
1. Definition

Scalar implicature (henceforth SI) is a notion developed in inferential pragmatics. Its derivation crucially relies on the existence of sets of linguistic units that form a special implicating relationship. Such a set consists of items forming an ordered set <e₁, e₂, ... en>, in which the following criteria hold:

[1] The set involves at least two items. That is, it is neither non-null nor a singleton.
[2] Each item to the left is semantically stronger than the ones to the right. A semantically stronger item conveys information that is positively higher in degree, larger in number, or more informative than a weaker one.
[3] The linguistic units involved should be similar in semantic and lexical categorization, and they should be similar in complexity, so that the choice of one item over others is not driven by stylistic considerations such as brevity or circumlocution.
[4] The utterance of a proposition P containing e₁ entails another proposition Q in which e₂ replaces e₁.

Given such a scale, if one produces a proposition containing ei, i.e. P(ei), he can be taken to implicate that either he knows that the proposition containing a stronger item in the same scale does not hold or at least he does not know whether it obtains or not:

[5] Assert P(ei) ⇒ Assert K¬P(e(i-1)) ∨ Assert ¬K P(e(i-1))

Implicature derived in this way is called SI. Here are two standard examples in English:

[6] <All, Some>
[7] I have read some novels by Dan Brown.
[8] I have read all novels by Dan Brown.
[9] <hot, warm, lukewarm>
[10] The water is warm.

Here, given the scale [6], the utterance of [7] implicates the speaker knows [8] is not true. And given [9], the utterance of [10] implicates the speaker does not think [11] holds.

SI is a kind of generalized conversational implicature in Grice’s theory of conversation. Given the Cooperative Principle and the Quantity Maxim of Conversation, the speaker is expected to make his conversational contribution at the proper stage of the conversation and with the right amount of information. It can be then inferred that what the speaker contributes is informative to the best of his knowledge and produced to the best of his ability. What is not said is thus taken as what does not hold. On the other hand, conversational implicatures are
cancellable. That is, they are not as solid as entailment meaning. The speaker can choose to cancel an implicature with follow-up utterances without arousing logical contradiction:

[12] (In response to the question as to whether he had chance to read some novels by Dan Brown.) Yes, I have certainly read some novels by Dan Brown. In fact I have read all of them.

[13] (In response to the question as to whether the water in the boiler has turned warm for a bath). The water is warm, -- enough for taking a bath. In fact, I think it is getting rather hot. So I have already turned off the boiler.

What is implicated by an SI is its upper bound meaning, i.e. not more than what is uttered. This is the part of meaning that can be cancelled. On the other hand, the lower bound meaning, i.e. no less than what is uttered, remains unchanged.

SI-inducing scales are only a sub-set of the wider array of pragmatic scales in pragmatic investigations. Many other scales, although useful in analysing other cases, are not constructed according to the criteria of [1]-[4]. Take the scale in [14], for example, it does not systematically induce SI, because neither “all” nor “some” entails “none”. And “none” does not conversationally implicate “not some” either. Meaning “no one”, it simply entails the negation of “some”, as well as the negation of “not some but all”.

[14] <All, Some, None>


2. SI in Chinese

Investigations on SI in Chinese have only just begun. Initial findings are reported in Xiang (2008), Gong & Han (2009), Wu (2009), Feng (2010), and Chow (2011), all of which are either doctoral dissertations or revised dissertations.

Xiang (2008) studies what he called “SI humor” in Chinese, and Gong & Han (2009) studies polarity items in English, the Chinese lian…dou (even) construction, and Chinese hyperbolic metaphors. Although the notion of SI is introduced at the beginning, the central notion used in their studies is scalar model rather than SI. In a scalar model, the truth of an uttered proposition with its specific scale value (the text proposition) entails the truth of all the context propositions lower in scale, and the falsity of the text proposition entails the falsity of all the context propositions higher in scale. But the truth of the text proposition does not necessarily implicate the falsity of context propositions higher in scale,\(^1\) as shown

\(^1\) Cf. Kay (1990), Grundy & Jiang (2001) and Jiang (2011) for details.

[15] I can even translate ten thousand words a day.
[16] I can translate more than ten thousand words a day.

Therefore, studies involving scalar model or pragmatic scales may not be equivalent to studies on scalar implicature.

Wu (2009) is a preliminary study on children’s understanding of the truth-conditional meaning of Chinese cardinal numbers, which is claimed to reflect the purer semantic content of cardinals than adults’ perception, the latter being more influenced by inferential considerations. Cardinals in English have received different characterizations. According to Neo-Gricean pragmatics, cardinals are like quantifiers and modals in carrying lower-bound truth-conditional meaning, so that number “n” means “at least n”. It is the upper-bound implicature that gives “n” the “at most n” or “no more than n” reading, which is an SI. Adding the two meanings together, “n” is usually taken to have the bilaterally bound meaning “exactly n”. However, other studies favour the view that the truth-conditional meaning of cardinals is “exactly n”, thereby denying the Neo-Gricean proposal that cardinals induce SI. Wu’s psycholinguistic experiments on Chinese cardinals turn out to support the view that the truth-conditional meaning of Chinese cardinals is “exactly n”.

Turning now to the more language-specific properties of SI for Chinese, the familiar English scale of standard quantifiers <all, some> does not have an exact equivalent in Chinese. Although one can cite the <全, 有（的）> scale in Chinese, the linguistic units involved are not of equal nature in grammar. 全 is used as an adverb of scope, whereas 有 is basically a verb, which can either introduce a following NP or combines with 的 to form a Determiner to quantify a following NP, both of the latter expressing existential meaning similar to “some”. The relevant examples are cited below:

[17] 聽到貝克漢姆來學校的消息後，班上的同學全（都）去了球場。
[18] 因為球場人太多場面失控，有（的）同學在踐踏中受了輕傷。

Another lexical realization of “all” in Chinese is the determiner 每 (+classifier), whose presence is almost always accompanied by the adverb of scope 都, although 都’s co-occurrence with 全 is more optional:

[19]每個同學都通過了考試。

So the relevant scale should be in the form of [20], with each and every item in the scale belonging to a distinct lexical category, thereby weakening the standard claim presented as [3].

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2 Cf. Chow (2011) for more discussions.
[20] <全/每（都）, 有（的）>

Even more variations can be observed in the use of 大家(all the people involved), and 谁...都 (whoever ... all =), which are used as universally quantified expressions, though with more restrictions on their applicability.

The negation of the logical quantifiers in Chinese yields another scale as given below, illustrated with relevant examples:

[21] <全不/無/沒有, 不都/不全/沒有...什麼/不...什麼>

[22] 他的話並無不妥。(not at all)
[23] 他得到的消息全不對。(not at all)
[24] 他的話不全對 (not all)
[25] 他的消息不都是真的。(not all)
[26] 午飯他沒吃什麼，就簡簡單單地吃了點。(not much)
[27] 今天下午不幹什麼，只要把辦公室打掃一下就可以下班了。(not much)

Feng (2010) presents two scales related to modal expressions in Chinese, which do induce SI, although one may have different intuitions about the presence of particular items and their exact ordering sequence:

[28]<堅信, 推斷, 相信, 想, 覺得, 猜想, 懷疑>（higher-order epistemic verbs）
[29]<毫無疑問(無疑), 確實, 顯然, 多半, 據悉, 大概, 或許, 好像> (epistemic adverbs)

Returning to the question of what does not induce SI, although anaphora can be ordered into a hierarchy according to the given-ness of information each one encodes, as shown in [30], they do not yield SI, as pronouns and zero anaphora can sometimes be used interchangeably.

[30]<full NP, pronouns, zero anaphora>

References:


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3 Cf. Liu (n.d.) for more discussions.


Liu, Danqing. (n.d.). Chinese Style Quantifier Lexicon: numerous/few bipartition vs universal/existential/negative-universal tripartition. ms
