A formal characterization of explicature and its consequences to explicating in Chinese*

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Abstract

This paper studies the notion of explicature and the process of explicating in relevance-theoretic pragmatics against the background of the minimalism versus contextualism controversy. It attempts to give a formal definition of explicature, which has not yet been spelt out in the literature. It then applies the formal characterization to the study of a range of related cases in Chinese grammar. The findings are used to re-examine the minimalism/contextualism debate. We argue that explicature theory does not by nature favour either of the two sides.

Keywords: explicature; minimalism; contextualism

1. Minimalism versus contextualism

The central issue in the currently on-going debate between Semantic Minimalism and Contextualism is whether truth values can be determined at the sentence level, with only a minimal degree of context-sensitivity solely directed by linguistic features, or whether they should necessarily be ascertained with reference to freely enriched contextual information. In strong defence of the latter position is the theorizing on explicature developed by Carston within the framework of relevance theory. Carston’s studies of explicature, defined as the proposition obtained through the development of logical form, have led to the claim that free enrichment of LF meaning is indispensable as an explicating
process, thereby arguing against Stanley’s hypothesis that every contextually-sensitive explication of LF meaning can only be motivated by some indexical element already explicitly represented at LF.

However, we are of the opinion that, in order to understand the nature of this controversy better, the theory of explicature itself needs to be further refined. In particular, what is exactly entailed by ‘development of a logical form’, which is the definition given to explicature by relevance theoreticians? What is the relationship between the derived explicature set and the original sentence? In what ways can a logical form be developed? Answers to such questions, we believe, can bring about direct consequences to this debate. The rest of this paper only makes direct reference to one version of minimalism, which is Jason Stanley’s indexicalism. Similarly, only Robyn Carston’s radical pragmaticism is explicitly referred to as one version of contextualism.

2. Formalizing explicature

According to the discussions in Carston (2004, 2010), an explicature is only generated on the basis of a sentence uttered in a given context, by a given user. From an inferential-pragmatic point of view, only one explicature is obtained by the hearer on most occasions. But seen in a purely objective way, a sentence will lead to the generation of sets of ordered explicatures. Two hearers may understand the sentence in different ways, hence working towards different interpretation directions. Each interpretation direction can range from the grosser readings to the finer-tuned ones, forming an ordered scale of infinite explicatures, with the latter one always entailing the former one. That this objective characterization is not altogether unrealistic is attested by a unique rhetorical practice in Chinese literary tradition, whereby scholars in ancient times engaged themselves in prolonged effort polishing the language of the classics, aiming at making the sentences pithier and the discourse more significant, while latter-day readers then had to rely on the annotations, in the forms of definitions and elaborations, of professional philologists to comprehend and explicate the sentences so as to recover the omitted content, often resulting in explicatures with varying grades of explicitness as well as incompatibly divergent interpretations due to the change of social, cultural and historical contexts.³ This kind of script-reading practice also indicates that explicatures are cancellable, as observed in Carston (2010).

Now onto the relationship between the explicature set and the logical form of the initial sentence: although explicatures can sometimes be written down as new utterances, they are usually not overtly taken down. Instead, they are entertained in the mind of the language user, as propositions in the language of thought. Yet, when discussing explicatures, research works often present them as if they were natural language sentences. To avoid possible misconcep-
tion, we wish to clarify first that explicatures are not to be taken as real linguistic productions. They are representations in the language of thought expanded on the basis of the underdetermined LF representations. Although we can pretend to talk about lexical items in explicatures and sentences as explicatures, it is the concepts and propositions that are really being talked about.

An inductive examination of all types of the base-level explicatures discussed in the relevance-theoretic literature, especially in the works of Carston, results in the following tentative formulations:

(1) Given a set of propositions $P$ and a sentence with the logical form representation $LF$, $P$ is an explicature set developed from $LF$ if and only if for any $P_i$, $P_i \in P$, $P_i$ both entails and contains $LF$.

(2) Containment.

A contains B if and only if all the symbols that appear in B or their variable or hyponymic instantiations also appear in A.

The intersection of entailment and containment requirements rules out a lot of unwanted inferences, including cases of implicature, paraphrase, and sheer irrelevant utterances that may contain similar expressions. On the other hand, it accommodates the variety of base-level explicatures that have been studied in the literature, such as disambiguation, saturation, free enrichment (including unarticulated constituents), and ad hoc concept adjustment. We look at each case in turn. For ease of exposition, the formal definition in (1) will be referred to as df: $E$ in the remaining part of this paper.

As implicature is some new proposition(s) inferred from the literal meaning of an uttered sentence which is itself a proposition, the former can have no similarity with the latter. Hence entailment and containment are out of the question.

The term paraphrase is most often used in a rather vague way. According to the definition of Hurford et al. (2007), ‘a sentence which expresses the same proposition as another sentence is a PARAPHRASE of that sentence (assuming the same referents for any referring expressions). Paraphrase is to SENTENCES (on individual interpretations) as SYNONYMY is to PREDICATES (though some semanticists talk loosely of synonymy in the case of sentences as well).’ The df: $E$ we propose would rule out paraphrase thus defined, because for the two propositions that are exact paraphrases of each other, one can never contain the other, as the words used as a paraphrase should avoid repeating the ones used in the other. Moreover, two propositions that form a paraphrasing relationship form mutual paraphrases of each other. However, explicatures of an LF are unidirectional. There can never be two propositions that are mutual explicatures of each other, although there can be two or more propositions that are explicatures of one and the same LF, differing only in degrees
of precisization. Nevertheless, for those loose uses of the notion of *paraphrase* that are sometimes found in exercises of foreign language textbooks, it is still likely that they include cases where one proposition is a meaning development, extension, or expansion of the other. Such cases, then, are similar to explicatures. There, the term *paraphrase* is simply not rigorously used.

In the case of disambiguation, the original sentence has two potential LFś representable in the form of \( A \lor B \), with its arguments being metavariables which can be atomic or compound propositions. Pragmatic inference will yield either \( A \) or \( B \) as the explicature. According to the operation of trivial disjunction-introduction (\( \lor I \)), either \( A \) or \( B \) can entail \( A \lor B \). However, \( A \lor B \) is no more than an intermediary level of representation, an LF. The df: \( E \) will make sure that the chosen explicature, i.e. one of the disjuncts from \( A \) or \( B \), contains all the symbols in one of the original two LFś. The other LF, although always recoverable by \( \lor I \), is no longer considered because of its triviality. This conforms to our intuition when processing ambiguous sentences: \( A \lor B \) may be entertained, but only one disjunct is seriously considered.

*Saturation* in explicature theory involves argument realization and variable instantiation. The latter conforms to df: \( E \), so does the former, if no non-cannonical structures are involved. We return to this point in Section 5.

*Free enrichment* involves the insertion of unarticulated constituents that typically involve non-compulsory adjuncts and any elements that should be added to complete a sub-sentence. These cases again conform to df: \( E \) requirements.

*Ad hoc concept adjustment* constitutes cases of precisization at word level. According to studies on this topic, explicatures derived through ad hoc concept adjustment can involve two processes: concept-narrowing and concept-enlargement. But there is difference of opinions on whether concept-enlargement really exists or is necessary as an explanatory process. Concept-narrowing involves the use of hyponyms of words that originally appear in LF. Hence the result should conform to df: \( E \) requirements. Concept-enlargement involves the dropping of some specific semantic features related to a word, leaving some general features. But it could be argued that concept-enlargement is always accompanied by concept-narrowing of some other features. For example, by describing someone as an angel, the speaker tries to convey the metaphorical meaning that the person concerned is a very caring character. Although many specific features of angel are dropped, especially the super-human attributes, some other features are sharpened. That is, the human attributes of being kind-hearted and comforting to others. These narrowed features can still be taken as hyponymic of the concept 'angel'. Hence the df: \( E \) requirements are still observed: the resulting explicature entails the
original LF, as can be illustrated by the following example pair.\[^8\] This enlargement process is also called loosening. What is loosened is not the applicable meaning of the explication, but the applicable definition of the concept itself. The loosening of a definition leads to one type of instantiation of the original symbol encoding the concerned concept, the other type being value assignment to variable-like pronouns. Thus containment is also satisfied in the explicating process from (3a) to (3b).

(3) a. The ATM swallowed my credit card. ⊆
   b. The ATM seized my credit card in an abrupt manner, as if eating it up like a monster.

3. Some consequences

The above characterization, if on the right track, reveals the formal link between an explicature set and the output logical form of the sentence, and provides us grounds to re-examine the ‘freedom’ of enrichment as hitherto claimed by proponents of contextualism. According to the df:E, the process of explicating has to be tightly constrained by the original LF. In other words, it cannot help being linguistically directed. Although this stance is tilted towards indexicalism, it calls for the need to spell out an operational programme showing how linguistic direction can be made to work so as to generate the rather heterogeneous types of explicatures on the basis of the logical forms of sentences being uttered. The strategy adopted by indexicalism, as formulated by Stanley (2000), is to argue for the existence of free variables in logical forms serving as triggers to contextual accommodation. But the positing of such variables in given constructions needs to be warranted by linguistic motivation, on a case by case basis. Is it possible, at an overall level, to find linguistic motivations to posit a particular version of LF representation that is laden with justified free variables which provide the set of linguistic triggers needed to flesh out the underdetermined sentence meaning? If not, there will be the worry over the proliferation of covert variables standing for unarticulated constituents. Such covert variables are not like variables standing for unsaturated arguments. Unsaturated arguments are obligatory, being specified by the arity of predicate operator in the lexicon. But covert variables are optional. According to Carston (2010), proliferation of variables is unattractive to a cognitive programme of pragmatics because it involves unwarranted processing effort and works in contrary to the principle of relevance.

What we wish to propose is that the version of LF representation serving as input to explicating can both contain covert variables and be much constrained if taken as an enriched form of event-semantic structure.
4. Event-semantic representation

Parsons (1990) and Landman (2000) offer detailed arguments for the adoption of an enriched version of LF representation, incorporating quantification over event variables and introducing event internal structures. In event-semantic representations, NPs and PPs serving as arguments or adjuncts in a sentence are represented as predicates over the event variable. Examples are shown as (4) and (5):

\[(4)\]
\[a. \text{Brutus stabbed Caesar in the back with a knife. (Parsons 1990)}
\[b. \exists e [\text{Stabbing}(e) \land \text{Subject}(e, \text{brutus}) \land \text{Object}(e, \text{caesar}) \land \text{In}(e, \text{back}) \land \text{With}(e, \text{knife})]\]

\[(5)\]
\[a. \text{Jones buttered the toast slowly in the bathroom with a knife. (Landman, 2000)}
\[b. \exists e [\text{Butter}(e) \land \text{Agent}(e)=\text{jones} \land \text{Theme}(e)=\text{toast} \land \text{Slowly}(e) \land \text{Location}(e)=\text{bathroom} \land \text{Instrument}(e)=\text{knife}]\]

Notational variations aside, the two representations give us the similar type of LF. In addition to the usual predicate verb, (4) uses grammatical functions like subject and object as predicates, plus some specific PPs as location and instrument adjunct predicates. In (5), the predicates used are the verb, thematic roles, including explicit location and instrument. In addition, we believe the manner adverb can also be linked to a thematic role of MANNER. Thus (5) can be expanded into (6):

\[(6)\]
\[\exists e [\text{Butter}(e) \land \text{Agent}(e)=\text{jones} \land \text{Theme}(e)=\text{toast} \land \text{Manner}(e)=\text{slowly} \land \text{Location}(e)=\text{bathroom} \land \text{Instrument}(e)=\text{knife}]\]

(4) and (5) each contain a relatively complete range of grammatical functions or thematic roles whose existence is determined by the nature of the predicate verb. That is, it is the predicate that determines the number and type of thematic roles that are: (a) semantically available in the propositional structure related to the sentence; (b) syntactically allowable as obligatory arguments; and (c) syntactically projectable as optional arguments. Hence the two examples given above can have a lot of shortened forms, which are entailed by the more complete ones. The shortened ones, depending on their use situations, may be explicatured, yielding as explicatures the more complete propositional forms – sometimes also yielding the more complete syntactic structures. This is revealing. We can hypothesize that even for the logical forms in which the optional roles are not all present as constituents, there in fact exist free variables standing in place of those non-present roles that are specified by the predicate. Hence for a shortened sentence such as (7a), its LF should be represented by (7c) rather than (7b):

\[(7)\]
\[a. \text{Jones buttered the toast in the bathroom with a knife.}
\[b. \exists e [\text{Butter}(e) \land \text{Agent}(e)=\text{jones} \land \text{Theme}(e)=\text{toast} \land \text{Location}(e)=\text{bathroom} \land \text{Instrument}(e)=\text{knife}]\]

\[(7c)\]
\[\exists e [\text{Butter}(e) \land \text{Agent}(e)=\text{jones} \land \text{Theme}(e)=\text{toast} \land \text{Manner}(e)=\text{slowly} \land \text{Location}(e)=\text{bathroom} \land \text{Instrument}(e)=\text{knife}]\]
(7)  a. Jones buttered the toast.
    b. \( \exists e \ [ \text{Butter}(e) \land \text{Agent}(e) = j \land \text{Theme}(e) = t ] \)
    c. \( \exists e \ [ \text{Butter}(e) \land \text{Agent}(e) = j \land \text{Theme}(e) = t \land \text{Manner}(e) = \text{Var}_m \land \text{Location}(e) = \text{Var}_l \land \text{Instrument}(e) = \text{Var}_i ] \)
    (key: \( \text{Var}_m \) = MANNER variable, \( \text{Var}_l \) = LOCATION variable, \( \text{Var}_i \) = INSTRUMENT variable)

The free variables therein will then serve as linguistic triggers when necessary to direct the explicating process, yielding the desired explicatures. This treatment introduces variables only in accordance with the argument structure of the predicate, thus avoiding an excessive planting of free variables. It complements with other motivated introductions of free variables, such as in the familiar cases of deictic terms, temporal variables and variables within the restrictive domain of quantifiers.8

The adoption of event-semantic LF representation with the provision of thematic-role-based free variables can supply linguistic direction to most cases of free enrichment. One exception we can observe, from the known types of free enrichment, is the case which is traditionally called **understatement**, i.e. utterances which are apparently uninformative:

(8)  a. It’ll take time for your knee to heal.
    b. It’ll take quite a long time for your knee to heal.
(9)  a. Ralph drinks.
    b. Ralph drinks alcohol (habitually).
(10) a. Emily has a temperature.
    b. Emily has a high temperature.
(11) a. He’s a person with a brain.
    b. He’s a person with a good brain.
(12) a. Something has happened.
    b. Something unusual has happened.

Here, we face several alternatives. One is to take over another strategy in event semantics in allowing modifiers to appear as predicates in LF, then positing the existence of null modifiers as free variables. This is a strategy we would want to avoid adopting, for it would lead to an unprincipled and uncontrol- lable postulating of modifier variables. Another option is to argue that such sentences do provide us with the literal meaning as intended by the communicator. What we get as strengthened interpretations are in fact implicatures obtained from such a rhetorical device, not explicatures. The third way is to treat them as being colloquial expressions, like idioms, which are already the encoded ways to express the (b) meanings. Hence there is no need for enrichment. But detailed arguments for the latter two positions will need to be provided, which form the topic for a separate work.
5. Some additional linguistic motivations

There exists a school of grammatical theory whose claims can be perceived as supplying justifications for our formal proposal. This is the school of valency grammar. Aside from its earlier French and German origins and findings, the approach received substantive developments in the study of Chinese argument structures in the 1990s. Chinese argument structures exhibit several unique properties. As Chinese makes fewer uses of prepositions, adjuncts carrying the thematic roles of instrument, manner, location, means, goals, and so on can be assumed by NPs. Adjunct NPs sometimes do not appear in the usual adjunct places, neither at the sentence-initial position nor between the subject and the verb. Instead, they can occupy the syntactic argument position for objects. That is to say, although the post-verbal argument position needs to be filled and is canonically reserved for the direct object, it can also be filled by an adjunct NP rather than the object NP itself, leaving the object NP out as an implicit variable. Moreover, since Chinese NPs do not have morphological case, an adjunct NP occupying an argument position is formally indistinguishable from an object NP. As a result, the direct object position is saturated by an adjunct, while the real obligatory object argument is left implicit. This contrasts with the other situation also found in Chinese when the direct object position is saturated by the real object argument and the adjunct is left implicit. Here are some related examples:

(13) a. Women zhoumo jingchang chi shitang
    We weekend often eat canteen
    ‘We often eat in the canteen at weekends.’

    b. Women zhoumo jingchang zai-shitang chifan
    We weekend often LOC-canteen eat-meals
    ‘We often eat meals in the canteen at weekends’ (LOC = locative word)

(14) chi daikuan
    eat loan
    ‘live on loans’

(15) chi xiaozao
    eat small-cooker
    ‘eat meals prepared in the kitchen catering for an exclusive group of people’

(16) chi huoguo
    eat hot-pot
    ‘eat by using hot-pot as an instant boiling and warming utensil at the dinner table’

(17) mai chajia
    buy market neutral
    ‘buy shares according to market neutral strategy’

(18) cun dingqi
    save time deposit
    ‘make time deposit’
Also relevant are some other non-canonical argument structures in which the subject and the object appear to have swapped positions, as in (20), as well as structures in which an intransitive verb is followed by an NP which is to be related to some other arguments or thematic roles, i.e. a relative, as shown by (21):

(20) yi-tiao bandeng zuo-le wu-ge ren
One-CL bench sit-ASP five-CL man
‘Five people sit on one bench’ (CL = classifier word, ASP = aspect marker)

(21) Wang Mian qishui si-le fuqin
Wang Mian seven-year-old die-ASP father
‘Wang Mian’s father died when he was seven’

To account for such cases, valency theory postulates the existence of valency-positions, some of which can be non-overt. When there is a need for proper re-interpretation, the word order of such sentences will be re-shuffled through processes such as topicalization, focalization, and specification, with the effect that displaced constituents are re-analysed or moved to their standard valency positions to make room for the accommodation of arguments. The postulation of non-overt valency positions echoes the postulation of free variables in event-semantic logical forms.

We are of the view that such re-interpretations and re-analyses involve syntactic operations at the LF level, whose output feeds into the explicating processes. Other similar and better known operations at this level involve interpretation of wh-questions, quantifier-domain representation and the proper re-analysis of non-continuous constituents. What is relevant to our concern here is the postulation of empty valency positions or adjunct/argument variables in the treatment of the non-canonical argument structures in Chinese. If such variables are already necessary for operations at LF level, they can still be made available for the post-LF explicating processes, thus providing the linguistic direction required for indexicalism-biased treatments.

There are two reasons for us to take re-analysis of non-canonical structures such as (13)–(21) into canonical ones as operations at LF rather than explicating processes. One is definitional: if we admit such re-analysis into explicating processes, we can no longer hold our previous claim that the explicature set entails the ‘pristine’ LF of the original sentence. The second reason is psychological. It can be argued that native Chinese speakers never access the meaning of such sentences at their face-values. Thus no one would ask the following questions with the (13–21) as intended answers:
Such judgements lead us to the hypothesis that the related re-analysis process is LF-internal, whose output is the LF, to be further fleshed out via explicating.

6. Explicature theory and truth-conditional semantics

It is hoped that this study also contributes some new understanding to the status of truth-conditional semantics. From our perspective, the major function of truth-conditional semantics is to provide a systematic and rigorous way for semantic composition. The fact that truth cannot be determined at the semantic level does not pose a big worry for us. To start with, real semantics is never the concern of linguistic semantics. What matters is the truth functions and truth conditions, never the truth itself. Logicians sometimes advise us to simply treat T as one's left thumb and F as the right one: so long as they can provide two distinct values, meaning can be successfully composed. Even if we really want to take truth very seriously out of ontological concerns, the ground is still firm: through our study, we have shown that explicatures always entail the original LF. That means the result of semantic composition won't in principle give us the wrong truth-value, so long as there is the understanding that every sentence will necessarily need to have its meaning finer-grained, which is left to the task of pragmatics, guided by the free variables visible at LF. Truth-conditions are already determined, coarsely, at the level of semantics. The rest is mere explicating.

Relevance theory, including explicature theory, works on LF meaning to yield propositional content. So whatever encoded meaning available at LF is warranted. If robust syntactic mechanisms about argument realization can be established, explicature theory can readily accept them as mechanisms in an input system leading to the composition of LF meaning. That means explicature theory can be seen as being neutral to the minimalism/contextualism debate. Given persuasive empirical evidence and convincing theorization, explicature theory can be used to accommodate semantic minimalism. On the other hand, if it can be shown that there do exist strong cases for free
enrichment, then explicature theory is also ready to support contextualism. This shows the difference between explicature theory as a cognitive pragmatic theory and the minimalism/contextualism divide as being a contention in the philosophy of language.

Notes

* An earlier version of this paper was read at the Third International Conference in Contrastive Semantics and Pragmatics, Shanghai, 2005. I am indebted to Yan Huang and Hans Kamp for helpful comments. In preparing for this new version, I have incorporated more recent publications surrounding the debate between minimalism and contextualism. The formal definition on explicature has also been substantially revised.


4. We ignore the higher-level explicatures for the time being, but see Jiang (2005a, b) for a formal characterization, where a case-by-case discussion of explicatures and their representative sentences in English and Chinese is also offered.

5. The concept of explicature in relevance theory subsumes conventional implicature and generalized conversational implicature in Grice’s theory of conversation. As a result, the concept of implicature used here is equivalent to Grice’s particularized conversational implicature.


7. Taken from Recanati (2004: 26).

8. The first two cases are discussed in the works of Carston; the last, in the works of Stanley (et al.), among others.

9. I am mainly referring to the concentrated study of valency grammar as practised in mainland China (cf. Jiang (2005a, b, 2007) for details and references).

10. The last term is mentioned in Recanati (2004: 24–25) as a term proposed in pragmatic studies.

11. Hence in violation of the availability principle (Recanati, 2004).

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References


