An Analysis on Illogicality in Language

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Abstract

Anomaly in language sometimes can be attributed to illogical thinking. This paper will enumerate and analyze illogicality in language use, especially those errors easily ignored, in three respects, by applying basic methods of propositional logic and predicate logic to encourage a critical attitude towards seemingly normal language and proper employment of logic in everyday communication.
Key words: Illogicality; Language; Concept; Proposition

INTRODUCTION

Although language is not a logical process, anomaly in language sometimes can be attributed to illogical thinking. This paper brings up three general violations of logic rules in people's everyday communication. The first is that illogicality frequently arises owing to vague meanings of words or phrases used or indeterminate concepts. Secondly, vagueness, ambiguity or a truth value gap may come from a vague logic scope or presupposition failure. Last but not least, illogicality in inference is sometimes due to violating the rules of the deductive logic or the basic rules of formal logic. By applying these basic methods of propositional logic and predicate logic, the paper aims to encourage a critical attitude towards seemingly normal language and proper employment of logic in everyday communication.

1. ILLOGICALITY VIA WORDS AND PHASES

Illogicality frequently arises owing to vague meanings of words or phrases used or indeterminate concepts.

1.1 Vague Lexical Meanings

Failure in clear expression is obtained by using words and phrases whose meanings are vague.

Example 1.1　我们明天凌晨五十分出发吧!
Example 1.2　When is London's train setting out?
Example 1.3　He is hitting his son with his fist, which is as big as a stone.
Example 1.4　My would-be boyfriend should be at least 10 centimeters taller than I and be majored in science.

Sentence 1.1-1.4 represents four types of vagueness. 1.1 is referential vagueness, where the meaning of the lexical item is in principle clear enough, but it maybe hard to decide whether or not the item can be applied to certain objects. Take for example the lexical item 凌晨. Presumably we can at least roughly agree that 凌晨 means 黎明前后, but it may happen that two persons, who made an appointment at this time , would probably fail to meet each other because of different understandings of 凌晨. There are many examples of this kind of vagueness. When is a mountain not a mountain but merely a hill? When is a forest not a forest but wood? What crucially distinguishes a city from a town? And so on. 1.2 is indeterminacy of the meaning, where the meaning itself of an item or phrase seems indeterminate. The most extreme example of this in English is the possession construction-*London's train* can be used to describe the train going to London, the train going across London, the train going from London, the train made in London, etc... In the face of this variety,

it seems clear that we can say little about the meaning of possessive constructions other than that there must be some relation between the possessor and the possessed. Into this class too, we might wish to enter *good*, since its meaning seems, while intuitively at least in the main homogeneous, to be variable.1.3 is lack of specification of the meaning of an item, where the meaning is clear, but is only generally specified. A simple example is a phrase like *as big as a stone* that is unspecified size. It can be applied to a tiny Yuhua stone and a massive aerolite. The sentence *I have done your dormitory* can be used by the speaker to imply that she has dusted the room, cleared it, painted it, laid the floor on it, emptied it, set alight to it, stolen the lap-top out of it, etc., depending on the speaker is a cleaner, a painter, a floor-layer, a furniture remover, a pyromaniac, or a thief. Despite of this the meaning of the item *do* is not itself indeterminate, the expression *to do some object-to do the engine, to do the dishes, to do the cupboard*-means to carry out some action to that object; but what the action is quite unspecified. 1.4 is disjunction in the specification of the meaning of an item, where the meaning involves an either-or statement of different interpretation possibilities. In the case 1.4, the implication that *or* contributes to the sentence as a whole is that one of two disjuncts is true. This disjunction in the characterization of *or* can be stated more formally in terms of truth conditions conveniently displayed in a truth-table:

Table 1
Logical Disjunction in a Truth-Table

P	*Q*	*P* ∨ *Q*
T	T	T
T	F	T
F	T	T

Another important example is provided by negation. What we can now see is that the disjunction in the statement of meaning of negative sentences is directly dependent on the characterization of *or*, which can be explained by virtue of the de Morgan equivalence

$$— (P \,\&\, Q) \equiv —P \vee —Q$$

1.2 Indeterminate Concepts

Concepts are the mental reflection of entities in our real world, which contain intension and extension. Linguistic representations of concepts are lexical words or phrases. Take a joke for example.

Example 1.5 An old monk walked down the hill with a young monk, whom he brought up in the temple. Suddenly a tiger appeared in the way, and the fearful young asked: "What is that?" "Amitabha, this is a woman." answered the old. The young said: "How horrible a woman is!" later they met a pretty girl, and the young stared at her. At sight of this, the old shouted; "This is a tiger! It will devour you. Run!" After they came back to the temple, the young fell ill. The old was worried and asked him: "What is wrong with you?" The young answered without hesitation: "I miss the tiger!" (Gan, 1995)

In the story the old monk called a woman a tiger and a tiger a woman intentionally, but the young monk was not afraid of a woman just because she was called a tiger and didn't like a tiger just because it was called a woman. Although the old exchanged these two names, he couldn't exchange their identical attributes, according to which the young, deciding his likes and dislikes, come to a correct realization of the objective entities. Concept is the mental form reflecting identical attributes of entities, which are representing entities, so they are interdependent. Any concept has its intension and extension. Intension means both particular attribute and general attribute of the concept, and extension means all its referents. Indeterminate intension and extension can lead to confusion one concept with another. The arbitrary change of the definition and the referent of a concept is called perpetrating a faulty concept in logic, which violates the determinacy of a concept. The following sentences are corresponding examples:

Example 1.6 On a party a pretty girl was sitting next to Darwin. She asked Darwin: "Sir, you told us that a man evolves from a monkey. Do you think I evolved from a monkey, too?" With a smile Darwin said: "Yes, but a beautiful monkey instead of a common monkey." (Chen, 1991)

Example 1.7 A: Salla, 不要再吃那包3+2了吧,你可千万不能自暴自弃呀!
B: 哎,是呀,再吃下去我真的要爆掉了.

Example 1.8 A: What will you buy for your parents in spring festival?
B: I will buy some goods in Ito YoKado.

In 1.6, Darwin was kidding the girl, because humankind is a mass noun, whose attribute is not shared by its individual member, while man is a non-mass noun, whose attribute is also shared by its constituent. Therefore it is humankind instead of an individual man that evolves from a monkey. 1.7 and 1.8 can be analyzed in a similar way.

2. ILLOGICALITY IN PROPOSITIONS

Vagueness, ambiguity or a truth value gap may come from a vague logic scope or presupposition failure.

2.1 Vague Logic Scope

Vagueness or ambiguity is sometimes caused by vague logic scope of negative operators or quantifiers.

In logic, signs that have a permanent non-variable meaning are called **logical constants**, which through their permanent meanings and functions determine the logical structure of the sentences they occur in. Sentential connectives, quantifiers and modal operators are commonly counted as logical constants. In propositional logic interest has traditionally been shown in only four of the sentential connectives of ordinary language, namely the four connectives *and, or, if…then* and *if and only if*. There has also been study of how negation (*not*) affects sentences. Quantifiers consist of the universal quantifier (*all/every*) and the existential quantifier (*some/something/someone*). Propositional logic focuses on a sentence as a whole not broken, while in general, it can be said that predicate logic takes us from those logical relations that hold between sentences to those that hold within a sentence. The predication that a logical constant governs is called its **logical scope.** Everything that is within the scope of a logical constant is semantically affected by it. When there are both negative operator and quantifier or two quantifiers in one sentence, complexity in determining their scopes is increased, which may lead to vagueness and ambiguity.

Example 2.1 Everyone loves someone.
Example 2.2 One hundred students shot twenty professors.
Example 2.3 Everyone does not like walk. (Fang, 2000)
Example 2.4 I don't think I can pass the final examination of Linguistics.

Example 2.1 can be interpreted in this way: A: Everyone loves someone. B: Who does Jack love? A: Jane. B: Who does David love? A: Jane. B: Who does Mike love? A: Jane. B: But I have thought that you mean Jack loves Jane. David loves Sarah. Mike loves Ruby. It can also be translated into symbols: $\forall x = y$ [like'(y) (x)]; $= y \forall x$ [like'(y) (x)]. 2.2 is similar with 2.1. In Example 2.3, the *every* of *everyone* is simply a form which expresses the universal quantifier in combination with singular meaning. Example 2.3 can be represented by symbols: $\forall x$[—like'(walk')(x)]with *not* within the scope of *every* ; —[$\forall x$[like'(walk')(x)]] with *every* within the scope of *not*. 2.4 is ambiguous for many people, there being a choice between interpreting the subordinate clause or the main clause as negated. There is no hope of capturing any such complexity in the formal representation of propositional logic. In general, the scope of a logical operator is the parts of an expression that is affected by the operator. Very often the following conventions are followed: If no parentheses follow a negation sign, the scope of the negation is always taken to be the smallest possible, i.e. it applies to the closest minimal constituent to its right. The scope of a quantifier is the length of the parenthesis that comes immediately after the quantifier.

2.2 Presupposition Failure

Vagueness, ambiguity or a truth value gap is sometimes caused by presuppositions which refer to null or are not as, expected by the speaker, known by the listener.

Example 2.5 A: Did Jack criticize you for cheating?
B: No, he didn't. / Yes, he did.
Example 2.6 Furniture in School of International Studies study linguistics, too.
Example 2.7 My father gave up smoking.
Example 2.8 I regret being too kind to those freshmen.
Example 2.9 Jack criticized me for making stupid grammatical mistakes in writing.
Example 2.10 Nicole's life has become easier since she entered UIBE.
Example 2.11 It is Professor Wu who will teach us Research Methodology and Writing instead of Huang Hao Ph.D.
Example 2.12 What I consider as the happiest is eating and sleeping.
Example 2.13 Linguistics is as boring as philosophy.

In example 2.5 *Yes, he did* appears to be the negation of *No, he didn't,* but a student who has never cheated cannot answer either *Yes* or *No,* since both answers commit him or her to have cheated. In example 2.6 it sounds strange because we all know that furniture is inanimate unable of thinking. How about studying linguistics? Is it true or false? We might then want to say that these three sentences are neither true nor false- that they have no truth-value whatsoever. This is a problem for truth-based theories, known as a truth value gap. It then follows that there is a condition for them having a truth-value, namely that the speaker must have cheated at some time or other. Such a condition is called a logical presupposition. Intuitively, the domain of a predicate is the set of all individuals for which it is meaningful to assert the predicate. The domain of *study linguistics* would thus be something like the set of all objects, which can think. The principle is then that a sentence F (a) presupposes that *a* is in the domain of F. In the analysis where failure of presupposition leads to truth-valueless sentences. We have seen that the use of a name or definite description gives rise to a presupposition of existence. Other types of presupposition are produced by particular words or constructions, which together are sometimes called **presupposition triggers**. Some of the triggers are derived from syntactic structure, for example the cleft construction in 2.11 and pseudo-cleft in 2.12. Other forms of subordinate clauses may produce presuppositions, for example, time adverbial clauses 2.10 and comparative clauses 2.13. Many presuppositions are produced by the presence of certain words, called lexical triggers, such as some factive verbs in 2.8 and verbs changing states in 2.7.

3. ILLOGICALITY IN INFERENCE

Illogicality in inference is sometimes due to violating the rules of the deductive logic or the basic rules of formal logic. Sentences don't logically imply other sentences when the rules of deduction in reasoning performed are violated.

When two sentences are related in the way that one sentence *q* logically follows the other *p*, we say that *p* implies *q*, which can be explained in the way *q* is logical consequence of *p*, if there is no interpretation in which *p* is true and *q* is false and is marked by the implication sign→. A deductive system supplies a set of rules by which one sentence can be said to follow from another. With a linguistic parallel, we can say that the rules form a 'grammar' for correct inference. Violating the rules will lead to illogicality, just like the following:

Example 3.1   A: What have you bought on the market?
B: Carrots and apples.
A: Carrot?! Are you a rabbit?
B: -----

Example 3.2   A story: 在一次宴会上, 张大千向梅兰芳敬酒说: "梅先生, 您
是君子, 我是小人, 我先敬您一杯." 梅兰芳不解其意, 忙含笑问
"此作何解?" 大千先生笑着答到: "您是君子—动口; 我是小人
—动手." 宾客为之大笑. (Li, 1984)

Example 3.3   A: Do you know eating fish can prevent us from getting near- sighted?
B: Really? Why?
A: Have you ever seen any near-sighted cat?

Example 3.4   A drunken man fell down in the street. No sooner had he risen on his feet than he felt his back trousers pocket. He was surprised to find it wet, and shouted "My God. I hope it was not my wine."

Example 3.5   Once Shavian was run down. Fortunately, he was no hurt, but The wrongdoer felt very sorry keeping apologizing.
However Shavian regretfully told him; "You are unlucky today, Sir. If you had killed me, you would become world-known overnight."

Example 3.6   A little girl asked her mom: "Mum, why do you have so much white hair?" Her mother answered: "Of course, I have, because you always won't be a good girl." At this time, the girl understood tacitly: "Mum, I don't know why all of grandmother's hair is white till now."

Example 3.7   Mother: "John, if you didn't give up smoking, you would never grow up."
Son: "But grandfather smokes and he is seventy years old now."
Mother: "If he hadn't smoked, he would have been 80 years old now."

Example 3.8   Husband: "Darling, shall we divorce?"
Wife: "Are you not happy with me? Why shall we divorce?"
Husband: "If we divorced, we can marry again."
Wife: "My god, there must be something wrong with your head.
Husband: "Not at all. You know, these years it has emptied our wallet to help our children to get married. How can we get our money back if we didn't marry again?"
Wife: "No way! I would rather never get it back than divorce with you."

There are several rules for categorical syllogism such as middle term in two premises must be extensive at least once (being violated in 3.1); four concepts in major and minor premises are forbidden (being not followed in 3.2); non-extensive minor term in premises become extensive in the conclusion (being defected in 3.3); affirmation-negation form can not be used in incompatible disjunction categorical syllogism (being weakened in 3.4); In sufficient conditional categorical syllogism, affirmative consequent can be inferred from affirmative antecedent, but negative consequent can not be inferred from negative antecedent (being violated in 3.5); In sufficient conditional categorical syllogism, negative antecedent can be inferred from negative consequent, but affirmative antecedent can not be inferred from affirmative consequent (being not followed in 3.6); In necessary conditional categorical syllogism, negative consequent can be inferred from negative antecedent, but affirmative consequent can not be inferred from affirmative antecedent (being defected in 3.7); In necessary conditional categorical syllogism, affirmative antecedent can not be inferred from affirmative consequent, but negative antecedent can be inferred from negative consequent (being weakened in 3.8), etc..

CONCLUSION

Although language is not a logical process, meaning the formation of language is not necessarily based on the laws of logic, rather, it dictates our logic how to work, and any language may have some illogical phenomena, but all the way natural, my argument is that people should be responsible for their language, so they must not be logically lazy in everyday communication.

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