies until the past decade or so. We will elaborate on these three types of experimental methods with specific cases of experimental studies of philosophy in the following sections.

3.1. The method of survey

The method of survey in social psychology has been the most commonly used method in experimental philosophy studies. With the aim to test the reliability of philosophers' intuition-based claims, researchers devise imagined cases and let the subjects make intuitive judgments on questions concerning some philosophical concept, usually by using a Likert scale. The survey method has the following characteristics: Firstly, it has a close relation to thought experiments in that many experimental cases adopted in survey studies are classic thought experiments, like the Gettier cases in Starmans and Friedman (2012) and the fake-barn cases in Colaço et al. (2014). Secondly, compared with other kinds of experiments that rely on sophisticated experimental instruments, it is simpler and more convenient to carry out a survey. The main procedures for conducting a survey are to propose a research question, make an assumption, devise cases, design the questionnaire, implement it, collect data, and analyze the results. The most critical and difficult part of an experimental study must be experimental design. Let's take a look at the pioneering work in experimental philosophy by Weinberg et al. (2001).

At the turn of the twenty-first century, Jonathan Weinberg and his colleagues conducted a groundbreaking experimental investigation into the cultural variation in epistemic intuitions. Considering that Nisbett (2001) demonstrates that there are differences in belief forming strategies in different cultural groups, Weinberg then tries to explore the possible differences in epistemic intuitions in different cultural groups. He put forward four hypotheses: 1) Epistemic intuitions vary from culture to culture; 2) Epistemic intuitions vary from one socioeconomic group to another; 3) Epistemic intuitions vary as a function of how many philosophy courses a person has had; 4) Epistemic intuitions depend, in part, on the order in which cases are presented. Three versions of Truetemp cases (the Individualistic Version, the Elders Version, and the Faluki Version) were designed to explore externalist/internalist dimensions of the subjects' intuitions in the surveys. Take a look at the individualistic version.

Individualistic Version: One day Charles is suddenly knocked out by a falling rock, and his brain becomes re-wired so that he is always absolutely right whenever he estimates the temperature where he is. Charles is completely unaware that his brain has been altered in this way. A few weeks later, this brain re-writing leads him to believe that it is 71 degrees in his room. Apart from his estimation,

he has no other reasons to think that it is 71 degrees. In fact, it is at that time 71 degrees in his room. Does Charles really know that it was 71 degrees in the room, or does he only believe it? (Weinberg, Nichols and Stich, 2001)

The subjects in this experiment (undergraduates at Rutgers University, East Asians and Westerners) are required to choose from whether “really knows” or “only believes” (that it is 71 degrees). The results suggest that there exists a highly significant difference between East Asians and Westerners in the individualistic version, and there are no significant differences in the Elders version and the Faluki version. The research findings indicate that in the individualistic version Charles’ reliable mechanism is epistemically external. Therefore, the group who choose “only believes”’s folk epistemology may be internalist; in the elders version, the reliability of epistemological mechanism is social sanction; in the Faluki version, it is shared by everyone in the community. The results of this experiment confirmed their hypothesis that intuition is culture-specific.

Before and while conducting a survey study of philosophy, we should pay particular attention to the following few aspects. First, strict and effective control should be taken of all the possible disturbing variables in the process of experimental design. Second, presentation effects such as the ordering effect (the influence of the order in which the vignettes are presented) and the framing effect (influence of wording in particular) should be avoided. Third, the relationship of theory and experimental cases must be seriously considered and well handled. Though the cases (often called “vignettes” in X-Phi research) are used in a survey to collect data to justify or falsify a thesis or a theory, we should be careful to avoid theory-laden formulation of them in the experimental design. Finally, experimental cases and control cases should be well selected and matched.

It should never be ignored that the method of survey also has some obvious deficiencies. First, the data we obtain from a questionnaire survey is not real language use or authentic use of the concept under investigation, but only participants’ intuitive judgments about a proposition or their intuitive response to a question in devised cases. Second, a relevant important problem is the validity of survey. We would not know (1) whether the participants have really understood the vignettes (though a common practice is to ask a comprehension question to check their reading after the presentation of each vignette) and (2) whether the judgment they give is a true report of what they think. Still another issue is that there are too many disturbing variables in a survey that might prove difficult to be avoided altogether. If the disturbing variables cannot be taken the best possible control of in experimental design, then the validity of a survey will be devaluated and challenged. Fortunately, the above-mentioned deficiencies of questionnaire survey can be offset by the adoption of other experimental methods available.

3.2. The method of big data

As Devitt (2014) argues, philosophers of language should rely more heavily on evidence from actual usage—both sentences from the corpus and those elicited in controlled experiments. Evidence from survey data are evidently participants’ intuitive judgments about questions and propositions rather than actual language use. To collect data of authentic language use, we need to appeal to the method of big data. Even though the big data technology is still in its early stage of development and application, it has provided a useful research approach for social scientists. The concept “Big Data” was first put forward by Fayyad in 1995. The primary function of the big data

method is data mining and its basic objectives are descriptive and predictive. The main techniques include classification, association analysis, cluster analysis and anomaly detection. There are four characteristics of Big Data, namely volume, variety, velocity and value (often abbreviated as “4V”). Compared with the survey method, the adoption of the method of big data enables us to provide huge amounts of data. The method of big data is closely related to computer science. For example, computational simulation experiment and corpus can be applied to empirical studies of philosophy. Devitt suggests the use of corpus both informally and scientifically gathered to study the theory of reference. One way to gather direct evidence is to look at the corpus of usage. (Devitt, 2012) Leonelli (2012) and Pietsch (2013) have discussed the function of big data in philosophy of science, but it should also be realized that big data can be equally well applied to X-Phi studies. Devitt (2012) demonstrated the application of corpus to philosophical study with an example.

The ‘Godel’ vignette contains eight uses of the name ‘Godel’ (and one mention). Now consider the question: Who do these uses refer to? MMNS (short for Machery, Mallon, Nichols, and Stich) are the authors of this vignette and there can be no doubt that these philosophers are fully competent with the name ‘Godel’. And the referent of this name out of the mouths of the fully competent is to the eminent logician who did in fact prove the incompleteness of arithmetic and spent many years at Princeton. So that is whom MMNS’s eight uses of the name in the vignette refer to. But then their use of the name in the following passage disconfirms the description theory: “Now suppose that Godel was not the author of this theorem. A man called ‘Schmidt’, whose body was found in Vienna under mysterious circumstances many years ago, actually did the work in question.” For, if MMNS’s use of ‘Godel’ refers to that eminent logician in virtue of their associating with it the description, ‘the prover of the incompleteness of arithmetic’, this passage is not something that MMNS would be disposed to say. They would not, in one and the same breath, both refer to Godel and suppose away the basis of that reference. Similarly, according to the theory that the reference of ‘bachelor’ is determined partly by its association with ‘unmarried’, competent speakers would not be disposed to say: “Suppose that the bachelors in Iceland are married.” But here the description theory seems to survive because we would not be disposed to say this. (Devitt, 2012: 28)

This example shows how we may use corpora to help investigate a theory of reference. Hacquard and Wellwood (2012) carried out a corpus-based study on epistemic modals in English, with the aim of empirically investigating whether epistemics contribute to the truth conditions of the sentences they appear in. In a sense, the method of big data and the method of survey well complements each other, and the two experimental methods can provide intuition-based claims with important empirical evidence.

3.3. The method of cognitive neuroscience

Cognitive neuroscience aims to uncover the basis of the brain function of the mind and emotional activities. The study of cognitive neuroscience covers such research areas as the study of language, thinking, and intelligence, the relationship of language and the brain, the neural basis of language processing, etc. The experimental methods of cognitive neuroscience are also more and more extensively used in philosophical research, including brain wave, brain imaging, microelectrode, eye movement, ERP, and fMRI. A great merit of the neuroscientific method is that it is able to visualize brain activities. By recoding different material change, we are able to observe the physical images of specific parts of the brain carrying out advanced functional activities from outside the brain,

and study cognition from the way the brain works. Crutch and Warrington (2004) has conducted a neuroscientific experiment on the semantic organization of proper names.

The subject of this experiment is an old lady named AZ. A CT scan revealed a large cerebral infarction in the territory of the left middle cerebral artery involving the parietal, temporal and posterior frontal regions but sparing the basal ganglia. Influenced by the damage in the brain district, AZ's naming abilities were severely impaired. The researchers designed seven experiments to investigate AZ's semantic ability: 1) semantic distance effects in identification of person names; 2) refractoriness in identification of person names; 3) spoken word-written word matching in the broad category of brand names; 4) verbal knowledge of person names; 5) semantic relatedness of historical figures; 6) is person knowledge organized by principles other than occupation? 7) does phonemic similarity influence the semantic organization of proper nouns? The results show that all of the procedures reported in this study have probed for the presence or absence of a semantic distance effect upon AZ's response accuracy.

Greene et al. (2001) and Lindquist et al. (2012) adopted fMRI to study the engagement of emotion and the nature of emotion respectively. In a recent study, Diaz (2019) analyzed the possibilities of neuroimaging methods with the above two experimental studies as examples within the practice of experimental philosophy.

4. Conclusion

We examined in this paper the experimental turn in philosophy of language by (1) analyzing the distinction between and complementarity of armchair theorizing (conceptual analysis in particular) and empirical testing (experimentation); (2) proposing that three types of experimental methods in social sciences and cognitive science are available to philosophers and have been adopted in philosophical investigations, that is, the method of survey, the method of big data, and the method of cognitive neuroscience. The growing popularity of experimental philosophy (and the use of "the experimental turn") does not mean that experimental philosophy is to replace armchair philosophy, but that the former complements the latter by providing necessary empirical evidence. The rise of experimental philosophy symbolizes the return of the tradition of the continuity of philosophy and science and there will continue to be waves of more X-Phi studies with a wider variety of experimental tools and methods in the near future.

Conflict of interest

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ORIGINAL ARTICLE

The syntactic coercion between “ N_1 Adv *shi* N_2 ” and “S *bi* N_1 *hai* N_2 ” constructions

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Abstract: Though many researchers have studied “ N_1 Adv *shi* N_2 ” and “S *bi* N_1 *hai* N_2 ” constructions, none of them have done some research on the correlation between them. In view of it, this thesis analyzes the syntactic coercion of the construction “ N_1 Adv *shi* N_2 ” on the construction “S *bi* N_1 *hai* N_2 ” from the perspective of the Cognitive Construction Grammar. The findings are: the latter inherits from the former the characteristics of nouns as adjectives, generic reference of nouns, and no negation, etc., but blocks the characteristic of personal names with specific reference; the latter partially inherits from the former some characteristics of nouns, such as the nouns referring to people, but blocks the information of geographical and personal names. In addition, the metonymic thinking model link proposed in this thesis has complemented the four types of links between constructions by Goldberg.

Keywords: Cognitive Construction Grammar; “S *bi* N_1 *hai* N_2 ”; “ N_1 Adv *shi* N_2 ”; coercion of construction; inheritance of construction; syntax

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1. Introduction

The construction “ N_1 Adv *shi* N_2 ” is generally called a tautology, in which N_1 and N_2 are same in form, linked by the affirmative verb “*shi*” (是). N_1 expresses referential meaning, for instance, “*laohu*₁” (老虎₁) in (1); and N_2 expresses connotative meaning which belongs to the adjective category, for instance, “*laohu*₂” (老虎₂) in (1), meaning “man-eating”. “Adv” in the construction refers to intensifying adverbs, for instance, the adverb “*zhongjiu*” (终究) in (1). But if the adverbs in the construction express concession instead of intensification, and N_2 expresses referential instead of connotative meanings, for instance, the adverb “*dao*” (倒) and “*nanren*₂” (男人₂) in (2), the construction is not the one studied in this thesis. “S *bi* N_1 *hai* N_2 ” is a comparative construction, in which S is a comparative subject, N_1 is a comparative object, N_1 and N_2 are same in form; N_2 expresses the comparative result, for instance, “*nvren*₂” (女人₂) in (3) functions as an adjective

with connotative meaning, such as “tender” and “timid”.

- (1) 老虎₁ 终究是老虎₂, 它总是要吃人的. (Lv Shuxiang 2012)
Laohu₁ zhongjiu shi laohu₂, ta zongshi yao chiren de. (Lv Shuxiang 2012)
'A tiger is a tiger after all. It will always eat people.' (translated by author¹)
- (2) 男人₁ 倒是男人₂, 只不过不是真男人. (BCC²)
Nanren₁ daoshi nanren₂, zhi bu guo bu shi zhen nanren.
'The man is a man indeed, but he is not a real men.'
- (3) 男人要是女人起来, 比女人₁ 还女人₂.
Nanren yao shi nvren qi lai, bi nvren₁ hai nvren₂.
'When a man behaves like a woman, he is more like a woman.'

The studies of the construction “N₁Adv shi N₂” on syntax are mainly about the adverbs, nouns and the function of N₂ (Gao Mingle, 2002; Wen Xu, 2003; Liu Zhengguang, 2005; Yin Hehui, 2006; Wang Yin, 2011a; Zhang Ailing, 2016; Fu Zhenglin and Wen Xu, 2017). The studies of “S bi N₁ hai N₂” on syntax mainly concern the function of N₂, nouns, whether *hai* can be omitted, whether there is negation, and whether S and N₁ can be exchangeable, etc (Zong Shouyun, 1995; Yin Zhiping, 1995; Tang Yili, 2001; Wang Xia, 2001; Zhang Aiming, et al. 2002; Zhou Jinguo, 2003; Ma Wezhong, 2014). Yet in these researches, there are not any studies of the correlation between the two constructions. In view of it, this study investigated the correlation between them by analyzing the coercion of “N₁Adv shi N₂” on “S bi N₁ hai N₂” from the perspective of the Cognitive Construction Grammar.

2. Coercion between “N₁Adv shi N₂” and “S bi N₁ hai N₂”

Goldberg (1995: 75–81) claimed that there are four major types of inheritance links between constructions, i.e., polysemy links, metaphorical extension links, subpart links, and instance links; “construction A motivates construction B if B *inherits* from A” (ibid: 72). Wang Yin (2011a: 377) proposed that the relation between coercion and inheritance is a unity of opposites, i.e., if construction A coerces construction B, then construction B inherits some information from construction A. In terms of their views, except for the four inheritance links, there exists another type of link, i.e., N₁ and N₂ in constructions A and B share the same WHOLE-PART metonymic thinking model, specifically, N₂ is a part of N₁. In other words, the same metonymic thinking model can also lead to the coercion of construction A on construction B or the inheritance of construction B from construction A. N₁ and N₂ in “N₁Adv shi N₂” and “S bi N₁ hai N₂” constructions have the same syntactic features, i.e., N₁ expresses the referential meaning, N₂ expresses the connotative meaning. The coercion between them can be illustrated by **Figure 1**.

In Figure 1, there is a line linking N₁ and N₂ in the construction “N₁Adv shi N₂”, and the former points at the latter, implying that they have a WHOLE-PART metonymic relation, and N₁ coerces N₂ semantically. In the construction “S bi N₁ hai N₂” there is a line linking N₁ and N₂, too, and the former also points at the latter, implying that they have a metonymic relation, and N₁ coerces N₂ semantically, too. Therefore, it indicates that “S bi N₁ hai N₂” is coerced by “N₁Adv shi N₂” through

1. All the examples in Chinese are translated by author.

2. <http://bcc.blcu.edu.cn>

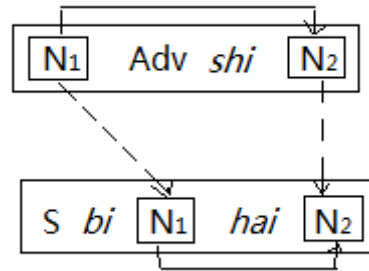


Figure 1. Coercion of “ N_1 Adv *shi* N_2 ” on “ S *bi* N_1 *hai* N_2 ”.

the WHOLE-PART metonymic thinking model. The coercion of the two constructions are linked by two dotted lines, one of which links N_1 s, the other of which links N_2 s. The dotted lines indicate that “ S *bi* N_1 *hai* N_2 ” inherits some information from “ N_1 Adv *shi* N_2 ” partially.

3. Analysis of the coercion of “ N_1 Adv *shi* N_2 ” on “ S *bi* N_1 *hai* N_2 ”

3.1. Nouns as adjectives: N_1 coerces N_2

The modal adverbs used in “ N_1 Adv *shi* N_2 ” generally are “*jiu*”(就), “*zong*”(总), “*bijing*”(毕竟), “*jiujing*”(究竟), “*zonggui*”(总归), “*daodi*”(到底), “*zhongjiu*”(终究) and “*zhonggui*”(终归). “*jiu*”(就) is a scope adverb, and “*zong*”(总) is a temporal adverb (Lv Shuxiang 1980: 18). But with the passage of time, the scope adverb “*jiu*”(就) gradually changes partially to be a modal adverb (Zhang Xiusong 2008: 9). On the effects of the modal adverbs in the construction “ N_1 Adv *shi* N_2 ”, Lv Shuxiang (1980: 78) pointed out that “*bijing*”(毕竟), “*jiujing*”(究竟), “*zonggui*”(总归) and “*daodi*”(到底) express the full confirmation of the important or right facts, implying the negation of unimportant and wrong results, and (Lv Shuxiang, 1980: 686, 314, 698, 153) emphasize the features of the referent. The following sentences (4)-(7) are taken from Lv (1980):

(4) 孩子₁ 究竟是孩子₂, 哭了一会儿玩去了。

Haizi₁ zhongjiu shi haizi₂, ku le yihuier wan qu le.

‘Children are children after all. They go out playing after having cried for a while.’

(5) 事实₁ 总归是事实₂, 谁也不能否认。

Shishi₁ zonggui shi shishi₂, shui ye bu neng fouren.

‘Facts are facts after all. They can’t be denied.’

(6) 南方₁ 到底是南方₂, 四月就插秧了。

Nanfang₁ daodi shi nanfang₂, si yue jiu chayang le.

‘The south is the south after all. The seedlings are transplanted in April there.’

(7) 老虎₁ 终究是老虎₂, 它总是要吃人的。

Laohu₁ zhongjiu shi laohu₂, ta zongshi yao chiren de.

‘A tiger is a tiger after all. It will always eat people.’

In terms of Lv, “haizi₂” (孩子₂), “shishi₂” (事实₂), “nanfang₂” (南方₂) and “laohu₂” (老虎₂) in (4)-(7) express the connotations of the referents. Specifically, when the modal verb “jiujing”(究竟) is used in (4), the connotations of “haizi₂” (孩子₂) would be highlighted, such as “naughty”, “playful” and “dirty”, etc. According to the context of (4), the meaning of “haizi₂” (孩子₂) is “playful”, and its function is an adjective. When “zonggui”(总归), “daodi”(到底), and “zhongjiu”(终究) are used in (5)(6)(7) respectively, the connotations of “shishi₂” (事实₂), “nanfang₂” (南方₂) and “laohu₂” (老虎₂) would be highlighted respectively and function as adjectives, too.

There are some other researchers holding the same view, such as Chen Xinren (2002) and Zhang Ailing (2011). Chen Xinren (2002) claimed that the implied meanings of N₂ in “N₁Adv shi N₂” are dependent on the modal adverbs. The implied meaning in fact refers to the noun’s connotation. For instance, the connotations of “nianqingren” (年轻人) include “careless”, “inexperienced”, “bold” and “energetic”, etc. Zhang Ailing (2011) argued that N₂ in “N₁Adv shi N₂” changes from the referential to connotative meaning. Besides, Gao Minle (2002) and Wen Xu (2003) held that the modal adverbs enhance the judgement meaning of the construction. Pan Guoying (2006: 79) claimed that the adverbs in “N₁Adv shi N₂” are focal operators, deciding the focal point of N₂.

According to the views above, the modal adverbs play a very important role in “N₁Adv shi N₂”. If the modal adverbs in sentences (4)-(7) are omitted, it’s found that there are no emphases on the affirmative judgement of N₁, and these sentences are a bit difficult to understand. Zhang Xiusong (2008: 6), in analyzing “N₁Adv shi N₂”, pointed out that if the adverb “daodi” (到底) is omitted, the sentence cannot be self-explanatory. The function of the intensifying adverbs will be clarified further by the following sentences (8)-(10).

(8) 电视₁是电视₂, 但是调不出一个台。(Zhang Ailing 2011)

Dianshi₁ shi dianshi₂, dan shi tiao bu chu yi ge tai.

‘The television is a television, but it cannot set a channel.’

(9) 大学生₁是大学生₂, 然而连篇像样的文章都写不出来。(ibid)

Da xuesheng₁ shi da xuesheng₂, ran er lian pian xiang yang de wenzhang dou xie bu chu lai.

‘The college students are college students, but they cannot even write a decent article.’

(10) 他们家亲戚₁是亲戚₂, 就是不太亲。(ibid)

Tamen jia qinqi₁ shi qinqi₂, jiu shi bu tai qin.

‘In their family the relatives are relatives, but they are distant to each other.’

As there are no intensifying adverbs in the construction, “dianshi₂” (电视₂) in (8), “daxuesheng₂” (大学生₂) in (9), and “qinqi₂” (亲戚₂) in (10) express the referential meanings instead of connotations respectively. Therefore, from the perspective of the Cognitive Construction Grammar, “N₁Adv shi N₂” can indeed coerce N₂ to highlight its connotations and function as an adjective. Zhang Ailing (2016) also noticed that the modal adverbs in “N₁Adv shi N₂” can make the prototypical connotative meaning of the noun salient.

According to the analysis above, N₂ can be coerced by “N₁Adv shi N₂” into an adjective.

Therefore, N_1 , as a noun, expresses the referential meaning; N_2 , as an adjective, expresses the connotations of N_1 . There is a WHOLE-PART metonymic thinking model between N_1 and N_2 (Liu Zhengguang, 2005: 118). N_1 and N_2 in “S *bi* N_1 *hai* N_2 ” have the same metonymic thinking model as those in “ N_1 Adv *shi* N_2 ”. Thus the syntactic functions of N_1 and N_2 in the two constructions are the same. As “ N_1 Adv *shi* N_2 ” appears much earlier than “S *bi* N_1 *hai* N_2 ”, the latter is coerced by the former and has inherited the WHOLE-PART metonymic thinking model between N_1 and N_2 from the former. Therefore, a conclusion can be reached that N_2 in “S *bi* N_1 *hai* N_2 ” inherits the function of the adjective from N_2 in “ N_1 Adv *shi* N_2 ”.

3.2. Generic reference of noun

Jackendoff (1983: 77–88) claimed that generic concept is a representation of a category for a categorization of things, pertaining to a mental conceptual structure, which does not refer to one specific thing. Generic reference of nouns refer to a type of people or things, such as proper nouns, pronouns and bare nouns. The meanings of the generic reference of nouns focus on their connotation instead of reference (Liu Danqing, 2002: 421), or a generation of their attributes (Niu Baoyi, 2012). The nouns in “ N_1 Adv *shi* N_2 ” are generic reference of nouns (Liu Zhengguang, 2005:116; Yin Guohui, 2006: 70; Fu Zhenglin & Wen Xu, 2017: 48), but Pan Guoying (2006: 77) and Zhang Xiusong (2008: 8) held that N_1 in “ N_1 Adv *shi* N_2 ” are specific reference of nouns. The former view can be explicated by whether there is a causal relationship in meaning between N_1 and the clause (p):

[1] If there is a causal relationship in meaning between N_1 and the clause p , N_1 is a generic reference of noun;

[2] If there is no causal relationship in meaning between N_1 and the clause p , N_1 is a specific reference of noun.

[1] can be explicated by sentences (4) (5) (6) (7). In these four sentences, there is a causal relationship in meaning between “*haizi*₁” (孩子₁), “*shishi*₁” (事实₁), “*nanfang*₁” (南方₁), “*laohu*₁” (老虎₁) and their clauses p respectively, i.e., “*ku le yihuier wan qu le*” (哭了一会儿玩去了 _{p}), “*buneng founeng*” (不能否认 _{p}), “*siyue jiu chayang le*” (四月就插秧了 _{p}), “*zongshi yao chiren de*” (总是要吃人的 _{p}), meaning that “*haizi*₁” (孩子₁) are playful; “*shishi*₁” (事实₁) cannot be denied; the seedlings are transplanted in April in “*nanfang*₁” (南方₁); and “*laohu*₁” (老虎₁) always eat people. The connotation of these nouns display their prototypical and universal attributes of the type of people, things, places, or animals in the context, which are different frame structures of knowledge obtained from our daily experience. Therefore, these nouns (N_1) in (4) (5) (6) (7) with intensifying adverbs are generic reference of nouns.

[2] can be explicated by sentences (8) (9) (10). In these three sentences, there is no causal relationship in meaning between “*dianshi*₁” (电视₁), “*daxuesheng*₁” (大学生₁), “*qinqi*₁” (亲戚₁) and their clauses p respectively, i.e., “*tiao bu chu yi ge tai*” (调不出一个台 _{p}), “*lian pian xiangyangde wenzhang dou xie bu chu lai*” (连篇像样的文章都写不出来 _{p}), “*bu tai qin*” (不太亲 _{p}), in that the connotation of these nouns (N_1) in the context do not display their prototypical and universal attributes, i.e., “*dianshi*₁” (电视₁) cannot set a channel; “*daxuesheng*₁” (大学生₁) cannot write a decent article; “*qinqi*₁” (亲戚₁) are distant to each other. These attributes are not embraced by the conventional frame structure of knowledge stored in people’s mind, such as “*dianshi*₁” (电视₁) can set a channel; “*daxuesheng*₁” (大学生₁) can write a decent article; “*qinqi*₁” (亲戚₁) are kind

or close to each other. Thus, the nouns (N₁) in (8) (9) (10) with no intensifying adverbs are specific reference of nouns.

According to the analysis above, N₁ in “N₁Adv shi N₂” are generic reference of nouns. With the view of claiming N₁ in “N₁Adv shi N₂” are specific reference of nouns by Pan Guoying (2006) and Zhang Xiusong (2008), the personal names are only specific reference of nouns. For example,

(11) 桃子₁ 终究是桃子₂, 还是离不了模特儿这个老本行。

Tao Zi₁ zhongjiu shi Tao Zi₂, hai shi li bu le moteer zhe ge lao benhang.

‘Tao Zi₁ is Tao Zi₂ after all. She can’t get away from her old job as a model.’

In (11), the personal name “taozi₁” (桃子₁) is a specific reference of noun.

N₁, as generic reference of nouns in “N₁Adv shi N₂”, can also be approved by the corpus collected in this study. Among 965 items of the corpus, there are only 3 personal names, taking up 0.76%. In other words, 99.34% of nouns are generic reference of nouns. Besides, there are no modifiers in front of all the nouns in “N₁Adv shi N₂” (Liu Zhengguang, 2005), meaning that most of the nouns are bare nouns. In terms of the study by Liu Baoyi (2012: 79), the bare nouns are generic reference of nouns.

Most of the nouns (N₁) in “S bi N₁ hai N₂” are generic reference of nouns because they have the prototypical characteristic of the generic reference of nouns, and almost all of them are bare nouns. For example,

(12) 对方贫贱不能移, 威武不能屈, 比烈士₁ 还烈士₂, 让楚玉见识了一把什么叫忠贞不二。

Duifang pinjian bu neng yi, weifu bu neng qu, bi lieshi₁ hai lieshi₂, rang Chu Yu jianshi le yi ba shenmo jiao zhongzhen bu er.

‘The other side cannot be moved from poverty or inferiority, nor can he bend under power or force. This shows that he is more like a martyr, letting Chu Yu see what a real royalty is.’

(13) 这节课听起来实在是索然无味, 比鸡肋₁ 还鸡肋₂。

Zhe ke ting qi lai shi zai shi suoranwuwei, bi jile₁ hai jile₂.

‘The lecture is really dull, and is less valuable than a chicken rib.’

(14) 咱们工人就这点谁也比不过, 吃苦耐劳, 比牛₁ 还牛₂!

Zan men gongren jiu zhe dian shui ye bi bu guo, chi ku lai lao, bi niu₁ hai niu₂.

‘No one can work hard as us workers. We can work even harder than cows.’

In sentences (12) (13) (14), “lieshi” (烈士), “jile” (鸡肋) and “niu” (牛) are bare nouns, expressing their prototypical meanings respectively. Therefore, the nouns referring to people, things and animals in “S bi N₁ hai N₂” are nouns used by the people most frequently, which have the same characteristic of generic reference of nouns as those in “N₁Adv shi N₂”.

The personal names used in “S bi N₁ hai N₂” are generic reference of nouns, which are different

from those in “N₁Adv shi N₂”. For example,

- (15) 为了阿芳，这秘密无论如何不能泄露。他怕失去钱以后，会不会失去她？尽管他做好失去的准备，但他真心地爱，比罗密欧₁还罗密欧₂。（Li Guowen *Memories of an Insecure Building*）

Wei le A Fang, zhe mimi wu lun ru he bu neng xielou. Ta pa shiqu qian yi hou, hui bu hui shiqu ta? Jin guan ta zuo hao shiqu de zhunbei, dan ta zhen xin de ai, bi luomiu₁ hai luomilou₂.

‘The secret can’t be open to others for the sake of A Fang’s love. He is afraid that he would lose her if he lost his money. Though he is prepared to lose her, he loves her really. His love for her is deeper than Romeo’s love for Juliet.’

“luomiu₁” (罗密欧₁) in (15) is a generic reference of noun which means “people loving each other”.

In conclusion, when “N₁Adv shi N₂” coerces “S bi N₁ hai N₂”, the latter inherits from the former the information of the nouns referring to people and things, abstract nouns and animal names as generic reference of nouns, but blocks the information of the personal names as specific reference of nouns.

3.3. No negation

There is no negation in “N₁Adv shi N₂” (Wang Yin, 2011b: 380). If the negative character “bu” (不 “not”) is inserted into the construction, N₁ does not conform to p in meaning. For example,

- (16) a. 诗人₁到底是诗人₂, 妻子姓蓝, 连家具也全用蓝色来装扮_p. (Taken from Zhang Ailing 2011)

Shiren₁ daodi shi shiren₂, qizi xing lan, lian jiaju ye yong lanse lai zhuangban_p.

‘Poets are poets after all. As his wife’s family name is Lan, all the furniture at home are decorated in blue.’

- b. * 诗人₁到底不是诗人₂, 妻子姓蓝, 连家具也全用蓝色来装扮_p.

Shiren₁ daodi bu shi shiren₂, qizi xing lan, lian jiaju ye yong lanse lai zhuangban_p.

‘Poets are not poets after all. As his wife’s family name is Lan, all the furniture at home are decorated in blue.’

- (17) a. 专家₁总是专家₂, 这样复杂的问题, 都讲得深入浅出_p. (October, taken from Pan Guoying 2006)

Zhuanjia₁ zong shi zhuanjia₂, zhe yang fu za de wenti, dou jiang de shen ru qian chu_p.

‘Experts are experts. They can explain the complex issue in simple language.’

- b. * 专家₁总不是专家₂, 这样复杂的问题, 都讲得深入浅出_p.

Zhuanjia₁ zong bu shi zhuanjia₂, zhe yang fu za de wenti, dou jiang de shen ru qian chu_p.

‘Experts are not experts. They can explain the complex issue in simple language.’

(16b) and (17b) show that if the negative character “bu” (不) is inserted in the construction, there is no causal relationship in meaning between N₁ and *p*. For instance, in (16a), as his wife’s family name is Lan (means “blue”), he, a poet, decorates the furniture at home in blue, meaning that only a poet would be so romantic to do so. But in (16b), when the negative character “bu” is inserted in the construction, the poets’ romantic quality is denied. Since the poets’ romantic quality is denied, he would not be so romantic to decorate the furniture in blue for his wife. Thus (16b) is not self-explanatory.

The construction “S bi N₁ hai N₂” cannot be inserted by the negative character “bu” (不) either, which can be explicated by sentences (12) (13) (14) (15). The reason for the unacceptability of the negation of “S bi N₁ hai N₂” is due to the correlation between the referent N₁ and its connotation N₂; there is a contiguity relationship of “WHOLE-PART” between N₁ and N₂, and they cannot be separated from one another in people’s mind. Therefore, the constructions with nouns concerning the referent and its connotations generally do not have negation. To conclude, “S bi N₁ hai N₂” inherits the no-negation characteristic from “N₁Adv shi N₂”.

3.4. On nouns

The corpus of “N₁Adv shi N₂” are collected from BCC³. As “N₁Adv shi N₂” mainly concerns eight intensifying adverbs, such as “jiu” (就), “zong” (总), “bijing” (毕竟), “jiujing” (究竟), “zonggui” (总归), “daodi” (到底), “zhongjiu” (终究) and “zhonggui” (终归), a survey of the construction with these eight adverbs is conducted. 1000 items for each adverb are loaded down randomly, and there are 8000 items as a whole. Some unqualified constructions are canceled by hand, such as the repeated sentences, sentences making no sense, sentences without nouns (e.g., “bu liaojie daodi shi bu liaojie” 不了解到底是不了解), and sentences with “jiu” (就) expressing a range, and 965 items are obtained. The corpus of “S bi N₁ hai N₂” are taken from the published thesis, the modern Chinese corpus of CCL⁴, BCC, Corpus on Line⁵, TV and our daily life. Though the corpus of the two constructions are not balanced in the range of collection, they also bear the similarities between them on the types of nouns.

There are five types of nouns used in “N₁Adv shi N₂”, concerning nouns referring to people, abstract nouns, nouns referring to things, animal names, and personal names. Except for the five types of nouns, there is another type of nouns used in “S bi N₁ hai N₂”, i.e., geographical names. The nouns used in the two constructions are listed in **Table 1**.

As shown in Table 1, the types of nouns used in “N₁Adv shi N₂” and “S bi N₁ hai N₂” rank from higher to lower in number are as follows.

N (people) > Abstract N > N (thing) > AN > PN (“N₁Adv shi N₂”)

N (people) > N (thing) > Abstract N > AN > PN > GN (“S bi N₁ hai N₂”)

The same characteristic of the two constructions is that the nouns referring to people rank first

3. BCC refers to The Chinese Corpus of Beijing Language and Culture University (<http://bcc.blcu.edu.cn/>).

4. CCL refers to Center for Chinese Linguistics PKU (http://ccl.pku.edu.cn:8080/ccl_corpus/index.jsp?dir=xiandai).

5. The website of Corpus online is <http://www.cncorpus.org/>.

Table 1. Types of nouns used in “ N_1 Adv *shi* N_2 ” and “S *bi* N_1 *hai* N_2 ”. Note: “N” = “noun”; “AN” = “animal name”; “NP” = “personal name”; “GN” = “geographical name”.

Type	N_1 Adv <i>shi</i> N_2		S <i>bi</i> N_1 <i>hai</i> N_2		Shared N
	Number	Percent	Number	Percent	Number
N (people)	173	43.91%	297	41.77%	62
Abstract N	109	27.66%	76	10.69%	13
N (thing)	87	22.08%	206	28.97%	26
AN	22	5.58%	57	8.02%	9
PN	3	0.76%	57	8.02%	0
GN	0	0%	18	2.53%	0
Total	394	100%	711	100%	110

in number, and 61 nouns are shared by them, such as “ouxiang” (偶像 “idol”), “xiaohai” (小孩 “child, children”), “xiaohaizi” (小孩子 “child, children”), “pengyou” (朋友 “friend”), etc. The reason for the result is that they have the same cognitive metonymic thinking model between N_1 and N_2 . The biggest difference between them is that “ N_1 Adv *shi* N_2 ” has no geographical names. Besides, many more personal names are used in “S *bi* N_1 *hai* N_2 ” than “ N_1 Adv *shi* N_2 ”. The statistics in Table 1 indicate that though the two constructions have the same cognitive metonymic thinking model between N_1 and N_2 , they are different syntactically and semantically, which would lead to the similarities and differences in types and number of nouns.

“ N_1 Adv *shi* N_2 ” is a construction with no negation. The nouns referring to people and things, and animal names tend to be used in the construction because these types of nouns are easier to be coerced into generic reference of nouns. And the geographical and personal names are seldom used in “ N_1 Adv *shi* N_2 ” in that these two types of nouns are specific reference of nouns which are generally more difficult to be or even cannot be coerced into generic reference of nouns, such as “zhongguo” (中国 “China”), “meiguoguo” (美国 “America”), “Shanghai” (上海), “Lei Feng” (雷锋), “Zhu Geliang” (诸葛亮), and “Nan Batian” (南霸天), etc.

“S *bi* N_1 *hai* N_2 ” is a comparative construction expressing metaphorical meanings, which can accept more types of nouns than “ N_1 Adv *shi* N_2 ”. Therefore, when “S *bi* N_1 *hai* N_2 ” is coerced by “ N_1 Adv *shi* N_2 ”, the former inherits all the types of nouns from the latter.

4. Conclusion

This thesis analyzes the syntactic coercion of “ N_1 Adv *shi* N_2 ” on “S *bi* N_1 *hai* N_2 ” and finds that they have a close relationship between them. The latter inherits the information of nouns as adjectives, generic reference of nouns and no negation from the former, and blocks the information of personal names as specific reference of nouns. On nouns, “S *bi* N_1 *hai* N_2 ” mainly inherits the nouns referring to people from “ N_1 Adv *shi* N_2 ”, and blocks the geographical and personal names. Besides, according to the analysis of the coercion between the two constructions, there exists a “WHOLE-PART” metonymic thinking model link, which supplements Goldberg’s four types of links (1995).

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ORIGINAL ARTICLE

The embodied grounding of focal parts in English wh-dialogues with negative answers

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Abstract: Negative answers are common types of responsive expressions to English wh-questions. From the theoretical perspective of Embodied-Cognitive Linguistics (Wang, 2014) and the dialogic view on meaning construction, this study takes English wh-dialogues with negative answers as the research object and regards such dialogues as a special group of dialogic constructions in conversation. This paper gives an account of the embodied properties of the semantic grounding process of dialogic focuses in such constructions, in terms of the types of the semantic grounding and the categories of semantic consistency of focal parts of wh-questions with those of negative answers, with the ultimate goal to decipher the cognitive mechanism by which wh-dialogues with negative answers are produced and construed in linguistic communication.

Keywords: wh-dialogue; construction grammar; negation; event; grounding

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1. Introduction

Dialogue analysis is one of the cutting-edge topics in current linguistic cognitive research (Brône et al., 2014; Fried, 2009; Nikiforidou et al., 2014; Sakita, 2006; Zeng, 2018; Gao, 2015; Hu and Meng, 2015; Wang, 2017). A pair of a wh-question and its answer is a form of dialogue in linguistic communication. The existing cognitive approaches to English wh-dialogues (Zeng, 2016; Wang and Zeng, 2016a, 2016b, 2016c) reveal that pairs of wh-questions with negative answers are configurations with unique structural features, as shown in dialogue (1).

Dialogue (1)

Question: What were you thinking about?

Answer: Oh, I was thinking, ‘I don’t want this to end.’

The focal part of the wh-question in dialogue (1) is the interrogative word “what”, which is

highlighted at the beginning of the question, and the answer contains the sequence of linguistic signs “I don’t want this to end”, where there is a contracted form of syntactic negation marker “*not*”. In this dialogue, the respondent directly elaborates the focus of the question with the structure involving a negated semantic content, and the questioner garners the specific information of “what” through the answer having a negative marker. Dialogue (1) exemplifies the structural pattern of a wh-question with its negative answer. In such type of dialogues, the question is typically constructed with the form of “wh-word + auxiliary + remainder?”, while the answer is the linguistic expression containing such negative lexicon(s) as *no*, *not*, *never*, *nothing*, *nobody*, *nowhere*, *none*, *unsuccessful*, or a syntactic marker of negation, for instance, the prefix “*dis-*”, the condensed form “*n*’” when collocated with an auxiliary verb. The purpose of a speaker’s using this kind of dialogue is supposed to verify the known information about the objective world or to explore the unknown information concerning the reality by deconstructing and reconstructing events.

According to Croft and Cruse (2004: 257–258), construction is a symbolic unit, which subsumes syntactic, semantic, pragmatic and discourse-functional properties. A construction is a form-meaning pair (Goldberg, 1995: 4). Constructions are conventionalized pairings of form and function (Goldberg, 2006: 3). In this sense, the pair of form with function indicated by a wh-dialogue with the negative answer signifies the status of “*dialogic construction*” of such a dialogue.

Bakhtin (1981) and Voloshinov (1973) advocate a dialogic view on the meaning constructed in literary texts, and hold that the dialogue is the fundamental form of human’s existence. According to Kristeva (2013: 3), intertextuality is the relation of a text with its previous and latter texts, suggesting that the understanding of meaning should be based on the relationship between texts. Linell (2006) assumes that cognitive studies on language should examine the interactions between subjects and the interactions between subjects and contexts in linguistic communication. Linell (2006) also points out that the meaning of a particular discourse in communication is linked to its outer syntax that may include three parts, namely antecedent, subsequent, and co-occurring structures. What is worthy of our attention is that Du Bois (2014) introduces the theory of dialogic syntax to analyze the meaning of discourse, while Brône and Zima (2014) propose a dialogic construction grammar approach, the integration of dialogic syntax and cognitive construction grammar, to natural languages, advocating that the cognitive analysis of utterances should examine the dialogic resonances among structures at least at the syntactic, semantic and pragmatic levels.

This paper, in agreement with the view of embodied construal and the kernel principle “Reality (*ti*)---Cognition (*ren*)---Language” proclaimed by Embodied-Cognitive Linguistics (ECL), discusses the categories of semantic grounding of focal parts of questions in wh-dialogues with negative answers, and investigates the types of focal adjustments in such dialogues, with an aim to expound the correlation between language, cognition and interpersonal interaction in these types of dialogic constructions. All the examples of dialogues are selected from the Corpus of Contemporary American English (COCA).

2. Existing research findings on negation

Negation is a key research topic in the fields of philosophy, logic, psychology, and linguistics. Grounded in single language data or comparative studies in different languages, the existing research on negation has dealt with the conceptual structure, logical form, syntactic features,

discourse function of negation through theoretical speculation or data-driven analysis.

From the philosophic perspective, negation serves as the way of speculation, through which human beings deepen their understanding of the objective world. Negativity is described by Herbert Marcuse as the central concern of modern philosophy and even studies on thought (Xu, 2011: 42). Traditionally, philosophical studies on negation are conducted with the combination of views on dialectics (Tan, 2015: 19), observation perspectives (Zhao, 2013: 208), experience accumulation (Whitehead, 1978), subjectivity (Felgenhauer, 2016) or phenomenology (Saury, 2009: 245).

In logical reasoning, negation is one of the factors to determine the truth value of a proposition. According to Frege, all negations are characteristic of being propositional and can be interpreted or replaced by the structure “it is not true that...” (cf. Speranza, 2010: 298). Wittgenstein introduced the operator of negation to discuss the functions for truth values (Stock, 1985: 465). Mints (2006) uses mathematical logic to analyze propositional semantics of negative sentences. Besides, Onishi (2016) discusses negative modalities under the theoretical framework of relevance logic R.

The studies on negation in psychology mainly examine the relationship between meaning and the conception of negation through various experiments. Language is the function of human mind, so psychoanalysis can reveal the construction, use and cognitive processing of negation in language (Michael, 2006: 6). Horn (1989: 154–203) explains the semantic marking and the acquisition of negation as well as the negating process of conception from the psychological angle. Relevant psychological researches suggest that negative statements and positive statements are not at the same level (Blanco, 2011).

Negation is a universal component of language (Loder, 2006: 13). More often than not, negative statements may contain more information than positive statements (Liu and Cui, 2006: 100). Barwise (1991) observes that all human languages contain one or more operating mechanisms for negation. In the view of Speranza (2010: 299), it is negation that makes us fully human, providing us with the capacity to deny, to contradict, to misrepresent, to lie, and to convey *irony*.

The linguistic researches on negation are mainly carried on at syntactic, semantic, and pragmatic levels. Negation is a process of converting a sentence with affirmative tone into that with negative one, usually by inserting into the sentence negative word(s) such as *no*, *not* or their variants (Gleason, 2001). Haegman (1995) focuses on the syntactic features of negation based on the binding theory and minimalist program in the framework of Transformational - Generative Grammar. Zeijlstra (2007) analyzes the form and syntactic position of negation in different languages, and specifically investigates the quantifiers and the polar item indicating negation, and the consistency of grammatical relations in structures containing negation. On the pragmatic level, Leech (1983) claims that for speakers, negative sentences are processed with more time and efforts than positive ones. Nieuwland (2008) detects the relationship between negation, pragmatic context and world knowledge through ERP experiments.

In linguistic studies, most of the findings on negation are rooted in formalist approaches (cf. Sandu, 1994; Kim, 1995; Ladusaw, 1996) and the cognitive-functional analyses (cf. Halliday, 1994: 22; Langacker, 1991: 241–243). In particular, from the perspective of cognitive linguistic research, Verhagen (2005: 28–77) holds that the main function of negation in the natural language is revealed in the cognitive coordination between conceptualizers; the purpose of speaker/author’s using a

sentence containing negation is to guide the hearer/reader to construct two different mental spaces, one of which is accepted by the hearer/reader at the end of the reasoning process for meaning, while the other of which is rejected.

With regard to the research contents pertinent to negation, ambiguity caused by negation (Horn, 1989: Chapter 6; Liu, 2005), scope and focus of negation (Quirk et al., 1985: 787–789; Zuo, 2014: 1), classification of negation (Miestamo, 2000), and acquisition of negation (Klima and Bellugi, 1966; Choi, 1988; Batet, 1995; Cuccio, 2012) are concerns highlighted in linguistic studies.

To sum up, the existing research findings on negation cover the discussions of the ambiguity caused by negation, the scope and the focus of negation, the position of negation, the function of negation, the relationship between negation, affirmation, and the interrogation. Undoubtedly, these achievements enable us to understand more about negation in language. Nevertheless, there is an obvious deficiency in the existing studies on negation, which is that most of the discussions are done on the basis of single utterances. Additionally, the existing analyses on wh-dialogues (Zeng, 2015) indicate that findings on wh-dialogues with negative answers at the level of paired utterances are rarely seen. This paper is supposed to bridge these gaps left by the existing research on negation as well as wh-dialogues.

3. Event domain-based grounding of focal parts in English wh-dialogues with negative answers

3.1. Event-domain in a wh-dialogue¹

Event domains are the basic units for people to understand the world (Wang, 2005: 18). Event-domain Cognitive Model (ECM) is essentially the representation of the internal structure of an event, as shown in **Figure 1** (ibid).

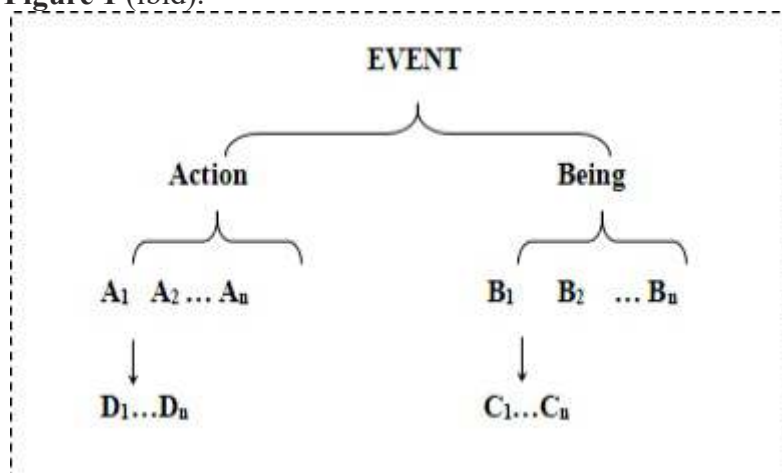


Figure 1. Event-domain cognitive model (ECM) (Wang, 2005: 18).

Figure 1 shows that a basic event domain mainly includes two core elements, viz. *Action* and *Being*, both of which display hierarchical features. Specifically, an *Action* might consist of several sub-actions as marked by A1, A2, or An, while an event could be structured with the joint efforts from multiple participants that are in the category of *Being* and labeled as B1, B2, or Bn. In the

1. Wh-dialogues in this study refer to English wh-dialogues.

view of ECM, the **Being** in an event domain might refer to concrete entities such as persons, objects, or abstract ones (e.g. concepts, imaginative worlds, objects). Additionally, the **Action** or **Being** in an event domain could be specified further in terms of its typical properties such as D1, or Dn for **Action**, and C1, or Cn for **Being**.

According to the assumption of the ECM, in English wh-dialogues, questions and answers are essentially the results of linguistic encoding for the same event domain or different event domains. An interrogative word such as *when*, *where*, *why*, or *how* placed at the beginning of a wh-question is the encoding of the information about time, space, reason, or the mode of the element **Action** in a specific event domain, while the question word such as *what*, *who*, or *which* highlights the features concerning participants (**Being**) in a given event.

3.2. Cognitive grounding

In the sense of Cognitive Grammar, the term *ground* in cognitive grounding theory is distinct from the use of that in figure-ground alignment. The former is employed to indicate the speech event, its participants (speaker and hearer), their interaction, and the immediate circumstances (notably, the time and place of speaking) (Langacker, 2008: 259). Taylor (2002: 341–412) assumes that abstract entities are grounded in situated dialogic context on the basis of schema-instance cognitive principle. “Grounding” is applied to describe the process that an instance is taken out of the instantiation domain of a type concept to talk about a specific entity (or persons and things) (Wan, 2009: 30). Niu (2013: 35) holds that the grounding theory in Cognitive Grammar is to explain a conceptualizer’s mental operation, when things or objects denoted by nouns, or events designated by verbs are contextually situated within the knowledge scopes of both a speaker and a hearer, with the help of certain grammatical strategies. Wang (2011: 471–472) interprets “grounding” as the process that abstract language concepts are elaborated by concrete instances, namely the process to exemplify schematic entities in a particular situation.

Prototypically, in an English wh-dialogue, the schematic wh-word heading the question is specified in the answer, which indicates the grounding process of the dialogic focus, the wh-word initiating a wh-question, from a type concept to a concrete example.

3.3. Schema-instance relation between a wh-question and its (negative) answer

In a wh-dialogue, the semantic grounding of the dialogic focus that is encoded by the wh-word at the head of the question implies the categorization of the relation between a schema that is a type concept indicated by the question and its instance suggested by the (negative) answer, as seen in **Figure 2**.

Figure 2 illustrates that in a wh-dialogue, the question is the conceptualization of type event by virtue of the semantic attribute of a *schema* and thus the semantic uncertainty denoted by the wh-word heading the question. Following this line of thinking, the question in dialogue (1) encodes a schema that is an unspecified TYPE concept of event: you are talking about X, in which X might be instantiated by unlimited examples, for the reason that the semantic grounding elements for the wh-word², such as time, space and speakers, might vary widely.

2. Wh-words in this study are interrogative words at the heads of English wh-questions, such as *what*, *when*, *where*, *how*, or *which*.

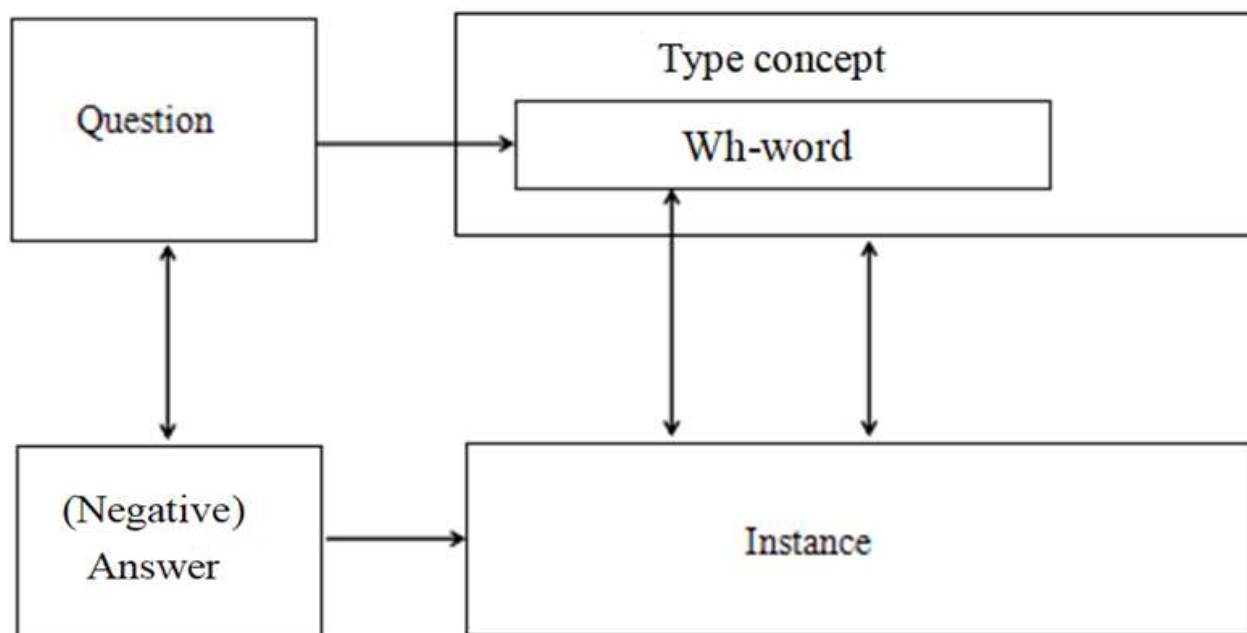


Figure 2. The semantic relation of type concept and its instance in a wh-dialogue.

Essentially, the TYPE concept thus encoded by the wh-question in Figure 2 suggests that Speaker 1 (S1, the questioner) delimits a domain of instances, from which Speaker 2 (S2, the answerer) might select a member to serve as the answer to the wh-word or the wh-question. In the case that the answer is consistent in the semantic category with the wh-word in the question, the answer is in fact the instance of the schema that is the wh-word or wh-question. Otherwise, the so-called answer is not an instance of this schema.

Specifically, in a situated wh-dialogue, the question (Q) by S1 defines a domain of instantiation (DI) of the wh-word³ that is at the beginning of Q. With reference to the textual and other types of contexts working as the background information for the semantic grounding of the wh-word, the DI could accommodate countless specific members of the schematic wh-word. During the interaction between S1 and S2, S2 identifies the semantic features of the wh-word, which could be in the category of the element *Action* or *Being* of the ECM encoded by the wh-question. On account of the roles of the fundamental grounding elements, namely ECM, S1, S2, speakers' interaction, time and space, etc. to specify the dialogic focus, the members of instances in the DI that are possible answers to the schematic wh-word will then be narrowed down to some extent. To successfully select the most proper instance(s) from the DI, S2 needs to probe more contextual information, for instance, the communication intentions of S1 and S2, and the embodied interactive experience between S2 and the objective world. The qualified instance identified eventually by S2 in the DI is then the situated answer to the wh-question. In consequence, the schematic wh-word or wh-question is elaborated by a specific example.

4. Types of grounding of focal parts in questions of wh-dialogues with negative answers

3. Cases of multiple interrogative wh-words heading a wh-question do not fall into the scope of this research.

In wh-dialogues concerned in this study, negative answers typically represent the results of the instantiation of wh-words in questions, indicating the types of grounding of focal parts in these categories of dialogic constructions. In the process of semantic grounding of wh-words from type concept to an instance, the objects to be grounded are wh-words, the elaborations of which are subjected to grounding elements in the dialogic situations. In prototypical negative answers, marker(s) for negation, such as *not*, are the basic grounding elements to semantically anchor wh-words. Viewed from the data in COCA, there are three major types of semantic grounding of dialogic focuses in wh-dialogues with negative answers, which are exemplified as follows.

4.1. Direct grounding

Typically questioners in wh-dialogues expect the respondents to directly provide detailed information about wh-words, the focal parts in wh-questions. For these cases, a dialogue mode of questioning with ideal answering is shared, with the answer directly elaborating the focus in the question. Dialogue (1) is a case in point, insomuch as the negative statement “I don’t want this to end” specifies the “what” at the head of the question in a straightforward way. Another example is dialogue (2).

Dialogue (2)

Question: What does “hit it and quit it” mean?

Answer: It means **there’s no emotional involvement**⁴.

Founded on the syntactic parallelism between the question and the answer (as displayed by the bold black parts between them), the negative statement in the answer, namely “**there’s no emotional involvement**” semantically elaborates the “what” and the ECM frame “*“hit it and quit it” means X*” in the question. Hence, the questioner obtains the missing information on “Being” in the ECM frame, demonstrating the relationship of TYPE concept and the instance between the question and the answer. For this reason, dialogue (2) signifies one of the cases of direct grounding of wh-words in this family of dialogues.

It is noteworthy of our attention that zero instances implied by negative answers are another type of examples of direct grounding of wh-words, as shown in dialogue (3).

Dialogue (3)

Question: Who are you talking about?

Answer: Nobody in specific.

The answer in dialogue (3) represents an abstract concept of an empty set, and “+ human” is the common semantic feature shared by the dialogic focus “who” in the question and “nobody” in the answer. Thus, it is evident that there is the semantic correspondence in this conversation. In this view, “who” in the question is directly grounded in the sense that the number of instances of “who” in the current dialogic situation is zero.

4. The bold black parts in the question and the answer suggest syntactic mappings and thus structural resonances between two utterances (the same hereafter).

4.2. Delayed grounding

By delayed grounding, it means cases where answers with negative syntactic structures simply function to pave the way for the presence of instances of wh-words initiating the questions. For these dialogues, more often than not the respondents provide qualified members for schematic wh-words by employing affirmative statements that are positioned after the negative structures. Dialogue (4) is a convincing example.

Dialogue (4)

Question: How do engineers go about tackling that mountain of data to try to find out what happened?

Answer: Well, it's obviously **not** a very easy task. **The engineers have accident scenarios that they've worked out over the years. They tend to focus on eliminating things called single point failures...**

The answer in dialogue (4) consists of the utterance with the negative marker “**not**” and those with affirmative statements. The expression with negation, however, is not to specify the dialogic focus⁵ “how”, but to explain the property of *being tough* of the task, viz. the EVENT encoded by the question, that is, “By X, engineers go about tackling that mountain of data to try to find out what happened”. As inferred from the syntactic symmetries between the ECM frame in the question and the bold black parts in the answer, there are semantic resonances between the utterance by the questioner and those by the answerer. To put it another way, utterances with affirmative tones function as a whole to be the instance of the “how”, hence the dialogic focus is grounded at length but with a delay by the presence of the negative statement at the beginning of the answer.

4.3. Invalid grounding

Invalid grounding commonly occurs in cases of wh-dialogues with negative answers, where there do exist syntactic and semantic correspondences between questions and negative answers, seemingly showing that wh-words leading the questions are instantiated, but the instances of schematic wh-words are positioned within the scope of the negation. On this condition, the emergent instances are virtually not qualified members to elaborate dialogic focuses in these dialogues. Therefore, the semantic grounding of wh-words turns out to be invalid, with the evidence from dialogue (5).

Dialogue (5)

Question: When have you last seen one billion, Ray?

Answer: Well, not **recently**.

In this dialogue, the bold black parts suggest the syntactic mapping between the question and the answer. Meanwhile, both “when” and “recently” display the semantic property of *time*, with the latter being more specific, implying that “recently” is the instantiation of the “when”, hence indicating the event schema-instance relation exhibited between the two utterances. In the answer, “recently”, however, falls into the scope of negation that makes the qualification of “recently” as the instance of the “when” invalid.

5. The initial dialogic focus of an English wh-dialogue by default is indicated by the wh-word heading the wh-question.

Additionally, the case of invalid grounding could be the result of respondent's incapability to answer the question or hearer's non-cooperation with questioner to specify the dialogic focus in the conversation, just as hinted at in dialogue (6) and dialogue (7) respectively.

Dialogue (6)

Question: Why do you think that Poland should have nuclear weapons?

Answer: I don't understand the question.

The initial dialogic focus for dialogue (6) is linguistically encoded by the "why" in the question. Nonetheless, in the answer there is no structure that is semantically correspondent to "why", and the focus of the respondent is his or her cognitive incapability to interpret the meaning of the question⁶. It is clear that the "why" as the focus in the question is not successfully instantiated, resulting in the invalid grounding of the wh-word.

Dialogue (7)

Question: How did you get your wedding dress?

Answer: I don't want to talk about it.

In regard to dialogue (7), the questioner's concern is the way the answerer got the wedding dress, and the answerer is supposed to provide detailed information centering on "how", whereas the truth is that there is no syntactic structure suggesting any instances of the "how". What the answer has demonstrated is the respondent's attitude of non-cooperation (for a certain reason) with the questioner to specify "how", with the consequence that the wh-word placed at the head of the question is not grounded validly in this situated conversation.

5. Structural mappings from focal parts in negative answers to those in corresponding wh-questions

Normally each utterance in daily language communication has its focus or theme. In the views of cognitive grounding theory and the event-based schema-instance principle, the quality of a wh-dialogue predominantly relies on the degree of semantic consistency between the wh-word heading the question and the focus in the answer. The three types of semantic grounding of wh-words in wh-dialogues with negative answers discussed in section 4 imply that there are two fundamental categories of semantic consistency between wh-questions and the negative answers, revealing the extents of being foregrounded of the wh-word in the local dialogues.

5.1. Explicit semantic consistency of focal parts in wh-questions and their negative answers

When the focus of a wh-question and that of its negative answer have the same semantic feature(s), and the negative statement is a qualified instance of the wh-word leading the questions, the respondent in this situation successfully positions the specific member(s) of schematic wh-word or the entire question frame, based on the "schema-instance" categorization of semantic mapping between utterances. With regard to these cases, an explicit semantic consistency of focal parts in

6. The respondent's incapability to answer the question might be because of the respondent's intention of being unwilling to answer the question, which can be explained further with the help of pragmatic theories and is not the key concern of this study.

wh-questions and their negative answers is displayed, and focuses of questions are foregrounded or highlighted in the communication. Example (8) is one of these types of dialogues.

Dialogue (8)

Question: **What** do you say to me on that score?

Answer: I say that **the US should not treat the Iraqi army as a political faction in Iraq.**

This dialogue is developed around the focus of the question “what”, which is supposed to be a set of utterances uttered by the answerer and associated with the ECM whose *Being* related to “that score”. Before the specific information on “what” is offered, the dialogic focus of the question, viz. “what”, is a schema signifying a type concept. As for the answer, there are structures that were employed in the question, producing syntactic parallelism (you say: I say) as underlined within this conversation. On the basis of the symmetrical feature, it can be inferred that the bold black parts (**the US should not treat the Iraqi army as a political faction in Iraq**) in the answer as a whole is the instantiation of the “what”, even though the negative marker “not” is embedded in the answer. The ECMs based schema-instance relation between the two utterances show that the dialogic focus in the question is foregrounded in the grounding process of the “what”.

5.2. Inconsistency of focal parts in wh-questions and their negative answers

In wh-dialogues, some negative answers and questions form pairs of utterances solely at the syntactic level, but the focuses of questions and those of answers are inconsistent in terms of the semantic properties, giving rise to cases where wh-words heading the questions are not grounded successfully or grounded but in a delayed manner, and thus the dialogic focus in such a wh-dialogue is shifted to a new one (dialogue (9)), or the dialogic focus is suspended (dialogue (10)), or even the dialogic focus is removed (dialogue (11)). For these examples, the dialogic focuses are not foregrounded in the communication.

Dialogue (9)

Question: **How** do you see this race breaking?

Answer: Well, it’s not how I see it; it’s how the polls see it.

As we can see from the answer, the structure “how I see it” is in the scope of negation defined by the negative marker “not”, which informs us in this dialogic situation, the respondent denies the possibility that the focus “how” in the question will be specified, while the structure “*it’s how the polls see it*” with affirmative tone means a new dialogic focus “how” related to a new ECM “the polls see it” is introduced, with the original dialogic focus being shifted and not foregrounded but just as a part of the background for the two speakers to construe the new dialogic focus “how”.

Dialogue (10)

Question: **What** is it?

Answer: It’s not a **drug**.

For this short conversation, the focused attention of the questioner is a set of entity indicated by “what”. In the meantime, both the question and the answer share the event frame: it is X, which

lays the foundation of the schema-instance relation between “what” in the question and “a drug” in the answer. Nevertheless, the status of “a drug” as the instance of “what” is negated by “not” in the answer, bringing forth the example in which the dialogic focus is not grounded but suspended and waiting for being instantiated in the possible coming talk turns.

Dialogue (11)

Question: Who has a policy?

Answer: There’s no policy.

The talk turns in dialogue (11) show that “policy” in the question is re-produced in the answer, suggesting the ECM frame of the question is partially employed by the answerer. In addition, the negative marker “no” functions to negate the possibility that “policy” will be in the category of *Being* to construct the question ECM, indirectly denying the appropriateness of “who” as the central concern of the questioner. Accordingly, the dialogic focus is not elaborated but removed by virtue of the role of “no” in the answer.

Moreover, for examples of delayed grounding, negative answers function to lay the foundation for the presence of instances of wh-words, where the dialogic focus in such a conversation is detained but foregrounded ultimately, with the evidence from dialogue (4), repeated below as dialogue (12).

Dialogue (12)

Question: How do engineers go about tackling that mountain of data to try to find out what happened?

Answer: Well, it’s obviously not a very easy task. **The engineers have accident scenarios that they’ve worked out over the years. They tend to focus on eliminating things called single point failures...**

In the answer of dialogue (12), the first utterance with negative structure does not elaborate the semantic focus of the question, but the respondent still provides specific examples of the focus “what” heading the question before the end of the talk turn. For this dialogue, the focus of the question is not highlighted in the respondent’s mental space until the end of this short conversation.

6. Concluding remarks

From the theoretical perspectives of Event-domain Cognitive Model and cognitive grounding theory, this paper discusses the embodied properties of semantic grounding of focal parts in English wh-dialogues with negative answers, a special group of dialogic constructions, with the dialogue examples retrieved from the Corpus of Contemporary American English (COCA). Specifically, in line with the cognitive view on event and the schema-instance principle, this study proposes that pairs of English wh-questions with their negative answers typically display the relation between type concepts and the instances, indicating that there are three groups of semantic grounding of wh-words positioned at the heads of wh-questions, namely the direct grounding, the delayed grounding, and the invalid grounding. Meanwhile, the types of semantic grounding of wh-words in questions

imply two fundamental categories of semantic consistency between the focal parts of wh-questions and those of negative answers. The first category is the cases of explicit semantic consistency where the original dialogic focuses are foregrounded in conversation, while in the second one that is for the examples of semantic inconsistency, the dialogic focus designed by a questioner is prototypically not salient in the hearer's mental space but works as a part of the background for interlocutors to construe the new dialogic focus, and, if possible, to construct new talk turns. On account of the classifications of such types of dialogic constructions based on the semantic grounding of wh-words and semantic consistency between two utterances(Q and A), this paper thus makes a claim that negative statements having negative markers in the answers to English wh-questions chiefly serve to negate the appropriateness of the original dialogic focuses by denying the validity of the ECM frames of questions, or to negate the schema-instance relation between wh-words or wh-questions and their answers, essentially indicating the strategies speakers in conversation employ to structure English wh-dialogues with negative answers.

Conflict of interest

No conflict of interest was reported by the author.

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REVIEW ARTICLE

Early modern European languages and literature: A short review

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Abstract: This article engages with several recent books about language and literature, with a general focus on the early modern period in Europe. One of these books discusses language study in early modern England. Another examines the histories of words relating to ‘ingenuity’. The third provides a theoretical look at the aphorism with a wide historical scope but with some chapters relating to early modern literature. Each is of general interest for linguistic and literary scholars.

Keywords: early modern; language study; genius; ingenium; aphorism

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This review article covers three books relating to language, literature and the European early modern period. John Gallagher’s *Learning Languages in Early Modern England* places language learning in the context of the ‘English encounter with the wider world’ (p. 4). In doing such, it explores both how English speakers went about learning vernacular European languages and what was considered ‘competence’ in another language. The book is divided into four chapters. Chapter 1, on language teachers and language schools, looks also at other diverse means of language study, such as attendance at foreign language churches in London, during this period. This chapter emphasises the role of studying European vernacular languages in educational reform and its importance in trade and language skill as sign of social accomplishment (p. 52). The most popular European language studied in early modern England, was French, followed by Italian, which is reflected in the study, but other languages such as German, Dutch and Spanish (studied less in this period due to English concerns over Spanish power and Catholicism) do not escape notice. The diversity of language teachers themselves is duly noted: ‘At the same time, the concept of “teacher” as a profession was an elastic one in the early modern period. As we have seen, the idea of a fixed vocation of “teacher” can obscure the educational labour of many who do not easily fit a modern conception of the professional educator. Furthermore, for many early modern language masters, teaching was just one element of a constellation of activities that made up a precarious career’ (p. 53). Chapter 2 is dedicated to the genre of the multilingual conversation manual, vocabulary and pronunciation. The supplementary bibliography (p. 249–263) listing these manuals speaks to

the range of such texts, which are explored in detail. Chapter 3 looks at the complex problem of linguistic competence. Chapter 4 examines travel and language learning through the study of travel narratives and surviving letters and travellers' notebooks in order to reflect on linguistic experiences of English-speakers travelling in continental Europe. In a later period to this study, Thomas Bewick (1753–1828) wrote “‘That which is best administered, is best.’—In England the people may boast that their forefathers had a king, in “Alfred the Great” the wisest the bravest & the best, the World ever knew, & by whose whole excellent conduct was laid the foundation of the liberties of his country from the influence of which, there can be no doubt that the English language will be spoken over the whole Globe’ (p. 94). And now in the age of global English, it is particularly necessary to note that the English language in the early modern period had little international prestige; therefore multilingualism was requisite for English speakers wishing to engage with a wider commercial or literary life or to travel abroad.

The social aspects of language learning are centered in each chapter and both manuscript and printed texts are analyzed in terms of their presentations of class relations, gender politics, and grammatical instruction. Some summary observations of these materials are illuminating, for example: ‘One surprising feature of conversation manuals printed in England is that they give relatively little space to cultural differences. Manuals like John Florio’s for Italian and William Stepney’s for Spanish set their dialogues in London rather than abroad’ (p. 144). Topics explored include: how to address social equals, superiors and inferiors, how to talk about food and alcoholic beverages, how to navigate socially delicate religious and political issues in conversation when abroad, and how to determine whether the social setting allowed one to speak freely, or as one early modern writer put it ‘how to “avoide Arguments and too much libertie in speech”’ (p. 205). A commendable emphasis is placed throughout on language learning and language use as an oral and aural social activity, and attempts at reconstructing the historical record of those activities as far as possible should be of considerable interest to readers interested in historical multilingualism and sociolinguistics in addition to early modern historians and scholars of English literature. As throughout the study one finds very extensive bibliographical footnotes of related scholarship, it is somewhat surprising that its central topic has so far escaped a dedicated monograph, though that lacuna has now been filled commendably. Particularly pertinent to post-Brexit Great Britain, Gallagher emphasizes: ‘The idea of the monoglot nation-state is a recent one. Early modern states were commonly multilingual: their rulers and elites were increasingly convinced of the usefulness of a shared language in this period, but cultural pressure and legislative action would take centuries to bring about “national languages” as we think of them today’ (p. 13) and as a whole this monograph provides detailed evidence of the role multilingualism in early modern Europe.

Another recent monograph by Alexander Marr, Raphaële Garrod, José Ramón Marcaida, and Richard J. Oosterhoff, *Logodaedalus: Word Histories of Ingenuity in Early Modern Europe*, offers a detailed study of the pre-history of the words ‘ingenium’ and ‘genius’ as well as related vocabulary. The history of these words is traced throughout the early modern period, roughly ca. 1470 - ca. 1750 with some variation between different languages. Romantic and post-romantic notions of ‘genius’ have been studied at length in such monographs as Jochen Schmidt, *Die Geschichte des Genie-Gedankens in der deutschen Literatur, Philosophie und Politik, 1750–1945* (1985), Hubert Sommer, *Génie: zur Bedeutungsgeschichte des Wortes von der Renaissance zur Aufklärung* (1999), Darrin M. McMahon, *Divine Fury: A History of Genius* (2013) and Ann Jefferson, *Genius in France:*

An Idea and Its Uses (2014). Closer to our period, Noel L. Brann, *The Debate Over the Origin of Genius During the Italian Renaissance* (2002) looked at the Platonic theory of divine frenzy and an Aristotelian notion of melancholy genius in the context of the Italian Renaissance. The word histories contained in this study begin with a chapter on the Latin *genius* and *ingenium*, and follows with chapters on vernacular languages: Italian *genio* and *ingegno*, Spanish *ingenio* and *agudeza* (especially in the phrase ‘agudeza de ingenio’), French *engin*, *esprit*, *naturel*, and *génie* and in German and Dutch (together in a single chapter): *Art/Aerd*, *Sinnlichkeit/sinnrijk*, *Gemüt* (German), *geest* (Dutch), and finally English: genius, ingenuity, wit, and cunning (p. 3).

In spite of the range of languages studied, the vocabulary is handled very well, though slip ups with Latin are not uncommon. For example: “‘Eam itaque lectoris iudicio maluimus divinandam relinquere, quam temere ex nostro Marte atque ingenio apponere’ (And so I leave to the judgment of the reader to conjecture what he can supply from our art and ingenium)’ (p. 11) is quoted from Robert Estienne’s 1536 edition of his *Thesaurus linguae latinae*. But the translator must have mistaken ‘ex nostro Marte’, which is an ancient adage meaning ‘by our own prowess’ or ‘without any assistance’, for ‘ex nostra arte’ (‘from our art’). And the emblem ‘Vinum *ingeniis* fomes (wine is kindling for wits)’ should read ‘ingenii’ as it is in the picture directly above (p. 27). Mistakes of this kind are not dire, but are unfortunate in close studies of vocabulary. However, this study, primarily focusing on early modern dictionaries and lexicographical materials, conveys the linguistic complexity of ‘ingenuity’ very well as it traverses through various languages and usages in literary, philosophical, social and scientific contexts. Layers of Post-romantic semantics are peeled back and the early modern meanings of ‘ingenuity’ are successfully revealed. ‘Unlike Romantic genius, *ingenium* was something everyone had’ (p. 7) put what it was varied between languages and contexts. The impetus is the pre-history of the concept genius before its more common meaning. The Latin term genius had a relatively ‘stable’ meaning, ‘as a god, genius either stands for natural powers of generation or growth—hence its association with the elements as seeds of things and astral influences—or is a tutelary, protective spirit. As an individuating principle, genius comes loosely to denote the cognitive, moral, and temperamental senses that are mapped, more precisely, by *ingenium*’ (p. 29). From there, a number of interesting linguistic differences are elucidated, for example, Italian *ingegno* and Spanish *ingenio* are identified as closely adhering to Latin *ingenium* ‘ensuring their clear definition as devices and machines, as a creative faculty, and even as the whole person’ while ‘early sixteenth century French had poured all the meanings associated with ingenium (individual identity, courtly display, and even artistic style) into the lexis of *esprit*.’ (p. 236), while the term *génie* overtook *esprit* in the mid-eighteenth century. Interesting, *ingenium* had common medieval meanings ‘as siege engine or malicious ruse’, at it is noted that these meanings were first ignored by sixteenth-century lexicographers, but later ‘reinstated in later seventeenth-century antiquarian and legal dictionaries’ (p. 38–39), which illustrates the earlier humanist concern with discarding medieval Latin usages and the later antiquarian and historical interest. Although there are many such useful observations, it is impossible to summarize in a short space the vast lexical landscape contained in this study. This book is a significant contribution to comparative lexicography and cultural studies, and demonstrates how close attention to a cluster of words can improve the historical and linguistic understanding of the early modern period.

Andrew Hui’s *A Theory of The Aphorism: From Confucius to Twitter* is an ambitious work. Hui defines an ‘aphorism’ as ‘a short saying that requires interpretation’ (p. 5) and emphasises its

density and the contrast between its pithy form and the complexity of interpretation and exegesis. The density of the aphorism requires work on the part of the reader: ‘My point is that deciphering the meaning of the aphorism requires that both the aphorism and the reader be brilliant’ (p. 92). Aphorisms can be quickly read but interpretation is endless. The first of six chapters looks at the *Analects* of Confucius, their collection and compilation and the flourishing of commentaries that developed around them eventually creating a state-sponsored Confucian system. Chapter 2 turns to ancient Greek and the fragments of the pre-Socratic philosopher Heraclitus, emphasizing their obscure and oracular nature. Chapter 3 turns to the Gnostic Christian Gospel of Thomas, which contains a purported list of sayings of Jesus. Hui explores these sayings in relation to the four Biblical Gospels and draws parallels with other ancient Egyptian and near Eastern literature. In Chapter 4, which most closely relates to the early modern period, Hui first looks at Erasmus’ collections of *Adages*, which compiled and explained ancient Greek and Latin proverbs. In contrast to Erasmus’ looking to the past, Francis Bacon is presented as an intellectual ‘fresh start’ (p. 103), and he is represented as turning to the aphorism, not as a compiler of old information, but to “‘add and supply further” to the sum of knowledge’ (p. 108). In terms of aphorisms Chapter 5 looks at Pascal’s *Pensées*, a large and unorganized compilation of writing, set against the methodology of Cartesian natural philosophy. Attempt of readers and editors to organize this disparate material are contrasted with past attempts to organize sayings of Confucius, Heraclitus, and Jesus. Chapter 6 looks at the German philosopher Nietzsche’s *Human, All Too Human* and his later aphoristic writings. The final epilogue turns to Twitter as the title promises, as well as reflections on Japanese Zengo, Sanskrit Sūtras and Zen/Chan Calligraphy.

Provided his emphasis on close reading and interpretation, it is not surprisingly that Hui provides some attention to the original languages of these texts, though in doing so he is not always accurate and although individual words are sometimes quoted in the original languages they are not often further discussed. Chinese characters are sometimes quoted and transliterated but little is said about them for the benefit of unfamiliar readers. The idiom ‘述而不作’ is translated as “I transmit rather than innovate’ (p. 34) but more could have been said about its usage in both the *Analects* or other contexts. Greek accents and breathing marks in particular are inconsistent, as one sees in ‘εἰ δὲ καὶ ἡ παρουσία σοφον’ (p. 85) and ‘γνωθι σαυτον’ (p. 76) and there are mistakes in transliterations, such as the last word in ‘hoi logoi hoi [apokrupoi]’ (p. 62) should be ‘apokruphoi’.

Among other things, this book is a contribution to the study of reading and hermeneutics, and in that regard, there are many authorial observations that stay with the reader. For example, ‘My hypothesis is that, at least in the *Analects*, the amount of scholarly commentary produced is inversely proportional to the succinctness of the original sayings. In other words, the pithier the teacher, the more voluminous the tradition’ (p. 27). Or Hui’s observation that each of the 114 remarks in the Gospel of Thomas begin with ‘Jesus says’, akin to ‘The Master says’ in the *Analects* (p. 67), which for further comparison ‘almost all Buddhist texts in Pali and Sanskrit begin with the formula “Thus have I heard.” ’ (p. 68). As a book on reading and interpretation, this particular monograph is rewarding for how it selects a disparate set of texts and compares and contrasts their content and genesis as well as in what framework the reader can approach them. As a work of comparative literature it is exemplary in its literary range and coherence. Although this is less the case with this final book, all three works reviewed here cover grounds that could delegate them to the hands of various academic specialists but all three due to their methodologies and scope should

be of general interest to literary and linguistic scholars of any stripe.

Books discussed

Alexander Marr, Raphaële Garrod, José Ramón Marcaida, Richard J. Oosterhoff, *Logodaedalus: Word Histories of Ingenuity in Early Modern Europe*. Pittsburgh: University of Pittsburgh Press, 2018. 358 pp. ISBN: 9780822945413

Andrew Hui, *A Theory of The Aphorism: From Confucius to Twitter*. Princeton and Oxford: Princeton University Press, 2019. 272 pp. ISBN: 9780691188959

John Gallagher, *Learning Languages in Early Modern England*. Oxford: Oxford University Press, 2019. 288 pp. ISBN: 9780198837909

Conflict of interest

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REVIEW ARTICLE

Visualizing the knowledge domain of multimodal discourse analysis (2009-2019): A bibliometric review

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Abstract: Different from traditional discourse analysis, multimodal discourse analysis (MDA), a systematic analysis of different semiotic modes, utilizing language, images, sounds in a discourse, emphasizes the coordination of both dynamic and static semiotic resources. This study presents the status quo and development trend of the research field through an objective, systematic, and comprehensive review of relevant publications available from the Web of Science Core Collection. Analysis techniques including a descriptive statistical method and a bibliometric method are used. The study quantitatively analyzes the publications in terms of general characteristics, geographical distribution, high-cited representatives, and topic discovery and distribution to illustrate the development and trend of MDA. The research findings are as follows: (1) In the past 10 years or so, international MDA research has presented a significant growth trend, with flourishing research output, interest and diversification of presented subjects; (2) New topics are constantly emerging, with research topics mainly focusing on the development of visual grammar, gesture, digital technologies, conference presentations, metonymy and metaphor, etc.; (3) Research focuses mainly on multimodality, semiotics, conversation analysis, critical discourse analysis etc.; (4) The article also listed a series of important and highly influential literature, countries, journals and authors on MDA during different periods. It is hoped that this paper can provide a reference for the further study of MDA.

Keywords: multimodal discourse analysis; bibliometric; Citespace; review

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1. Introduction

In the current age of multimedia, the function and mode for communication have changed dramatically, therefore it is acknowledged that meaning is rarely made via language alone. Instead, communication is conducted simultaneously through many kinds of modes, such as oral or written language, gestures, facial expressions, body language, tables, pictures, videos and so on

(Jewitt, 2016). This phenomenon is generally called ‘multimodality’, which is now linguistically investigated in the domain of multimodal discourse analysis (MDA).

The focus of linguistic research on discourse analysis has led to specialized research on discourse in various industries and fields, such as military discourse, classroom discourse, and consulting discourse. With rapid development of modern science and technology, multimodality has become a new trend attracting attention of discourse researchers. How to combine discourse with this new tide is an important issue for modern linguistic. It is necessary to investigate how multimodal discourse analysis plays a unique role in linguistic and what is the new interaction between the two.

Based on the search result from Web of Science Core Collection, this paper demonstrates the status quo of multi modal discourse analysis during the past 10 years (2009-2019) by conducting a visualization analysis. This systematic analysis illustrates the publication evolution over time and identifies current research interests and potential directions for future research, which can potentially assist researchers in keeping abreast of the research status and can also help monitoring new scientific and technological development in the research field to provide reference for the following research.

2. Definitions of key terms

2.1. Multimodal discourse analysis

Halliday views language as a social phenomenon to “fully understand the relationship between observed instances of language behavior and the underlying system of language” (Halliday, 1978: 8). As Halliday explains, “if you don’t know the system, then you cannot understand the text” (Halliday, 1978: 10). Halliday’s view of language was applied to fields that include discourse analysis, education, language development, second language development, computational linguistics, clinical linguistics, translation, language typology and the study of language in various domains, such as science, medicine, literature and the law. Multimodal discourse analysis is a branch derived from Halliday’s theory and has received much attention since its birth.

Multimodal discourse analysis is an approach to the discourse which focuses on how meaning is made through the use of multiple modes of communication as opposed to just language (Jones, 2012). Multimodal Discourse Analysis “holds that meanings are created in texts and interactions in a complex interplay of semiosis across multiple modes which include but are not limited to written and spoken language” (Cameron & Panović, 2014).

Jewitt (2016: 11) discusses three approaches to doing multimodality grounded in a distinct discipline, with a distinct theoretical and methodological outlook. They are conversation analysis, systemic functional linguistics and social semiotics. By comparing the differences between these three approaches (**Table 1**), it shows not all scholars working in these originating disciplines are interested in multimodality. For instance, many conversation analysts or systemic functional linguists focus on the study of ‘talk’ or ‘speech’. Yet within each of the three disciplines, scholars identify a substantial and growing body of literature and a community of scholars engaging with multimodal research. These bodies of work contribute to the thriving of multimodality and MDA.

Table 1. Mapping three approaches to multimodality: SFL, social semiotics and conversation analysis (Jewitt, 2016)

	Systemic Functional Linguistics (SFL)	Social semiotics	Conversational Analysis (CA)
Aims	Recognition of social functions of forms	Recognition of power and agency	Recognition of social order in interaction
Theory of meaning	Meaning as choice	Motivated sign	Sequentiality
History	European functionalism	SFL, critical linguistics, semiotics	American interactionism, ethnomethodology
Conceptualization of ‘means for making meaning’	Semiotic resource, mode	Mode, semiotic resource	(Semiotic) resource
Example representatives	O’Toole, Martin, Unsworth, O’Halloran	Kress, van Leeuwen	Goodwin, Heath, Mondada
Empirical focus	Artefacts, including texts and objects	Artefacts, mostly texts	Researcher generated video recordings of interaction
Method of analysis	Micro analysis of selected short fragments, corpus analysis, multimodal analytics	Micro analysis of selected short fragments, historical analysis	Micro analysis of (collections of) selected short fragments

Practical research has been the main direction in the field of multimodal discourse analysis in recent years, which makes MDA research develop in a mixed way of qualitative and quantitative research. At present, computer-assisted experiments are the main means of practical research with the supplement of a corpus-based approach. But most of them are short-term synchronic research, which cannot accurately reflect the historical development of multimodal discourse.

By adopting visualization analysis, this research aimed to track and find out the diachronic changing rules of multimodal discourse analysis. During this process, the theory, model or method of multimodal discourse analysis will be validated, adjusted, modified and improved dynamically at multiple levels. Its fundamental purpose is to better understand the application and development of multimodal discourse analysis in various fields.

2.2. Visualization analysis

In the era of Big Data, data visualization tools and technologies are essential to analyze massive amounts of information and help researchers better understand the current status of the field. Data visualization is a graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns of specific fields. This study attempted to realize the visualization of the collected data by using bibliometric methods.

Bibliometrics analyzes the impact of research outputs using quantitative measures. Bibliometrics complements qualitative indicators of research impact such as peer review, funding received, and the number of patents and awards granted. Together they assess the quality and impact of research. Researchers can not only use bibliometrics to provide evidence of the impact of the research outputs when applying for jobs, promotion or research funding but also find new and emerging areas of research. Besides, this method can also identify potential research collaborators and journals in which to publish.

This study intends to answer the following questions: (1) What is the general situation of

multimodal discourse analysis research since 2009? (2) What are the research hotspots of multimodal discourse analysis? (3) What is the trend of multimodal discourse analysis research?

3. Methods

3.1. Data collection

The Web of Science Core Collection, an abstract and citation database as well as an online scientific citation indexing service managed by Clarivate Analytics, which contains publications from the sciences, social sciences, arts and humanities, dating back to 1900. It was chosen as the database for collecting journal articles and reviews related to multimodal discourse analysis. Three rationales are listed to justify the choice. First, the Web of Science Core Collection, which contains Science Citation Index, Social Sciences Citation Index, Art and Humanities Citation Index, and an Emerging Sources Citation Index, is recognized as one of the world's leading multidisciplinary bibliographic databases, covering over 21,100 peer-reviewed, high-quality international scholarly journals (Web of Science Group, 2019). Researchers may search these indices selectively and set a custom time span, which is below the search boxes, to search. Second, it includes a relatively large set of journals specializing in discourse analysis as well as journals specializing in other disciplines that occasionally publish articles related to multimodal discourse analysis, such as *Discourse & Communication*, *Discourse & Society*, *Visual Communication*. Third, metrics covered include total publications, average citation per item, total citation count, etc., which allows researchers to extract bibliographic information, productive authors and prolific journals from their respective results as well as create citation reports for each of them. All these metrics support the researcher with an ideal data source to conduct this visualization analysis. The data was collected on the Web of Science Core Collection and the last visit was on July 1st, 2020. To collect the largest number and highest quality of relevant articles related to multimodal discourse analysis in the database, this study set the search configuration (Topic = multimodal discourse analysis, Document types = Article OR Review, Language = English and the Time span = 2009 to 2019). The search tool filtered the data automatically, with 590 articles and 5 reviews, collected as the input data. After the second filtration conducted by CiteSpace, the number of valid data was 578.

3.2. Analytical tool: CiteSpace

This study employed Citespace 5.5.R2, a freely available Java application for visualizing and analyzing trends and patterns in scientific literature which was jointly developed by Dr. Chaomei Chen of the School of Information Science and Technology at Drexel University, Philadelphia, PA, USA and WISE Laboratory at Dalian University of Technology. CiteSpace provides various functions to facilitate the understanding and interpretation of network patterns and historical patterns, including identifying the fast-growth topical areas, finding citation hotspots in the land of publications, decomposing a network into clusters, automatic labeling clusters with terms from citing articles, geospatial patterns of collaboration, and unique areas of international collaboration. It focuses on finding critical points in the development of a field or a domain, especially intellectual turning points and pivotal points (Chen, 2010).

In recent years, using the method of literature metrology research has gradually become the humanities and social science academic research of many scholars in important ways. In the study

of Wang and Yan (2019), 2,180 papers related to embodied cognition in the framework of linguistics were reviewed by using Citespace. Document co-citation analysis, citation burst detection, and betweenness centrality measurement were conducted to explore and determine the thematic patterns, emerging trends, and critical articles of the knowledge domain. Li and Jiang (2020) set out to conduct a dynamic visual knowledge mapping analysis of literature on Ecolinguistics with the help of bibliometric analysis software, Citespace and VOS Viewer. The article presented a whole skeleton of international literature on Ecolinguistics in six dimensions which have shed light on future research on Ecolinguistics. These previous research indicated the fastest accesses provided by Citespace are: (1) classic literature in the field and authoritative publications and experts in the field; (2) the hot spots and latest progress of this field; (3) the development process and change of the author's research ideas; (4) hot research units, hot institution and hot countries in this field; (5) understanding of the evolution process of frontier problems in this discipline or knowledge field. All of these showed the necessity and superiority of using this tool.

In this study, Citespace was used to find out the critical path and knowledge turning point of the evolution of the MDA discipline domain and to conduct a visualization analysis of the valid records collected from the previous procedure. The study quantitatively analyzed the publications in terms of general characteristics, geographical distribution, high-cited representatives, and topic discovery and distribution to grasp the foci and trend of MDA.

4. Results

4.1. General characteristics

According to the statistical distribution of the published papers (**Figure 1**), we can divide the past ten years research into four phases: (1) Phase 1: A period of slow growth (from 2009 to 2015). In this stage, the study on multimodal discourse analysis (MDA) was at an initial level, where the analytical techniques and tools were not yet mature, so the developmental process in this field was relatively slower than the later stage. (2) Phase 2: A period of rapid growth (from 2015 to 2016). The MDA welcomed its spring, with prolific researchers in different disciplines and abundant scientific research achievements. (3) Phase 3: A period of reason (from 2016 to 2017). The research in this field has emerged a transient saturation. After experiencing rapid development, academia had higher requirements on MDA research perspective, research content and research methods. (4) Phase 4: A period of outburst (from 2017 to 2019). MDA experienced another breakthrough after two years of brew of international and interdisciplinary cooperation.

What stands out in **Figure 2** is the continual growth of citation (**Figure 2**), with the production of multimodal discourse analysis (2009-2019) started at a low point of 5 in 2009 and peaked of 876 in 2019. It is the development of technology and the process of globalization that solves a major problem: the complexity and time-consuming nature of MDA analysis, particularly for dynamic texts such as videos and websites, which prompted this continuous heat and attention of this field. As people, processes, data and things become increasingly interconnected in the present world, the application of MDA theory to solve real problems in the world is becoming an exciting reality.

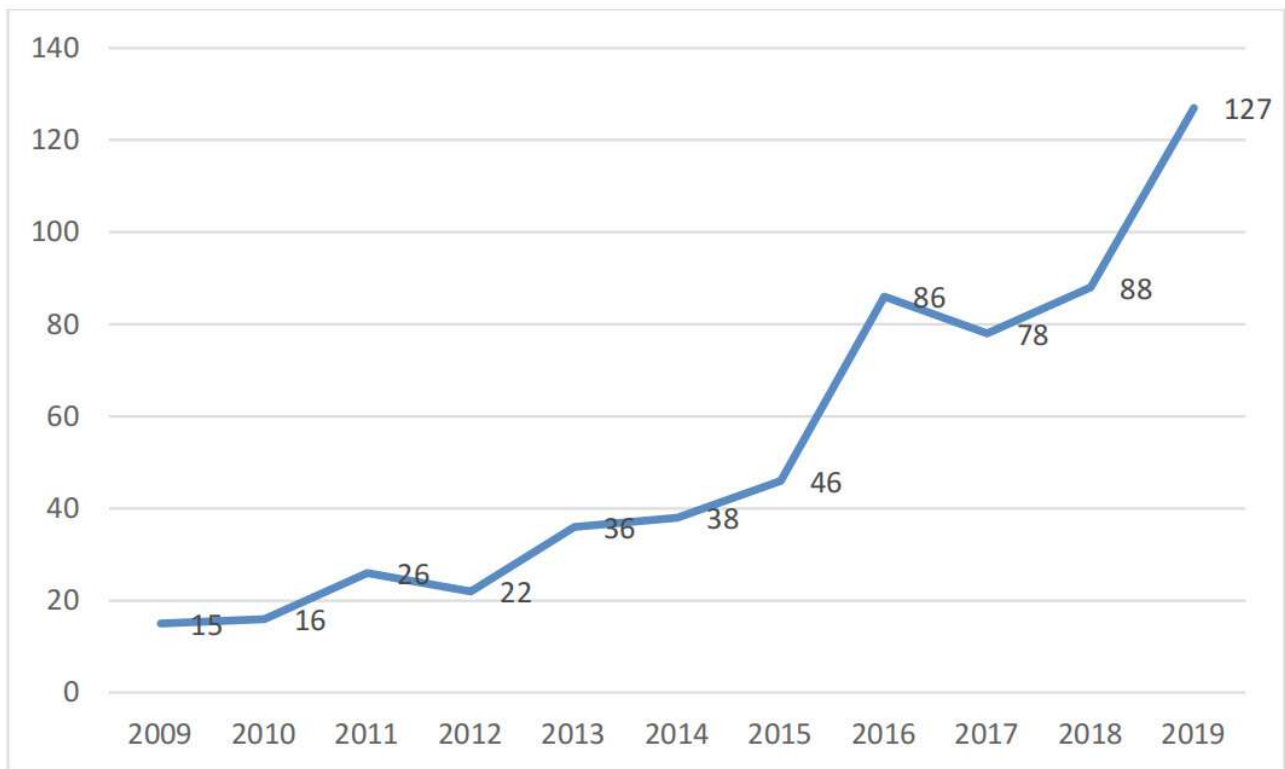


Figure 1. Sum of times published per year.

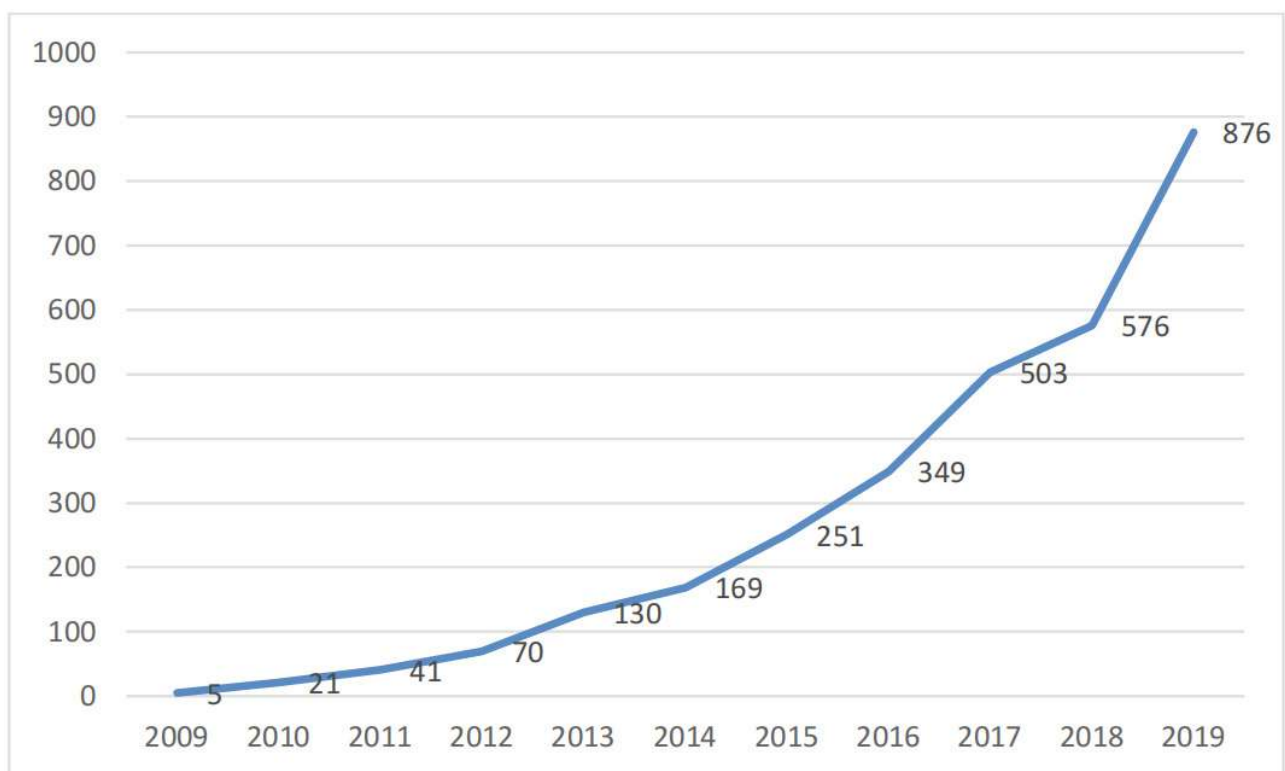


Figure 2. Sum of times cited per year.

4.2. Geographical distribution

The cooperation network represents the delicacy degree of a certain research field, and the more frequent the cooperation, the deeper the discipline development. The size of the nodes in the collaboration map indicates the number of papers published by authors, institutions or countries, and the links between them reflect the strength of their partnership (Li & Chen, 2016).

By using the cluster analysis method in CiteSpace, the status of international multimodal discourse analysis is carried out by a scientific cooperation network analysis. Figure 3 is the macro co-country network. In the past ten years, while Spain and China were getting fast growth in the study of MDA, the top-four countries that dedicated their efforts in this field were the USA, UK, Australia and Sweden. Germany, Singapore, South Africa and Canada are also in the top 10 list. The largest volume of articles was published in the United States (119 articles), followed by the United Kingdom (69 articles), Australia (61 articles), Sweden (38 articles), Spain (36 articles), China (35 articles), Germany (25 articles), Singapore (21 articles), South Africa (16 articles) and Canada (13 articles).

Besides, it is well known that multimodal discourse analysis is an interdisciplinary field as well as an international communicative platform which prompt collaboration and cooperation among countries. For example, American scholars shared their research achievements with Chinese, Japanese, Canadian while Australian with scholars from Denmark, Singapore, UK. In contrast with the developed countries, it is found that developing countries are much less willing to establish a cooperative relationship with other countries, with lesser lines and smaller size in published articles and reviews. Through mapping the cooperation network among author and country, it concluded that most of the researchers are from the United States, the United Kingdom and Australia; among the five clusters in the country cooperation network, the largest cluster was multilateral, members include Australia, Spain, Denmark, Germany, South Africa and so on. The second cluster was centered on the United States, including Poland, Singapore, Brazil and Finland. The third was centered on China, and the main members are Sweden, New Zealand and Pakistan and Slovenia.

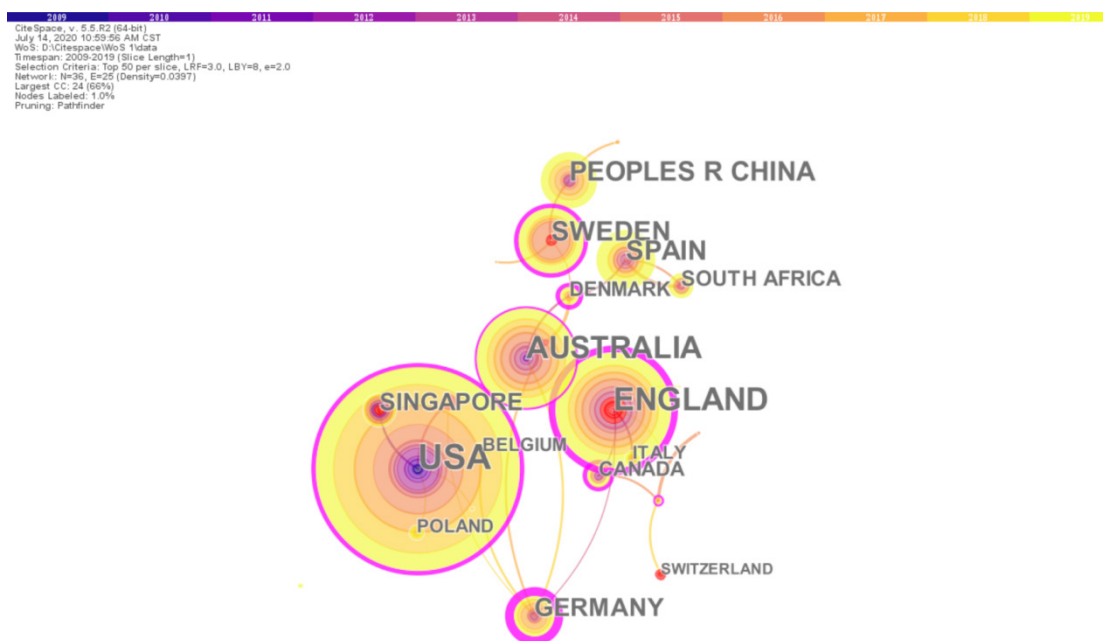


Figure 3. Geographical distribution.

4.3. High-cited representatives

Sorted by the total citation count, the top ten periodicals are *Critical Discourse Studies*, *Social Semiotics*, *Discourse & Communication*, *Discourse & Society*, *Visual Communication*, *Journal of Pragmatics*, *English for Specific Purposes*, *Text & Talk*, *Argumentation*, *Discourse Context & Media*. The total publications and average citation per item are also listed (**Figure 4**). With the highest 63 total citation count achieved by *Critical Discourse Studies*, 19 realized by both *Social Semiotics* and *Discourse & Communication*, these figures can help us find out the leading periodicals in multimodal discourse analysis easily and provide researchers with clearer perspectives when they are prepared to submit their writings for publication.

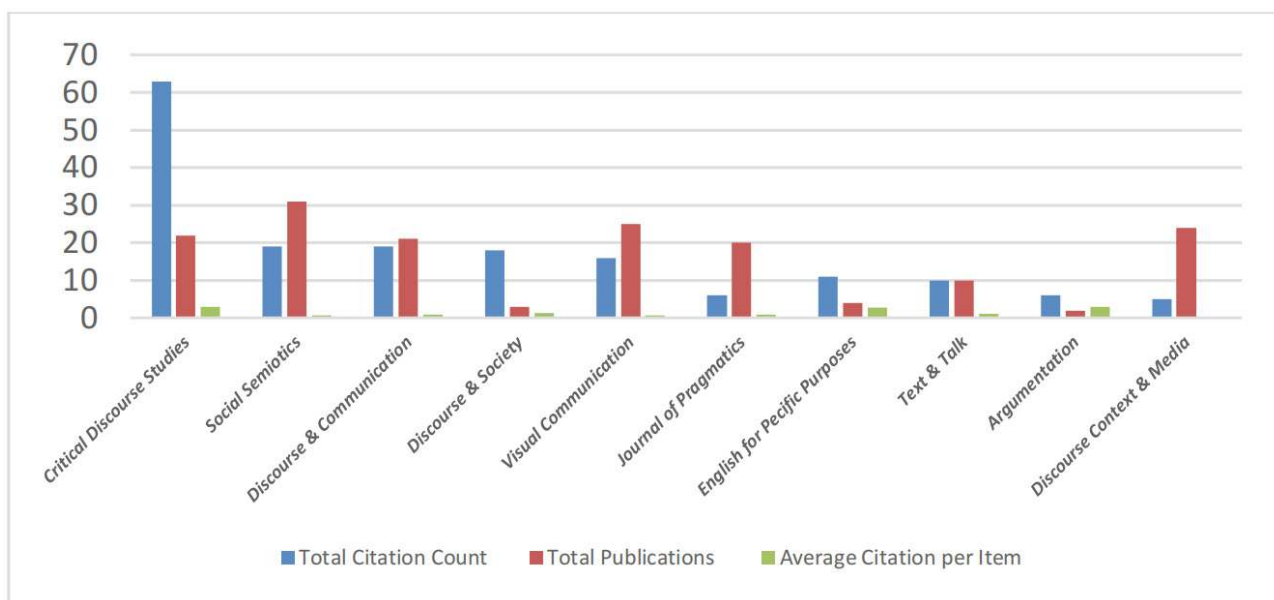


Figure 4. High-cited journals.

The citation bursts are nodes that direct those papers whose citation frequency has suddenly increased in the time dimension. The citation nodes that appear suddenly are indicated in red. The node with high emergence means that these authors or literature will receive extra attention in the corresponding time interval, to a certain extent, it represents the research frontier and hot issues of the subject in the corresponding time interval (Chen, 2010). Through the investigation of the cited literature, it is possible to track the hotspots of a certain discipline and research field and their diachronic evolution. **Figure 5** and **6** shows the Top 10 cited authors with the strongest citation bursts and Top 5 references with the strongest citation bursts, which may provide the novice with references. However, to understand the hotspots of the research more intuitively, it also needs to be presented through keyword knowledge graphs.

The knowledgebase is a collection of scientific literature repeatedly cited by scientists in a certain field during the research process, which is classic scientific literature in a certain research field. Any discipline needs to acquire, understand, and absorb the knowledge base before it can carry out in-depth research on related topics. Regarding the co-cited map of the international MDA research literature, see **Figure 7** and **8**.

Top 10 Cited Authors with the Strongest Citation Bursts

Cited Authors	Year	Strength	Begin	End	2009 - 2019
BALDRY A	2009	3.0329	2009	2014	
GOODWIN CHARLES	2009	2.5821	2009	2011	
LEVINSON S C	2009	3.0813	2009	2010	
VANLEEUVEN T	2009	6.2954	2009	2014	
HALL S	2009	3.8825	2009	2014	
HALLIDAY MAK	2009	4.2928	2010	2015	
LEMKE JL	2009	4.4728	2010	2016	
IEDEMA R	2009	3.8096	2010	2013	
HEATH C	2009	3.4226	2011	2014	
ROTH WM	2009	2.9327	2011	2014	

Figure 5. Top 10 cited authors with the strongest citation bursts.

Top 5 References with the Strongest Citation Bursts

References	Year	Strength	Begin	End	2009 - 2019
VAN LEEUVEN T, 2005, INTRO SOCIAL SEMIOTI, V0, P0	2005	8.3897	2009	2013	
KRESS G, 2006, READING IMAGES GRAMM, V0, P0	2006	16.7268	2009	2014	
HALLIDAY MAK, 2004, INTRO FUNCTIONAL GRA, V0, P0	2004	6.1676	2009	2012	
KENDON A, 2004, GESTURE VISIBLE ACTI, V0, P0	2004	4.4715	2009	2012	
BALDRY A, 2006, MULTIMODAL TRANSCRIP, V0, P0	2006	7.5256	2009	2014	

Figure 6. Top 5 references with the strongest citation bursts.

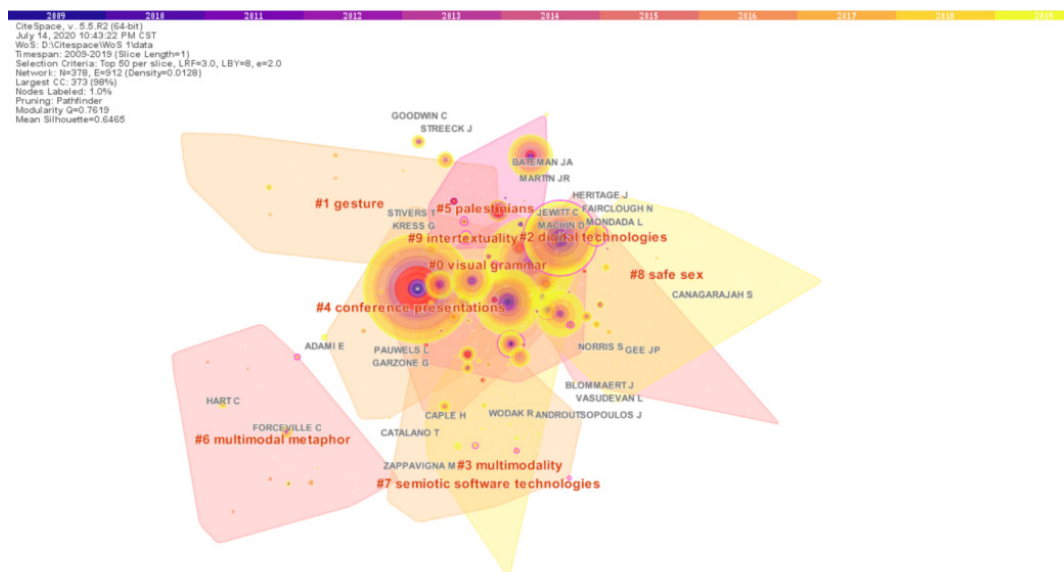


Figure 7. Co-citation network associated with cited author.

Figure 7 visually presents the visualization results of highly cited author in international MDA research. The annual rings in Figure 7 represent cited authors, and the size of the annual rings corresponds to the number of citations. The color of the year ring represents the cited history of the cited authors. The thickness of the annual ring is proportional to the number of citations in the corresponding time zone. The connection between the annual rings reflects the co-citation strength. The color of the line represents the year in which the co-occurrence relationship first occurred. The color of the line represents the year in which the co-occurrence relationship first occurred. The node label font size reflects the intermediary centrality of the node literature (Chen, 2010). Through the measurement of the modularity (Q value = 0.7619) and the mean silhouette (S value = 0.6465), 10 clusters were extracted, according to the cluster size: visual grammar, gesture, digital technologies, multimodality, conference presentations, Palestinians, multimodal metaphor, semiotic software technologies, safe sex, and intertextuality.

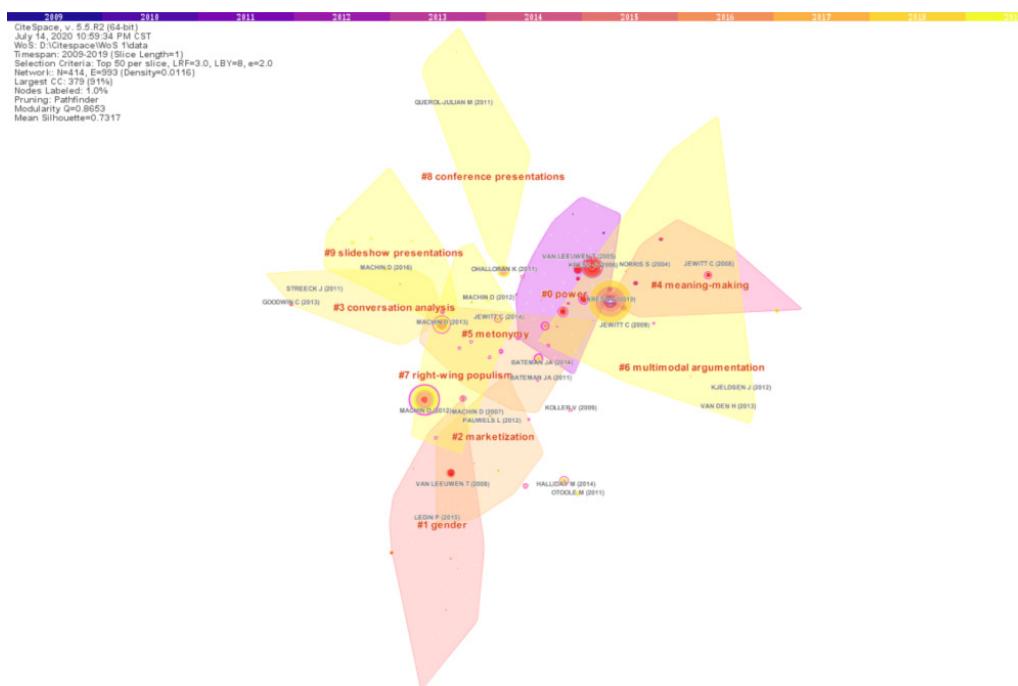


Figure 8. Co-citation network associated with reference.

Figure 8 visually presents the visualization results of highly cited literature, turning point literature and surge literature in international MDA research. Through the measurement of the modularity (Q value = 0.8653) and the mean silhouette (S value = 0.7317), 10 clusters were extracted, according to the cluster size: power, gender, marketization, conversation analysis, meaning-making, metonymy, multimodal argumentation, right-wing populism, conference presentation and slideshow presentations.

4.4. Topic discovery and distribution

Being the basis of multimodal discourse analysis, the heated discussion about multimodality, multimodal discourse analysis and discourse analysis is never faded. Figure 9 present the keyword co-occurrence charts, from which we can summarize that “multimodal discourse analysis” (with a frequency of 29), together with its highly related terms including “multimodality” (168), “discourse” (117), “language” (53), “discourse analysis” (43), “critical discourse analysis” (29), “multimodal analysis” (21), and “discourse analysis” (40), is the main topic of global research

related to multimodal discourse analysis. In Mondada's (2009) article, for example, it dealt with the multimodal and spatial arrangements of the participants within pre-beginning and opening sequences, i.e. sequences taking place before the actual opening of social interaction and achieving the conditions for an imminent opening. The research stays at a face-to-face level and gestures and space were highlighted. Bateman and Wildfeuer (2014) articulated a model of discourse pragmatics that is sufficiently general to apply to the specifics of visually communicated information and show this at work concerning several central aspects of visual narrative. Other high-frequency keywords including "systemic functional linguistics" (11), "conversational analysis" (26), "semiotics" (15), and "social semiotics" (28) reflect the theoretical levels that were mainly discussed. Bednarek and Caple (2014) introduced a new framework for the analysis of news discourse to scholars in Critical Discourse Analysis (CDA) and beyond which emphasizes the importance of news values for linguistic analysis and encourages a constructivist approach to their analysis. The emerging studies on "multimodal critical discourse analysis" (23) reflect a recent trend in discourse studies which is the integration of critical discourse analysis and multimodal discourse analysis. Extended keywords such as "language" (51), "gesture" (25), "identity" (22), "gender" (22), "communication" (21), "organization" (20), "literacy" (19), "social media" (18), "English" (16), "talk" (15), "representation" (15), "politics" (15), "image" (13), and "students" (11) reflect the research content of these articles. Blom and Hansen (2014) mapped the use of forward-referring headlines in online news journalism by analyzing of 100,000 headlines from 10 different Danish news websites. With the development of social media, scholars started to pay a contribution from off-line communication to on-line communication. Zappavigna (2016) investigated the visual choices that are made in the images chosen to construe relationships between the represented participants, the photographer, and the ambient social media viewer.

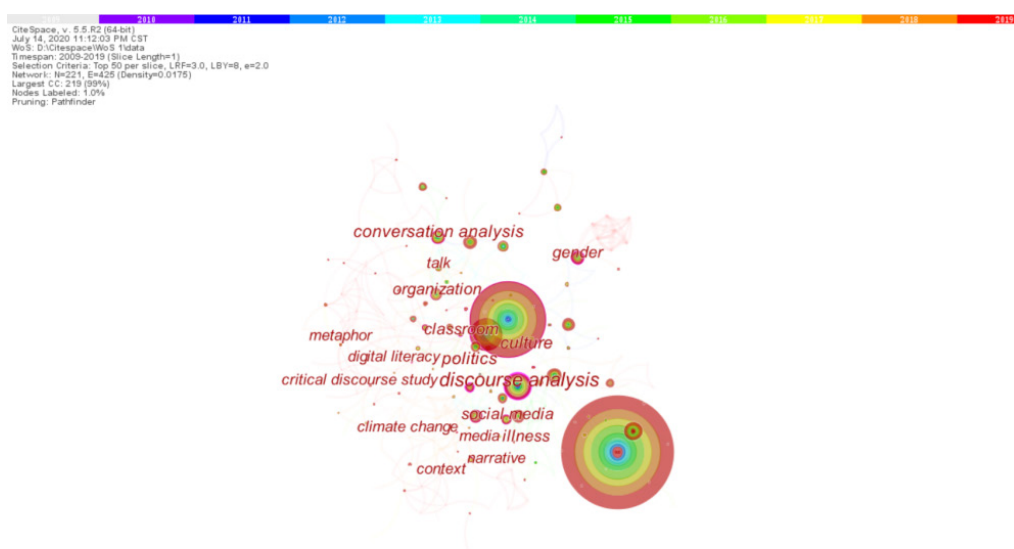


Figure 9. Keywords distribution.

5. Conclusion

Scollon and Levine (2004: 4–5) has concluded that, in terms of multimodal discourse analysis, the future including multimodal discourse analysis will focus on the role of the Internet in discourse

analysis, social activities, or multimodal discourse analysis in the study of social interaction, education activities under the contextual multimodal discourse analysis, institutional discourse (workplace) of multimodal discourse analysis. Van Leeuwen (2011: 679) believed that multimodal discourse analysis is an emerging field with broad development space, so it is impossible to get a list for the future development of multimodal discourse analysis. However, he stressed that the future development of multimodal discourse requires three elements: self-reflexivity, cultural diversity and engaging with technology. The statistical and descriptive results of this study on the hot spots and future development trends of multimodal discourse in the past 10 years also partially confirm the predictions of these scholars.

To better understand the dramatic increase in global research related to multimodal discourse analysis, a visualization review of 578 relevant journal articles published between 2009 and 2019 was conducted, indexed in the Web of Science Core Collection. The study can draw a number of conclusions from the results and implications for future research. (1) With 578 papers were published, 60 papers per year on average to explore the issues and challenges they face, the number of the yearly article volume, showed that the research on MDA has been on the increase overall in the past 10 years or so, indicating that this field has gained great attention internationally. The discipline distribution and journal co-citation displayed a diversified feature, showing that emerging topics related to MDA continue to emerge and the discipline field has been expanded. It can be seen that the study of multimodal discourse analysis has gradually become a research hotspot and focus in the academic circle at this stage. (2) Through visualizing the network of keywords co-occurrence, reference co-citation and author co-citation, and calculating the related values of different clusters, the new research themes could be summarized, including the development of visual grammar, gesture, digital technologies, conference presentations, metonymy and metaphor, etc. (3) The research front hotspots mainly focused on multimodality, semiotics, conversation analysis, critical discourse analysis, etc. (4) The article also listed a series of important and highly influential literature, countries, journals and authors on MDA during different periods. It was found that global research related to multimodal discourse analysis has been generated primarily from the USA, the U.K. and Australia, all of which are top developed countries with greater history and experience in MDA research. These facts also prove that the three countries have not only produced most high-yielding research institutions and fruitful authors, but also published most productive journals. In contrast, efforts made by developing countries, except for China, are largely invisible, as shown by the analysis of leading countries. Therefore, researchers from developing countries, especially Asian countries such as India and Saudi Arabia, which hold a large population and take an active role in the background of international cooperation and collaboration, should make greater effort to explore the possibility of researching multimodal discourse analysis in their countries. This will both deepen the understanding of exotic multimodal discourse analysis and complement the existing literature from the perspective of sending countries.

As an approach to the discourse which focuses on how meaning is made through the use of multiple modes of communication as opposed to just language, MDA is getting more important because we get much more time being stuck in-home, receiving explosive information in different modes under the impact caused by COVID-19. So, additional work is needed to trace the change of multimodal discourse and create a possible innovation in this discipline.

Based on this conclusion, the latter scholars should improve the popularity of the research by

linking the research projects with hot topics. At the same time, future research should also pay attention to the emerging trends which are still in the initial stage, and further expand the scope of research in this field.

Conflict of interest

No conflict of interest was reported by the author.

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REVIEW ARTICLE

A critical review on the study of threatening in English

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Abstract: Despite the fact that threatening in languages is common in ordinary verbal communication, it has not received much attention from academic studies because of its “negative” nature. Muschalik’s monograph *Threatening in English: A Mixed Method Approach*, mainly based on the theory of Face Threatening Speech Act by Brown and Levinson (1987), takes 301 categories of threatening expressions in judicial proceedings as the corpus with qualitative and quantitative methods, brings a new perspective for pragmatic research, especially speech act research, and deepens people’s understanding of relevant issues. Initiated by Muschalik’s book *Threatening in English: A Mixed Method Approach*, the paper is to make a critical review on the studies of threatening in English and propose some new directions for the study of threatening in languages.

Keywords: speech act; face threatening; pragmatic effect; judicial

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1. Introduction

Since Wittgenstein (1953) presented the famous idea that “the meaning of language lies in its use”, usage-based view on language began to come into the scope of language philosophers. For example, Austin (1962)’s *How to Do Things with Words* put forward speech act theory and Searle (1969)’s *Speech Acts: An Essay in the Philosophy of Language* made some efforts to revise Austin’s speech act theory. Thanks to Austin (1962) and Searle (1969), the study of doing things with words has become a significant topic in pragmatics. However, in the academic research, although threatening by language is regarded as an important speech act in our daily language, scholars have paid little attention to it. Julia Muschalik’s monograph *Threatening in English: a mixed method approach* (2018. Amsterdam/Philadelphia: John Benjamins Publishing Company, p. xiv+246), based on 301 US judicial litigation cases (Corpus of Judicial Opinion), applies multiple research methods to conduct a systematic research on threatening expressions in English, which is not only a new idea for the study of threatening words, but also a new development in pragmatics, especially in

speech act theory. Based on previous studies, taking 301 judicial litigation cases in the United States as a corpus, this book is divided into six chapters to systematically study the forms and functions of threatening. Initiated by Muschalik's monograph *Threatening in English*, the paper is to make a critical review on the studies of threatening in English and propose some new directions for the study of threatening in languages.

2. Literature on threatening in language

Of the previous studies on threatening in language, there are two major approaches, which are from the perspective of speech act theory and from an interdisciplinary approach respectively.

2.1. From speech act theory

In 1998, the paper "Threatening Revisited" by Fraser attempts to identify common formal features of threats. Fraser (1998: 165) notes that "a threat typically takes the form of a declaration, with the speaker as the agent, with a condition possibly present". For example,

(1) I'm going to get you.

(2) I'll punish you one day.

In examples (1) and (2), the agent is I. The present condition of example (1) is that the agent (the speaker here) will seize the addressee, which can be regarded as the present condition of threatening. The present condition of example (2) is that the agent (the speaker here) will chasten the addressee, which can be viewed as the present condition of threatening. Examples (1) and (2) can be regarded as "most direct verbal threats", which means that "either the addressee is to satisfy some condition(s), or the speaker will bring about an unfavourable state of the world" (Fraser, 1998: 167).

As Muschalik (2018: 2) points out, there is a predominantly functional understanding of speech acts in general and threatening in particular in the field of pragmatics. Threats are issued "in order to make [a target] behave or feel in a particular way" (Storey, 1995: 74) or to "[coerce] and [manipulate] the target into (not) doing something" (Limberg, 2009: 1376).

(3) Get off my back, will ya? I told you I'd do it when I got the time.

(4) I can't take you anymore. Give me more space.

The addressers of examples (3) and (4) are to make the addressees behave in a particular way, which is to make the addressees leave the addresser alone otherwise the addressees will be punished or will take the consequences. As a result, Storey (1995) and Limberg (2009) put great emphasis on the study of the function of threatening, and put little efforts on the concern of the forms of threatening because forms of threatening usually are hard to describe.

Davis (1997) and Gales (2010) conducted some applied studies on threat assessment, focusing on linguistic features that are seen as possibly revealing the seriousness of a threatening message, such as verbal aggression markers and authorial stance (cf. Muschalik, 2018: 4). They believe that there is a hierarchy of threat in ordinary communication. For instance,

(5) I will kill you.

(6) I will not let you go out to play.

The seriousness of threat of example (5) is much higher than that of example (6) because the former will take the life of the addressee but the latter is to just punish the addressee by taking his or her play time.

2.2. From interdisciplinary perspective

Taking both sociological and psychological perspectives, Beller et al. (2005) and Hepburn & Potter (2011) have focused on the use of threats as an instrument of social power and influence and have highlighted the conditional nature of threats (cf. Muschalik, 2018: 4). For instance,

(7) NORTH KOREA has vowed to counter “nuclear with nuclear” against the US and committed to building up its “nuclear war deterrent”.

(8) Trump said that he would retaliate if the Tehran government struck again at U.S. interests in Iraq.

The threats from examples (7) and (8) can be regarded as the instrument of social power and influence, in which the addressers are to issue the instrument to threaten the addressees to stop doing something otherwise the addressees will take the serious consequences.

2.3. Some shortcomings of previous studies

As is shown above, it's in the year of 1953 that Wittgenstein (1953) proposed the usage-based language view. From that time on, scholars both in language philosophy and in linguistics began to take notice of language use from the perspective of linguistic studies. Unfortunately, despite the fact that threatening in languages is common in ordinary verbal communication, it has not received much attention from academic studies because of its “negative” nature. Take two significant scholars in the study of speech act as examples. Austin (1962: 150) points out that these classes of utterance, classified according to their illocutionary force, by the following more-or-less rebarbative names: Verdictives, Exercitives, Commissives, Behabitives, Expositives. By taking a critical view on Austin (1962), Searle (1969) found some problems in Austin's classification of speech act and reclassified the speech act into five categories: Assertives, Representatives, Directive, Commissives, Expressives, Declarations. But both Austin (1962) and Searle (1969) did not pay attention to threatening in language, which is an important ordinary language phenomenon in daily communication.

As Muschalik (2018: 3) points out that the focus of most previous studies on threatening was not on simply creating an inventory of the linguistic features in threatening utterances, but on an examination of the precise contexts in which speakers use threats. Muschalik (2018: 4) found that the scarce empirical studies on threatening language reveal that a number of expectations about the frequency of particular linguistic features in threats are not confirmed by corpus-based studies.

In short, the previous studies on threatening in languages are in some way scarce, which means that most studies are not comprehensive because they do not take an overview on both forms and functions (such as social functions) of threatening in languages. Fortunately, Muschalik's

Threatening in English: a mixed method approach, based on 301 US judicial litigation cases (Corpus of Judicial Opinion), applies multiple research methods to conduct a systematic research on threatening expressions in English, which can be viewed as an interesting and enlightening probe into threatening in English.

3. Major contributions from Muschalik's *Threatening in English*

Taking 301 judicial litigation cases in the United States as a corpus, Muschalik's *Threatening in English* can be divided into six chapters to systematically study the forms and functions of threatening. This section offers a brief introduction to the major contributions made by Muschalik's *Threatening in English*.

Chapter one mainly introduces the previous studies of threatening and the main research idea of this book. By probing previous researches about threatening in languages, the author firstly points out that due to the heterogeneity of syntactic form and the uncertainty of semantic content, its definition has aroused a lot of controversies (Fraser, 1998; Solan & Tiersma, 2005). Previous studies are mainly based on a functional perspective, and threatening is regarded as a special category of speech act. So, the threatening can be defined as:

- (1) to make a target object behave or feel in a specific way (Slorey, 1995: 74);
- (2) or to coerce and manipulate the target into not doing something (Limberg, 2009: 1376).

Muschalik admits that this definition relegates the form of threatening in languages to a secondary position, which deserves to reconsider. In addition, the author also introduces the study of threatening by Gales (2010). With 103 subjects, Gales (2010) examines the prototypicality of threatening through experiments, which includes direct threats, conditional threats and veiled threats. According to the common usage of threatening, their shares of percentage are 54% of conditional threats, 37% of veiled threats and 9% of direct threats. This research approach inspired Muschalik's interest in verbal threatening, who explores the relationship between empiricism and pragmatics. Undoubtedly, the studies of pragmatics in the recent decades have demonstrated a tendency of empiricism, in which research methods have been inspired by corpus linguistics and an experimental paradigm has been conventionalized, that is to say, the research method in pragmatics has largely depended on corpus. However, a variety of scholars have found that some important expressions in language may not be covered even in a large corpus, which will cripple the strength of corpus-driven pragmatic research. This is also the inadequacy of corpus-driven pragmatic research. Especially for studying speech acts, some corpora do not fully reflect the current state of language (Jucker, 2009: 1620). Muschalik suggests that the previous researches on threatening-centred case analysis have made some progress in the field, but they, to some extent, have neglected the significance of corpus-driven empirical research. This is also the academic gap to be filled in this book.

Chapter two discusses the basic concept of threatening and other related issues. As for the definition of threatening, the author firstly cites the definitions of threat utterance and the act of threatening from *The Oxford English Dictionary*, and then suggests that most definitions are not based on actual language data but on reflections of linguistic expressions. After analyzing the illocutionary act of threatening, Muschalik proposes the idea that threatening in languages needs to

meet three conditions:

- (1) The speaker has the motivation to threaten the hearer;
- (2) The speaker believes that this action will lead to the hearer in a difficult position;
- (3) Through putting the hearer on the awareness of the condition (1), the speaker can threaten the hearer.

And then the author points out that it becomes necessary to inspect the threatening in languages both from two aspects: form and function. Based on the former researchers and in combination with the author's own research perspective, the author analyzes systematically the form of the threatening: conditionality, futurity, violent verbs, taboo words and weapons. Furthermore, the author inspects the function of threatening from two dimensions systematically: (1) power and demands: threats as a tool of manipulation; (2) power and face: threats as a form of impoliteness. And this chapter also discusses context problem of threatening from two sides: (1) power and distance as social context; (2) the blend of power and distance between the speaker and the hearer.

Chapter three is the description of data collection and research methods. There are mainly two paradoxes in previous studies when collecting corpus: the inductive method of collecting corpus may lose the authenticity of the corpus; the corpus collected in the original way may not cover all language phenomena. As for the corpus of threat words, Leech (1983: 105) said frankly, threat and other conflicting words are marginal language phenomena in communication. Culpeper (2011: 9) harbors the viewpoint that impolite expressions in daily language are relatively scarce in daily context, and it is difficult to collect data in this respect. Therefore, it is very hard to find corpus of threats even in the American Contemporary English Corpus (COCA) (see Kasper, 2008: 282). Consequently, the study of threats based on randomly collected corpus and existing corpus has the problem of missing data, which should be excluded. Thus, the author has systematically demonstrated the feasibility of using 301 cases in U. S. judicial proceedings as the research corpus.

Chapter four explores the form of threat. The prevailing opinion in the literature appears to be that a threat's form is largely indeterminate. However, some scholars have pointed out that threats have typical formal features and even rigid patterns, both of which have not yet seen any empirical verification. Based on the corpus of Judicial Opinions, this chapter analyzes and demonstrates the typical formal features of threat, trying to answer three research questions:

- (1) Are there typical features that occur in the majority of threats and do these features correspond to the generalizations we find in the literature?
- (2) How frequent are the features and how are they distributed? Is any feature so frequent as to reach the status of a pervasive conventional feature of threatening language?
- (3) How do the features relate to each other, i.e., do some of them regularly occur together? Are these patterns meaningful?

The author has systematically analyzed the formal features of 301 categories of threat by analyzing 3612 specific expressions and taking 10 variables as investigation units, which are respectively: CONDITIONALITY, FUTURITY, TYPE OF VERB, AGENT, PATIENT, PP_I, PP_YOU, TABOO LANGUAGE, MENTION OF WEAPONS, RELATIONSHIP OF THREATENER

AND TARGET. Through the analysis, the author answered the above three research questions:

(1) There are typical features that occur in the majority of features, but these features don't correspond to the generalizations we have found in the literature.

(2) The frequency of these formal features is different, and some features are so frequent as to reach the status of a pervasive conventional feature of threatening language.

(3) Formal features are interrelated to form a certain pattern, and the pattern itself is meaningful.

Chapter five discusses the function of threats. Illocutionary force of threats is one of the focuses of Speech Act Theory, which has been described a lot in the current literature, but not much based on the real corpus. This chapter systematically elaborates on the function of threats on the basis of 301 Corpus of Judicial Opinion. Four research questions on the threats' function are proposed in the chapter:

(1) Can existing candidates for functions of threatening be attested in the present data?

(2) Can the contexts in which speakers threaten be categorized?

(3) Are contextual differences reflected in the form of the threats?

(4) Can the form of a threat serve as a predictor of its function?

Combining with the features of the form of threats, which have been addressed in chapter four, the author, supported by the corpus, analyzes the function of threats from three aspects:

(1) assessing the threatening of Pre-event and Post-event;

(2) manipulative and retaliative threatening;

(3) the form as a predicator of function.

This chapter also answers the above four research questions respectively:

(1) The corpus of this research can mostly support the existing candidates for functions of threatening;

(2) The contexts of threatening can be assorted;

(3) The diversities of contexts are in connection with the form of threats;

(4) Pragmatic functions of threats can be almost calculated by the form of threats.

Here, it is necessary to point out that there are two major functions of threatening in language.

(1) manipulation;

(2) retaliation

For instance, the threats in examples (9) to (11) all have a manipulative function.

(9) If you are afraid for Alexander and his life in this case you must do right for your son, you must pay.

(10) You better not snitch or tell.

(11) Sarvjit. If ur a government witness signal me by not responding to this message. But if ur a friend call me.

The threats in Examples (12) to (14) all have a retaliative function.

(12) Merilyn McClure, the crimes that you have committed on carries a death sentence. So that what you have coming is death. You are not going to get away.

(13) I'm going to get you for lying in court, you fat bitch.

(14) I'll be the one to get you, no matter how long it takes me. If I don't get you, I will get Iris or Christie or whoever close to you

In short, Muschalik (2018: 177) restresses the basic idea about the two functions of threatening in language.

The results confirm our assumption that features are distributed differently across the two functions. Not all of the effects that were found proved to be statistically significant, but tendencies were nonetheless visible. It was found that there is a slight disposition for manipulative threats to contain conditional language, futurate expressions with reduced predictive strength, such as will, and even more often no futurity. Furthermore, manipulative threats more frequently contain non-violent verbs and both agent and patient of a potential future action are not explicitly referenced. Threats with this function appear to be more frequently hearer-oriented or directive.

Chapter six is a summary, which mainly explains major points of this research, summarizes the “pair” bond between the form and function of threats based on the Speech Act Theory. This chapter emphasizes communicative strategies of threats and further stresses the view that the form of manipulative threats is relatively fuzzy while that of retaliative threats is rather direct. It also analyzes the potential risks and advantages possibly initiated by threatening in language. Muschalik (2018: 182) restresses the significance of the study:

In order to incorporate an aspect of social context into the analysis, it was further examined whether the relationship of threatener and target influences the form of threats. The findings suggest that the relationship has some influence on the form of threats, but the nature of the effect was not always conclusive, with one exception; the common assumption that less powerful speakers less often utter threats. This major finding points out one significant aspect about the relationship between social power and threatening in languages. At last, this chapter indicates the probable development approach of the threat research.

4. A comment on Muschalik's *Threatening in English*

From the literature of threatening in languages, we reach the conclusion: despite the fact that threatening in languages is common in ordinary verbal communication, it has not received much attention from academic field because of its “negative” nature. For instance, the number of papers on threatening in Chinese from CNKI is only eight up to July 15, 2020, which is a very small number compared with the studies on other speech acts. So, Muschalik's *Threatening in English*

published in 2018 has become a significant achievement for the study of threatening in languages. Muschalik, mainly based on the theory of Face Threatening Speech Act by Brown and Levinson (1987), takes 301 categories of threatening expressions in judicial proceedings as the corpus and conducts an empirical study on threatening in English. Muschalik, by applying qualitative and quantitative methods, brings a new perspective for pragmatic research, especially speech act research, and promotes the understanding of relevant issues. Generally speaking, five pieces of strength of Muschalik's study are concluded as follows.

First of all, Muschalik's *Threatening in English*, based on present conditions, reviews the historical research of threats and shows the new direction of its research. The author takes the historical research of threatening in languages as the main line, together with the historical research of modern pragmatics, especially the speech act theory, which systematically explores the historical studies on threatening in English. Besides, the author points out the shortcomings and problems of the current research on threatening in languages, which covers a wide-range perspective, from theoretical aspect to corpus collection, from research methods to research questions as well. Furthermore, based on the speech act theory, Muschalik's *Threatening in English* makes a great promotion on the study of speech act theory and threats, using big data with 301 categories of threatening in English from American judicial proceedings as research corpus. What's more, in the last part of Muschalik's *Threatening in English*, the author explores the possible directions of research on threatening in languages.

Secondly, the author puts the theory of the unification of linguistic form and function into practice, which shows innovativeness on research methods:

(1) attempts to infer pragmatic functions of threatening through examining its form;

(2) provides new methods for selecting and analyzing corpus in pragmatic studies, which particularly deal with the threatening form and functional features from qualitative and quantitative aspects.

All of these emphasize that linguistic form and function should be unified, so that research methods should not only be based on mass data but also contain qualitative analysis to achieve dialectical unity between qualitative and quantitative aspects.

The third strength of the study lies in the scientific use of specific corpus. Muschalik holds that semantic and functional features of threatening haven't yet been testified in corpus, which has resulted in the lack of corpus study on threatening in languages. Therefore, the corpus-based method applied in the study is in line with linguistic studies against the background of mass data. The author admits that there are four advantages based on the collection of 301 categories of threatening in English in judicial opinions:

(1) authenticity in the corpus from judicial opinions.

(2) representativity of the corpus, in which 301 categories of threatening in English involve not only serious criminal cases, but also trivial life disputes.

(3) being pragmatically annotated, in the conversations both parties including the threatener and the threatened can directly identify the threatening in languages in judicial lawsuit text.

(4) offering detailed contextual information, in which the integrity of evidence has been emphasized in judicial lawsuit and the threatening is also clearly identified by interested parties. All of these constitute context of judicial lawsuit text.

The study at least partially overcomes the deficiencies of empirical study of threatening, more specifically, the shortcomings of corpus-driven study. So, Muschalik provides a new method and beneficial experience for the following pragmatic study by using corpus systematically.

Above all, this book studies an interesting topic in pragmatic studies, providing with scholars a new direction in the field. For instance, Muschalik discusses that scholars like Bellar et al. (2005) and Hepburn & Potter (2011), from sociological and psychological perspectives, view threatening as an important way to exert social rights and influences. This indicates that only by taking a multidisciplinary perspective and using multiple research methods can we promote relative researches, and this can serve as a new direction for threatening study.

It is sure that this book is significant and interesting, but there still exist some shortcomings. One of the shortcomings lies in that this book only deals with English corpus. However, besides the universality of pragmatics, different languages may show different strategies on threatening expressions. So, the width and validity of the conclusions of the book are to be verified by using more evidence from different languages.

5. Future task for the study of threatening

Above all, Muschalik's *Threatening in English* and some literatures in the study of threatening in languages provide with scholars some new directions in the study of pragmatics.

First of all, threatening in languages is intimately related to politeness. As Kasper (1994: 3206) points out, 'politeness' refers to proper social conduct and tactful consideration for others. ... 'politeness' as a technical term in linguistic pragmatics refers to a broader, substantially more democratic concept. Since the object of pragmatic inquiry is linguistic action, 'politeness' as a pragmatic notion refers to ways in which linguistic action is carried out—more specifically, ways in which the relational function in linguistic action is expressed. It can be inferred that politeness is significant in daily social life. And we know that threatening is closely associated with politeness. So, threatening in languages has become an important topic in politeness pragmatics.

Secondly, of politeness pragmatics, Fraser (1990) reviews four current approaches to politeness: (1) the social-norm view; (2) the conversational-maxim view; (3) the face-saving view; and (4) the conversational-contract view. It must be admitted that the four approaches to politeness have made great contributions to politeness. For instance, according to Fraser (1990: 220), the first approach to politeness is the social-norm view which assumes that each society has a particular set of social norms consisting of more or less explicit rules that prescribe a certain behavior, a state of affairs, or a way of thinking in a context. A positive evaluation (politeness) arises when an action is congruent with the norm, a negative evaluation (impoliteness-rudeness) when an action is not. Therefore, in people daily verbal communication, there are both positive evaluation and negative evaluation, which should be dealt with in the same weightiness. Unfortunately, the threatening in languages has to some extent been ignored. So the future study on threatening in languages could be included in politeness pragmatics. As a consequence, the research on threatening can get the four approaches to

politeness refined.

Thirdly, from the perspective of constructional grammar, it should be stressed that a construction is a pairing of form and meaning. So, the threatening in language should be regarded as a construction. Therefore, the future study can conduct some systematic researches on threatening constructions in languages, which will contribute to the developments for both constructional grammar and pragmatics. Thus, both positive construction and negative construction, such as threatening in languages, should be explored, so as to make us have a better and deeper understanding of the features of daily verbal communication.

In addition, with the development of experimental pragmatics the future study on threatening in languages can test the motivation and validity of threatening in languages by taking some methods from experimental pragmatics. In this way, scholars can distinguish two types of threats:

(1) threats that are uttered in prospect of an action that threateners either try to prevent or incite;

(2) threats that are uttered in retrospect of events that have somehow negatively affected the target (Muschalik, 2018: 183).

Finally, Muschalik's *Threatening in English* discusses that scholars like Bellar et al. (2005) and Hepburn & Potter (2011), from sociological and psychological perspectives, view threatening in languages as a significant and useful instrument to exert social rights and influences. Due to the complicatedness of threatening in languages, the study on threats should take a multidisciplinary perspective. Only by applying multiple research methods can we promote relative researches, and this can serve as a new direction for threatening study.

In summary, what has been mentioned above is the fact that *Muschalik's Threatening in English* evidences qualitative and quantitative research methods to a systematical study of threat words in 301 US judicial cases, which has a great theoretical value and practical significance. Theoretically, based on Brown & Levinson's (1987) facethreatening speech act, it has propelled the development of speech act theory; practically, the systematic study of threat language corpus in Muschalik's *Threatening in English* sheds some light on people's understanding of relevant issues and provides guidance for effective pragmatic communication in daily language. Assuredly, Muschalik's *Threatening in English* will definitely promote the theoretical study of speech act theory and has expressed a new direction in pragmatics as well.

Conflict of interest

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BOOK REVIEW

Book review

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Dąbrowska, Eva, & Dagmar Divjak (Eds.). (2019). *Cognitive Linguistics: Foundations of Language*. Berlin/Boston: Walter de Gruyter GmbH. ISBN 978-3-11-062297-3, 315pp.

This volume, edited by *Ewa Dąbrowska* from University of Birmingham and FAU Erlangen-Nürnberg and *Dagmar Divjak* from University of Birmingham, is the part of a three-volume set on Cognitive Linguistics published by Walter de Gruyter in 2019. As the first volume of this set, it discusses the cognitive processes and abilities of human beings which underlie language production, particularly concerning such concepts as embodiment, attention, and categorization, providing a state-of-the-art overview of the subfields in linguistics. Authors in this collection specially emphasize the direction of cognitive linguistic studies towards a more empirical, interdisciplinary, and social-oriented basis, and provide readers with insightful ideas and suggestions for future research in Cognitive Linguistics.

To begin with, in the Introduction, the editors briefly introduce the assumptions, history, and current situation of Cognitive Linguistics, and give an outline of the topics in the three-volume set. In chapter 1, *Benjamin Bergen* expounds the historical conceptions of embodiment in Cognitive Science, describes some of the ways that embodiment has been used in Cognitive Linguistics, and discusses the directions that linguistic embodiment research is currently moving towards. According to the author, there have been three distinct phases in the application of the idea of embodiment to empirical work on language and cognition, containing the analytical phase, the process phase and the function phase.

For the next chapter, *Russell S. Tomlin* and *Andriy Myachykov* review the evidence for a regular link between visual attention and syntactic organization. They propose that the grammatical role assignment mechanism and the positional assignment mechanism form a hierarchical dual-path system, which allows a grammatical representation of the perceptually salient referent in a sentence.

In chapter 3, *Dagmar Divjak* and *Catherine L. Caldwell-Harris* present interpretations of frequency and entrenchment, and integrate perspectives from both Experimental Psychology and

Cognitive Linguistics. They illustrate the origins of the interest in frequency and its applications, and also the review of the cognitive and neural mechanisms supporting language structures that vary in entrenchment.

Categorization is discussed by *Michael Ramscar* and *Robert Port* in chapter 4. They suggest that human conceptual capabilities are systematic in that they are the products of a rich capacity to discriminate and learn systems of alternate responses (behaviors, affordances, words, etc.) and to use the systems in context, with a conclusion that conceptual knowledge is closely related to context of language use.

As for chapter 5, *R. Harald Baayen* and *Michael Ramscar* explain three approaches that attempt to answer the question about the mechanism of structuring language, placing more emphasis on the process of abstraction, analogical reasoning, and basic principles of discrimination learning.

In chapter 6, *Ronald W. Langacker* characterizes construal with reasonable precision and investigates their representations in language. Five broad dimensions of construal are scrutinized, namely perspective, selection, prominence, dynamicity, and imagination.

Moreover, four major themes concerning metonymy are specified by *Antonio Barcelona* in chapter 7. They are the notions of metonymy, the typology, the ubiquity, and research methods in the study of metonymy. *Barcelona* especially discusses the role of metonymy in grammar and discourse, and highlights the tasks for future research such as the compilation of a generally accepted detailed typology of metonymy.

For chapter 8, *Raymond W. Gibbs* describes some of the empirical findings on metaphor and analyzes several of the ongoing debates regarding the cognitive theory of metaphor. The research offers a strong support for the claim that metaphoric thoughts have a primary role in using and understanding verbal metaphor. Besides, *Gibbs* further suggests linguists should articulate criteria for identifying metaphoric patterns and inferring specific conceptual metaphors.

Two current approaches to understanding word meaning are illustrated in chapter 9 by *Laura J. Speed*, *David P. Vinson*, and *Gabriella Vigliocco*. On the one hand, embodiment-based cognitive theories propose that understanding words' meanings requires the mental simulation of entities being referred to. On the other hand, distributional theories describe meaning in terms of language use. The authors conclude by proposing an integrated model of meaning where both embodied and linguistic information are considered significant.

In chapter 10, *Mark Turner* introduces BLENDING as the basic and indispensable mental operation that interacts with other basic mental operations such as conceptual mapping, and that plays a pervasive role in language and communication. Additionally, he explains some basic terms of the blending theory, including mental space, mental web, and projection. Grounded in classic examples, he also reveals several challenges to the blending theory.

The last chapter written by *Arie Verhagen* explores the connection between the overall structure of human cooperative communication and its cognitive "infrastructure", and various types of linguistic meaning. In his view, a number of basic conceptual domains that are commonly encoded in the grammars of human language, including deixis ("grounding"), "descriptive" categorization ("frames"), and "logical" operations like negation, pertain to particular features of human

cooperative communication.

Overall, a relatively comprehensive review is provided in the volume, including the origins, early work, emerged strands, books and journals, organizations and courses of Cognitive Linguistics. The subfields, historical conceptions, research methods, examples, and trends of the topics are specifically illustrated. Generally, the views are discussed from such fields of Philosophy, Cognitive Psychology, Cognitive Anthropology, Psycholinguistics, and Experimental Psychology. Besides broad domains, a long timeline of researches is also reviewed, from the historical development of 50 years ago to the latest progresses in recent years. In this sense, the book is quite informative and highly readable since it provides abundant sources for readers to review certain topics in cognitive linguistic research. Compared with other guide books, including *An Introduction to Cognitive Linguistics* (Ungerer & Schmid, 1996), *Cognitive Linguistics* (Croft & Cruse, 2004), *Cognitive Linguistics* (Wang, 2007), and *Introduction to Cognitive Linguistics* (Li, 2008), this volume especially provides more detailed suggestions in studies on Cognitive Linguistics and related disciplines, as is shown by the fact that *Friedrich Ungerer* and *Hans-Jorg Schmid* pay less attention to *Fauconnier's* "Mental Space" of the blending theory in their monograph while *Mark Turner* in this volume explains terms of blending in detail.

Fundamentally, as a collection contributed by leading experts, this volume not only provides overviews about the general topics in cognitive linguistic studies, but also offers some comments on the future research. As the chapters reveal, driven by the emphasis on the real usage of language, cognitive linguists have undergone a significant shift towards a more empirical approach. Authors jointly claim that a direction of interdisciplinary research is another essential property for future concerns in Cognitive Linguistics. According to the basic assumptions of the chapters, languages are the way they are because humans are the way they are, so social factors should be taken into account. It is a relatively new trend that researchers begin to integrate the cognitive perspective and the social one into a single theoretical framework.

Another merit of this volume is that, authors proposed valuable implications and synthesized models and approaches, with an attempt to settle disputes in current studies in Cognitive Linguistics. To take chapter 7 as an example, *Barcelona* highlights a detailed list of tasks for future studies on metonymy, pointing out that more studies should be on the attitudinal uses of metonymy in discourse, the main types of metonymy in pragmatic inference, and the psychological reality of metonymy. Another case is offered in chapter 9, where the writers review two current approaches (embodied and distributional theories) to understanding word meaning that focus on different aspects. Although these two approaches are typically used as opposite ones with respective advantages and disadvantages, the authors try to integrate them into a model that emphasizes both bodily experience and linguistic information.

Nevertheless, due to the limited space, this volume skates over some basic information in the field of Cognitive Linguistics, and might not provide its readers with exhaustive details for topics concerned in this book. Thus, it seems that it is a challenge for beginners to read some of the chapters because some experiments and terms used in the discussion, especially the experiments in Neuroscience, are not easy to follow without relative knowledge. In addition, this volume fails to cover the dialogic view on language in Cognitive Linguistics, which is a significant field for future research. Based on *Du Bois* (2014), dialogic syntax has consequences for meaning and introduces

new evidence for the psychological reality of the production of language structure. What is more important, in line with Zeng (2018), the dialogic approach to meaning indicates the dialogic turn in Cognitive Linguistics whose focus should not be on single sentence but utterance pairs.

However, as a guide book in Cognitive Linguistics, this volume is of great value to readers of any level who are interested in the cognitive approaches to language studies. In terms of its comprehensive content, prospective comments and insightful ideas, this volume is worthy of being recommended for readers with interest in linguistics, particularly in cognitive linguistic studies.

Conflict of interest

No conflict of interest was reported by the author.

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BOOK REVIEW

Book review

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Ewa Dąbrowska & Dagmar Divjak (Eds.). (2019). *Cognitive Linguistics – A Survey of Linguistic Sub-fields*. Berlin/Boston: Walter de Gruyter GmbH. ISBN 978-3-11-062298-0, 248pp.

Cognitive Linguistics – A Survey of Linguistic Sub-fields, published by Walter de Gruyter GmbH in 2019, is a collection of the three-volume set on Cognitive Linguistics edited by Ewa Dąbrowska and Dagmar Divjak. Overall, the chapters provide extensive overviews of the major sub-fields within linguistics on a cognitive perspective. Leading international academics in current linguistic studies can be found in the writers' list. From the internal-oriented studies of language like phonology (Geoffrey S. Nathan), lexical semantics (Dirk Geeraerts) and construction grammar (Holger Diessel), to the external-oriented and applicable ones such as language variation and change (Dirk Geeraerts and Gitte Kristiansen, Martin Hilpert), first language acquisition (Danielle Matthews and Grzegorz Krajewski), second language acquisition (Nick C. Ellis and Stefanie Wulff), discourse (Christopher Hart), and finally, literature (Peter Stockwell), in this volume, the authors separately and systematically review the contributions Cognitive Linguistics made to different sub-fields in linguistics, and at the same time explore how Cognitive Linguistics gains inspirations from these areas.

Specifically, in chapter one, Geoffrey S. Nathan briefly compares approaches of different linguistic schools towards phonology studies and the corresponding obstacles, and then focuses on how to use the worldview of Cognitive Linguistics, especially cognitive grammar to explore and explain the main questions in phonology, mainly concentrating on the acquisition, production and perception of phonology. Unlike other linguistic schools, Cognitive Linguists hold a usage-based and frequency-oriented view on phonetic perception and acquisition, which is also a non-modular view on phonetic storage with a claim that phonological representation is of real sounds instead of lists of features. Experts in Cognitive Linguistics also try to explain sound production from an active construction perspective. Additionally, Cognitive Linguists also attempt to put forwards alternative approaches like “image-schema transformation” and exemplar theory to better illustrate some fundamental problems in phonology such as allophone and categorization.

Dirk Geeraerts provides a brief survey of the main lines of lexical semantic research in Cognitive Linguistics and draws a conclusion of the future trend in chapter two. According to the author, with the prototype model, theories of Cognitive Linguistics provide a strong explanatory power to meaning in both monosemic context and polysemic context. Meanwhile, semantic studies from the cognitive perspective also gives special attention to specific forms of onomasiological structure in the lexicon, developing the notion of salience in the description of semasiological structure. In conclusion of this chapter, contributions of Cognitive Linguistics in lexical semantics are demonstrated from two aspects: namely, semasiology and onomasiology.

In chapter three, *Holger Diessel* generally analyzes studies on grammar in Cognitive Linguistics. Unlike generative linguists' description for universal grammar, which accounts language faculty and general rules for grammar acquisition and analysis, Cognitive Linguistics proposes a usage-based way to guide grammar study and embraces an embodied view of grammar acquisition. Basically, according to the usage-based construction theory, linguistic structures can be analyzed in terms of complex signs (constructions) which are connected with each other by various links, signifying that grammar can be seen as a dynamic network of interconnected signs. According to the writer, the links can be categorized into four kinds, namely, taxonomic links, horizontal links, syntactic links and lexical links. By providing grammar study with a usage-based constructional approach, Cognitive Linguists bring new explanations for the study of special linguistic forms like idioms, passive sentence and transitive constructions.

The author of chapter four explores the intersection between Cognitive Linguistics and discourse studies, especially focusing on the synergy of cognitive linguistic assumptions and critical discourse analysis. Surveying the recent development in this intersectional field, the author claims that cognitive linguistic analysis is an important perspective in ideological research. For example, the research findings of conceptual metaphors are applied to analyze the media and politic discourse. Meanwhile, inspired by the categories proposed by Leonard Talmy for describing the structuring of concepts and conceptions, such as scenes and events, entities and processes, motion and location, and force and causation, this author further categorizes construal operations into four systems: structural configuration, framing, identification and positioning, aiming to synthesize these in one coherent theoretical framework, which relates construal to the domain-general cognitive systems.

What chapter five centers on is the relationship between language change and cognition. The author discusses language change from the perspective of Cognitive Linguistics and also mentions the social turn in cognitive linguistic studies, intending to offer a new angle to view language change by adopting a usage-based approach. That is, language change is a gradual and dynamic process grounded in language use. On the account of the lexical semantic change, grammaticalization, sociolinguistic change and historical developments of form-meaning pairings, this chapter expounds in great detail the diachronic changes of language and illustrates the phenomena such as metaphorical change, the form of polysemy, meaning broadening and narrowing and so on.

In chapter six, *Dirk Geeraerts* and *Gitte Kristiansen* argue that Cognitive Linguistics represents a recontextualizing approach, emphasizing meaning and function of language, adopting an experiential view of meaning and embracing a usage-based model instead of just focusing on the homogeneous aspects of the language system. The writers depict the investigations of variation from cognitive perspective in both interlinguistic and intralinguistic domains, especially reviewing

the cultural and lectal variations. According to their view, prototype effects and metaphorical conceptualization play significant roles in the cognitive representation of variation. Inversely, since language variation studies focus on meaning instead of form, “meaning of variation” and “variation of meaning” can at the same time form a central part of the future cognitive linguistic research.

Both chapter seven and chapter eight cover a cognitive-linguistic perspective on language acquisition. On the one hand, grounding that language is not inborn but acquired from real linguistic communication, *Danielle Matthews* and *Grzegorz Krajewski* describe children’s development of language system, from pre-word period to the stages of developing lexicon, grammar, and pragmatic skills. They mention that Child Directed Speech (CDS), the language which children hear, is repetitive and formulaic. Through participating in the conversations, a child is gradually able to distinguish the sounds in his/her native language and construct the lexicon for meeting the interaction purposes. At the same time, the concept of “construction” provides sufficient description for the grammar acquirement. Instead of innate linguistic biases, children learn their grammar from what they hear and what they use. On the other hand, in chapter eight, *Nick C. Ellis* and *Stefanie Wulff* explain second language acquisition and first language acquisition from the perspective of cognitive construction grammar. Firstly, they conclude that constructions exist in both L1 and L2, as the forms of meaning-form/function pairs. Secondly, the use of formulaic language fosters language development of both L1 and L2 learners, although for adult L2 learners it might be more difficult to produce chunks. Thirdly, during the process of acquiring and using the constructions, many factors such as frequency, salience, contingency of form-function mapping are relating to structure language. Finally, language should be learned in a situated action instead of from rules or rote-memorizations alone, since it is grounded in our embodiment and experience.

The final chapter concerns the cognitive approach to literature. In this part *Peter Stockwell* particularly highlights the studies on cognitive poetics. The researcher firstly outlines the emergence and development of cognitive poetics, and then shows the cognitive turn in poetics has a positive effect on the application of methodologies in literature analyses, such as reader response, corpus stylistics, textual analysis and so on. In line with the view of this chapter, through providing an embodied and empirical approach to analyze literature, cognitive poetics functions as both a latest critical theory and a scientific method with empirical roots, making the integration of art and science possible.

As summarized above, this volume contributes notable chapters introducing the studies in sub-fields in linguistics from cognitive linguistic perspective, including the research on phonology, semantics, grammar, applied linguistics, etc. This collection is undoubtedly an inspiring resource for researchers or readers to explore insightful stances in cognitive linguistic studies. The wealth of systematic overviews of main research in sub-fields demonstrated in each chapter lay a solid foundation for the future research in cognitive linguistic studies. In addition, this volume reveals some specific new research trends in linguistic studies, a recontextualizing tendency in linguistic studies in particular. Traditional linguistics tries to decontextualize language studies, focusing on the homogeneous aspects of the language system, while with a cognitive theoretical support many peripheral studies like language variation and constructions are now in the spotlight. Another merit of this collection that is noteworthy of our attention is that, besides the specific research content, authors expound most of the current research methods, such as psycho-experimental and neurobiological approach, and quantitative corpus analysis, which are all beneficial for the future

research in linguistics. One can trace the obvious line of the development of these new research content and methods to develop more detailed studies. Accordingly, this volume will surely guide scholars and readers who are interested in works at the junction of Cognitive Linguistics and other sub-branches of linguistics or even literature.

However, this collection concerns more about the comprehensive theoretical and methodological issues of cognitive studies on language, whereas explanations of basic theoretical notions should be provided with more fine details. In this sense, this work might be somewhat challenging for some readers who are beginners in cognitive linguistic studies. Besides, many discussions call for further empirical analyses to support abstract theoretical claims, for instance, the studies on syntactic and semantic bootstrapping of constructions. Another pity is that the dialogic and interactional view on language which largely contributes to cognitive linguistic studies, is not mentioned in this collection.

To conclude, the authors not only show how cognitive approaches contribute to the research on natural languages, but also give suggestions on the further intersectional studies in linguistics. In consideration of the insightful topics, well-organized structure, and refined analyses of sub-topics in language studies, this collection is a valuable reference book of both theoretical and experimental significance, for readers interested in researching natural languages.

Conflict of interest

No conflict of interest was reported by the author.

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