

# A Non-Prototypical Perspective of Transitivity: Evidence-based Research

Cheng Yuanyuan\*

(Huazhong Agricultural University, Wuhan, Hubei, China)

## Abstract

The prototype theory on transitivity was first developed in the 1970's as a response to the Aristotelian classical theory. Despite its popularity, it has shortcomings that cannot go unchallenged including the existence of fuzzy boundaries and problems related to graded categorization. This study thus sought to refute the prototype perspective by highlighting its weaknesses by providing counter-evidence. It employed a thematic analysis methodology where 8 main sources were analyzed to find out the weaknesses of the prototypical theory and refuting their claims through empirically based counter-arguments. The thematic analysis method was important as the emergent themes directly provided answers to the research questions. The study points out that the prototype category does not solve the transitivity problem, and in fact complicates it. Due to the fact that it is constrained, the prototype category has no ultimate explanatory power. In contrast, the research is able to demonstrate the strong explanatory power of classical category theory. The implication of the study is that, to successfully falsify the prototypical transitivity is significant in that it goes against conventional thought. This argument against the prototype theory is a breakthrough and innovative, providing food for thought for linguists all across the world.

**Keywords:** transitive; transitivity; prototype theory; classical category theory; non-prototypicality

## 1.0 Introduction

### 1.1 Background into Transitivity

The concept of transitivity has, in recent years, garnered considerable attention from systemic linguistics scholars and researchers (Emilia, Moecharam, & Syifa, 2017). The word transitivity itself originates from the categorization of verbs into two different types i.e transitive and intransitive verbs, as the studying of “transitivity,” “transitive clauses,” and “intransitive clauses” has been a part of grammar for a long time. It is essentially a linguistic phenomenon that deals with the relationship that transitive clauses have with intransitive clauses (Najmiddinov & Bahodirov, 2020).

The conventional and classical perspective holds that a transitive clause is one that has both a subject and a direct object (Fiktorius, 2019).

According to this perspective, transitive clauses have an object, and an action moves from the subject to the object (Hoekstra, 2020). It is also sometimes explained that the action affects the object, and that transitive clauses can change to become passive clauses. Intransitive clauses do not have an object and there is no transfer of an action or in activity (Grossman, 2021).

Verbs can be both transitive and intransitive based on how they are used. In response to the question, “What are you doing?” one can say, “I am reading.” In this case, read is being used intransitively. Even if a phrase is added after the verb, such as ‘in the bedroom,’ it is still intransitive. The phrase in the bedroom is a complement, not an object. However, if someone asks us, ‘What are you reading?’ one responds by using read in its transitive sense, ‘I am reading a fairytale’ or ‘I am reading a scary horror novel’ In

the first sentence, 'fairytale' is the object. In the second sentence, a scary horror novel is the object" (Bidgood et al, 2021).

Historically, transitivity has been defined in a variety of ways. From a more general perspective, transitivity is considered to be a method of categorizing verbs and clauses in terms of the relationship that the verb has with other structural elements (Akabuike, 2020). In simpler terms, a transitive construction is one whereby the verb comes before a direct object, while an intransitive construction is one where the verb does not take a direct object (Almanna, 2020).

The classical viewpoint considered transitivity to be a semantic phenomenon in the sense that transitive sentences were deemed to be sentences that describe events which involve a transfer of energy from a subject to an object. An example is: "She hugged the dog" (Luo, 2017). In terms of structure, transitive sentences are mainly sentences that have a grammatical subject and a direct (accusative) object. In the classical age of formal grammar, transitivity was a strictly formal idea, where verbs (and sometimes sentences) that had a direct object were categorized as being transitive whilst verbs that did not have one were considered to be intransitive, without considering their semantics (Sihura, 2019).

## 1.2 Prototypical Transitivity

The Prototypical Transitivity perspective disagrees with how the concept of a 'transitive verb' traditionally referred to a simple dichotomy i.e. one in which a transitive verb was a verb that needed to have two argument noun phrases to form a grammatical clause, whereas an intransitive clause only needed one noun phrase. The Prototypical Transitivity perspective argues that this is not always the case as there are several languages where this fundamental distinction fails to sufficiently cover the full spectrum of possibilities (Taylor, 2019). This perspective is premised on the "Prototype Theory," which is a theory of categorization in cognitive linguistics in which there is a graded degree of belonging to a conceptual category, with certain members being more central than others (Taylor, 2019).

The Prototype perspective can be traced back to 1971 to the work of psychologist Eleanor Rosch. It has been considered to be a "Copernican revolution" in the theory of categorization due to the fact that it markedly deviates from the conventional Aristotelian categories (Kuhn & Thoreau, 2019). According to Rosch, the word 'prototype' refers to a stimulus that takes a prominent position when a category is being formed because it is the first stimulus that is connected to that category. She later refined the term, defining it simply as the most central member of a category (Chen & Jiang, 2018).

Rosch developed this thinking after carrying out a number of experiments where the study participants were asked the following questions:

1. Decide for each of the following categories if it is a vehicle:

(i) train, (ii) bike, (iii) car, (iv) boat, (v) truck.

2. Is a chicken a typical bird? Is a sparrow a typical bird?

3. Indicate on a seven-point scale how well the following words represent the category fruit:

(i) orange, (ii) lemon, (iii) apple, (iv) peach, (v) pear, (vi) melon (Diessel, 2017).

The answers to the above questions indicated that categories are arranged around a best example, and this best example is what Rosch referred to as a "prototype" (Diessel, 2017).

Rosch proposed the prototype theory as a reaction to the classical theory of concepts, which considers concepts in terms of necessary and sufficient conditions whilst Rosch considered necessary conditions to be a set of features that a concept must present every time, whilst sufficient conditions are those that no other entity possesses (Löhr, 2020). Instead of defining concepts in terms of features, Rosch defined categories in terms of a set of entities within the category that represent a prototypical member or according to a specific artifact of that category (Westera et al, 2021). In layman's language, this perspective proposes that the prototype of a category can be understood by the object or member of a class that

is usually associated with that class. The prototype is the heart of the class, while all other members successively advance away from the prototype, which results in the gradation of categories. Each member of the category is not equally central in human cognition (Löhr, 2020).

This perspective is widely held in the field of linguistics. However, it does have its opponents who uphold a non-prototypical perspective. The following discussion follows in this same vein, and is a Non-Prototypical Study of Transitivity, which demonstrates the flaws of the prototypical theory and the strengths of the classical theory. Transitivity as a prototype category does not help to solve problems in traditional grammar. Therefore, the following study shall make an effort to refute the widely held notion that transitivity is a prototype category by demonstrating the inherent problems with prototype effects. Based on a review of various studies, the following discussion shall argue in favor of the classical category concept on transitivity.

### 1.3 Problem Statement

Despite being widely embraced in the field of linguistics, the prototype perspective is fraught with difficulties that cannot go unchallenged. The prototype category merely copes with the pragmatic operations, and the prismatic interpretations of the phenomena. As a matter of fact, it has gone further and lapsed from the research on the language itself, so it does not shape the plenitude for the nature of language, saying nothing of the transitivity problem, which in fact complicates the transitivity problem. In respect of the fact that it is rather unilateral and restricted, the prototype category has no ultimate explanatory power at all (Heaton, 2018).

### 2.0 Research Objectives/Questions

Inspired by the previously discovered prototype effects on categories and different from the assumption that the matter of transitivity is considered as a grammatical prototype showing the prototypical transitivity, the present research

attempts to investigate the nature of transitivity, with the aim to find the proof to falsify the hypothesis that transitivity shows prototype effects, in the process affirming the essence of non-prototypical transitivity. Moreover, it seeks to back the non-prototypical transitivity perspective by providing counter-arguments against prototypical transitivity, which is connected with the prototype category. In that regard, the discussion seeks to achieve the following main objectives:

1. To critically analyze and refute the prototypical view of transitivity
2. To support the non-prototypical transitivity perspective by providing counter-arguments against prototypical transitivity

Towards this end, the study will be attempting to find answers to the following key research questions:

1. Is the prototypical view of transitivity correct or incorrect?
2. What counter-arguments against prototypical transitivity exist that support the non-prototypical transitivity perspective?

### 3.0 Theoretical Framework

This discussion is premised on the classical Aristotelian theory of categorization, which postulates that the boundary between transitive and intransitive verbs is clear-cut (Taylor, 2017). Transitive verbs differ from intransitive ones with respect to their syntactical structure as opposed to the semantic values. This is the distinguishing factor according to classical theory.

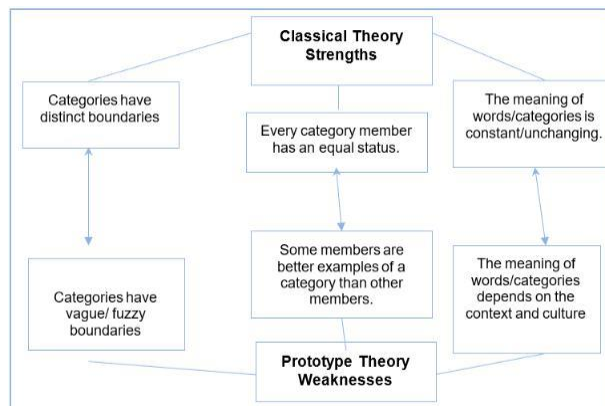
Another central idea of this theory is that categories are distinct entities that share properties with their members. According to the theory, these properties determine the required conditions that are adequate enough to properly capture meaning, and the category features are the necessary conditions (Qiang, 2014). As such, to be considered as a member of a particular category, an item needs to have every feature. Categories

center around a prototype, and category membership depends on the family resemblance with the prototype rather than on the binary features (Wang, 2016).

According to the classical perspective, categories ought to be defined very clearly, fixed, collectively exhaustive and mutually exclusive (Baier, 2016). As such, any entity of a category clearly belongs to only one (and not more than one) of the proposed categories. Consequently, for an entity to be a member of a category they have to share all characteristics of that category. Every category member has an equal ranking; no members of a category are more important than the others (Qiang, 2014). Therefore, the traditional category theory views the status of category

members to be equal whereas the prototype category theory posits that there are two different kinds of category members: prototype members and the non-prototype members (Qiang, 2014). The prototypical view of categories thus takes a contrary position to the classical view, whereby the transitivity of verbs is thought to be a grammatical prototype in the prototypical theory frame (Bidgood et al, 2021). Table 1 (see appendices) shows some of the general distinctions between the classical theory and the prototype theory (Diessel, 2017).

The current research is founded upon the conceptual framework below as developed based on the strengths of the classical theory vis a vis the weaknesses of the prototype theory:



Source: Author (2022)

#### 4.0 Literature Review

Different studies and discourses have been undertaken that focus on two category theories and the grave significance of each of them. Several scholars (e.g. Zhou et al (2022; Zeifert (2020); and Watson (2019) have detailed how, at the end of the seventies, an alternative model to classical theory emerged in the field of lexical semantics, the theory of prototypes. The theory has received a fair amount of attention in linguistic literature, even in recent years, from various researchers including Taylor (2019) and Jiang and Chen (2017) among others. This theory has increasingly been applied to linguistic phenomena that extend beyond the restricted concerns of lexical

semantics: phonological, morphological, syntactic, and textual phenomena (Chen & Jiang, 2018). The impact of the prototype theory based on cognitive linguistics therefore cannot be ignored or understated.

Nonetheless, whereas the prototype theory is widely applied in the field of cognitive linguistics, it certainly has its shortcomings that have been highlighted in literature. A number of studies have been carried out that provide sufficient counter-arguments against prototypical transitivity. Indeed, this perspective has received criticism from proponents of the structural semantics paradigm and linguists who are in favor of the traditional theory of categories such as Eugenio

Coseriu (Bellig & Willems, 2021). Contrary to the classical view, the prototype thinking believes that prototypes and gradations result in an understanding of category membership as a chain of interconnected categories that overlap, instead of having an all-or-nothing approach to prototypes. According to this prototype theory, any given concept in any given language has a real world example that best represents this concept. For example: when asked to give an example of the concept furniture, a couch is more frequently cited than, say, a wardrobe. Prototype theory has also been applied in linguistics, as part of the mapping from phonological structure to semantics.

Furthermore, as Taylor (2017) revealed, even though prototype categories are assumed to give us the best of both worlds—cognition and reality—it does not touch upon the mechanism of language. The central members of a prototype category do share a large number of attributes hence full membership. Herein, the center of a prototype category approaches the ideal of a classical category to some extent. At the same time, prototype categories permit membership to entities, which share only a few attributes with the more central members. It should be noted here whether members in a category are treated equal has become the line of demarcation between classical category theory and modern prototypical category theory (Riehl & Verity, 2022).

Lingzhen & Yanyan (2020) further argue that the prototype theory relies on experientialism; it is not founded entirely on facts and evidence. Instead, the core of category construction is an imaginative mechanism. Moreover, prototype theory considers the nature of categorization to be tied to human's experience and imagination. On the one hand, it contains the elements of perception, action and culture; on the other hand, it is the product of metaphor, metonymy and mental images (Tincheva, 2017). Essentially, the prototypical perspective has as its basis superficial language performance.

In contrast, as Topal (2018) revealed, Aristotle's classical theory is founded on the features of objectivity, dichotomy, irresolvability, universality, abstractness, and innateness. Even in linguistics, it deals with concrete facts and not

imagination, and this is in keeping with its application in other fields such as mathematics, physics, chemistry and so forth are also feasible. The classical theory is founded on the structural linguistics and formal linguistics of the 1920s such as the syncopation of the phoneme and semantic constituents (Matthiessen et al, 2022).

While it does have significant support, evidence also reveals that the prototype theory has not posed a real challenge to cause the eradication of the classical category theory completely. Several researchers have called into question its veracity. For instance, the linguists Stephen Laurence and Eric Margolis carried out and published a very damning study where they clearly outlined the numerous problems with the prototype theory. An example of the problem they highlighted was that prototype theory does not grade categorization properly. They carried out an experiment, and when subjects were asked to rank how living certain members exemplify the category, they rated some members above others. For example, robins were seen as being "birdier" than ostriches, but when asked whether these categories are "all-or-nothing" or have fuzzier boundaries, the subjects stated that they were defined, "all-or-nothing" categories. Laurence and Margolis concluded, "prototype structure has no implication for whether subjects constitute a category as being graded" (Irribarra, 2021).

Moreover, according to Axtamovna (2022), the creator of the theory herself (Rosch) even cautioned against two sources of confusion in the discussion of prototypes: the first being that the concept of prototype was evolving to mean a specific category member or mental structure when that was not her initial premise; the second being that study findings about prototypicality were being mixed up with theories of processing and there was thus emerging an inability to make a distinction between the structure of categories and theories on the use of that structure in processing.

Furthermore, other studies have revealed that the theory does not have methodological principles and procedures of data gathering and interpreting. Despite its wide usage and acceptance, it oddly does not have a methodology or guidance on data gathering and interpretation. Apart from studies

on prepositions, the prototype theory has never developed a clear, replicable method that can be used to test its applicability on new data (Jenset & McGillivray, 2017).

Finally, Douglas Medin and Marguerite Schaffer are researchers who carried out experiments that provided evidence that a theory of classification that derives concepts purely from exemplars such as the exemplar theory was more effective than the prototype theory (Lieto, 2018).

## 5.0 Research Methodology

The research method is the inductive analysis approach. This is a qualitative method of content analysis that is employed to develop theory and identify themes by studying documents (Kiger & Varpio, 2020). Approach to data analysis that aims at deriving more general concepts through interpretation of raw textual data (Kyngeäs, 2020). Specifically, the research used the thematic analysis method, which involved seeking for emerging themes that provide counter-arguments to arguments from the literature and studies of other researchers and scholars. It entailed finding the entry point of the flaws of the prototype perspective on transitivity from previous studies, and conducting a process of counter-evidence against these omissions so as to prove the inadequacy and unscientific nature of these previous views, and finally derive contrary views based on empirical evidence. This research therefore analyzed numerous studies and texts that have been written in favor of the prototypical theory of transitivity and sought to find out the errors and weaknesses in these texts.

The relevant data was obtained using a keyword search of a number of literatures that have been published in the last 10 years 8 sources were found from online journal databases such as JSTOR, ProQuest, and Google Scholar. As part of this process, emerging themes within the selected appropriate studies were highlighted and then noted down (Kiger & Varpio, 2020). Thematic codification was undertaken whereby sections of text that discuss the prototype theory and its principles were highlighted and then the texts were divided into categories, in the process a framework of thematic ideas was developed

(Castleberry & Nolen, 2018). This involved the categorization of emerging themes by organizing data into groups in relation to their similarity, ranking them, and then arranging them in relevant rows and columns with respect to their commonalities.

The use of thematic analysis enabled the researcher to identify and organize the data into patterns that provided meaning to the research topic and helped to answer the research questions because the emerging themes provided direct answers to the research questions. As the study is qualitative in nature, meanings have been derived from words rather than numbers or statistics.

## 6.0 Research Findings

The aim of this study is to find proof that can falsify the hypothesis that transitivity shows prototype effects, in the process affirming the veracity and truth of non-prototypical transitivity. In that regard, the discussion sought to achieve the following main objectives: to critically analyze and refute the prototypical view of transitivity; and to support the non-prototypical transitivity perspective by providing counter-arguments against prototypical transitivity.

Following this thematic analysis process, here are the findings generated based on the emergent themes that provide evidence that the prototype view cannot go unchallenged and is plagued by a number of challenges as presented in the analysis below:

### 6.1 Theme 1: Fundamental Problems with the Theorizations of the Prototype Theory

Cognitive linguistics lags behind with respect to theorizing and experimenting except using some unsystematic anecdotal cases as evidence (Strickland, 2017). The prototype is not properly explored, nor is a new theory adopted and formulated. The prototype theory still persists in a chaotic form despite protests, reviews and cautions raised as early as 1989 (see Geeraerts, 1989; Wierzbicka, 1990; Nuyts, 1993). This is partly due to its properties like fuzzy boundaries, family resemblance, central and peripheral

members that give room for throwing out inadequate analysis to readers. It seems that for every exception in linguistics, the prototype is used as a firefighter, face saving mechanisms. This creates chaos and confusion for students of linguistics who recently joined the exploration.

The prototype model is a misunderstood concept in cognitive linguistics, partly due to its overlap with a schema model (Axtamovna, 2022). It receives very wide coverage despite the fact that it lacks methodology and correct procedure expected of data gathering and interpretation. Rosch herself also warned of the two sources of confusion in the discussion of the prototype. The first is the notion of prototype has tended to become reified as though it meant a specific category member or mental structure. The second source of confusion is the empirical findings about prototypicality have been confused with theories of processing – that is, there has been a failure to distinguish the structure of categories from theories concerning the use of that structure in processing. Moreover, typicality differences for Rosch is an empirical fact of people's judgments about category membership (Zeifert, 2022).

The prototype model lacks methodological principles and procedures of data gathering and interpreting. Except for studies on prepositions, there is no clear replicable procedure or technical guide to test its applicability on new data. On the other hand, the prototype model is considered as a catchall theoretical device.' Just to cite some, the prototype model has been unjustly enlarged or too broadly used as an explanation before all relevant aspects (Zeifert, 2022). The notion prototype should not be turned into a catchall theoretical construct.

Rosch noted that, in semantics, the actual usage of words is too messy, too unpredictable to be accounted for by definitions but fortunately, semanticists do not have to worry about it any longer: they can now deploy the notion of prototype for all residues and unsolved problems. Rosch, instead, suggests the usefulness of the prototype model as a specific, probably powerful analytical tool, and not as 'a universal thought-saving device.' In other words it is a useful tool for semantic description but not a useful full-fledged semantic theory by itself. It has been observed in

cognitive psychology literature that the prototype model has no inbuilt mechanism to handle relations and strength or weight of features or combinations (Axtamovna, 2022).

## 6.2 Theme 2: Problems with Graded Categorization

Linguists, including Stephen Laurence writing with Eric Margolis, have suggested problems with the prototype theory. In their paper, they raise several issues. One of which is that prototype theory does not intrinsically guarantee graded categorization. When subjects were asked to rank how well certain members exemplify the category, they rated some members above others. For example robins were seen as being "birdier" than ostriches, but when asked whether these categories are "all-or-nothing" or have fuzzier boundaries, the subjects stated that they were defined, "all-or-nothing" categories. Laurence and Margolis concluded that prototype structure has no implication for whether subjects represent a category as being graded (Zeifert, 2022). Problems arise when the notion of a prototype is applied to lexical categories other than the noun. Verbs, for instance, seem to defy a clear prototype: [to run] is hard to split up in more or less central members.

## 6.3 Theme 3: The Limits of Conceptual Boundaries

The prototype perspective fails to capture people's knowledge about the limits of conceptual boundaries. To illustrate, even though a Pomeranian seems in many ways more similar to a Siamese cat than to a Great Dane, the Pomeranian and Great Dane are classified together as dogs. The prototype view has a hard time telling us why. Unlike the classical view, which sets constraints or boundaries around which things can and cannot belong to a category, the prototype view does not specify clear constraints (Cuper & Cuper-Ferrigno, 2021).

Rosch and colleagues have argued that some part of the constraints around different categories comes from the environment itself. Having wings

and being able to fly, for example, tend to co-occur, often in those things we call birds (but also in airplanes, butterflies, and insects). Boundaries between categories, then, come not from us as cognitive processors of information but from the way the world works: Certain patterns of attributes or features occur in the world and others do not. People's main job in categorizing, then, is to pick up information about the world's regularities, not to impose arbitrary groupings, as the classical view might imply (Cuper & Cuper-Ferrigno, 2021).

#### **6.4 Theme 4: Problems with Typicality Ratings**

Another weakness of the prototype theory is with respect to typicality ratings. The typicality of an instance depends to some extent on context. So although a robin might be seen as a very typical bird in the context of birds that you see in the neighborhood, it is very atypical in the context of birds you see in a barnyard. These findings contrast with the idea that a member of a category has a certain level of typicality. Instead, typicality apparently varies with the way the concept itself is being thought about (Geeraerts, 2016).

Studies by Armstrong, Gleitman, and Gleitman (1983) demonstrated additional problems with typicality ratings. In these studies, the investigators asked participants to rate the typicality of instances of both natural concepts (e.g., "vehicle," "fruit") previously studied by Rosch and her colleagues and of well-defined concepts (e.g., "even number," "female," "geometric figure"). Armstrong et al. found that participants happily rated the typicality of members of well-defined categories, generally agreeing that 3 is a more typical odd number than is 57, for example. The same participants also agreed, however, that the category "odd number" was well defined and that it makes little sense to talk about degree of membership in the category: numbers either are or are not odd. The investigators concluded that the typicality ratings task is a flawed one, at least for discovering the underlying representation of concepts (Geeraerts, 2016).

#### **6.5 Theme 5: Problems with Compound Concepts**

A guppy is not a prototype pet, nor a prototype fish, but it is a prototype pet-fish. This challenges the idea that prototypes are created from their constituent parts. Daniel Osherson and Edward Smith raised the issue of pet fish for which the prototype might be a guppy kept in a bowl in someone's house. The prototype for 'pet' might be a dog or cat, and the prototype for 'fish' might be trout or salmon. However, the features of these prototypes do not present in the prototype for pet fish, therefore this prototype must be generated from something other than its constituent parts. Antonio Lieto and Gian Luca Pozzato have proposed a typicality-based compositional logic (TCL) that is able to account for both complex human-like concept combinations (like the PET-FISH problem) and conceptual blending. Thus, their framework shows how concepts expressed as prototypes can account for the phenomenon of prototypical compositionality in concept combination (Zeifert, 2022).

#### **6.6 Theme 6: Problems with the "Basic Level categories" concept**

Another notion related to prototypes is that of a basic level in cognitive categorization. According to the argument, basic categories are relatively homogeneous in terms of sensory-motor affordances — a chair is associated with bending of one's knees, a fruit with picking it up and putting it in your mouth, etc. At the subordinate level (e.g. [dentist's chairs], [kitchen chairs] etc.) few significant features can be added to that of the basic level; whereas at the superordinate level, these conceptual similarities are hard to pinpoint. A picture of a chair is easy to draw (or visualize), but drawing furniture would be more difficult. Rosch defined the basic level as that level that has the highest degree of cue validity. Thus, a category like [animal] may have a prototypical member, but no cognitive visual representation. On the other hand, basic categories in [animal], i.e. [dog], [bird], [fish], are full of informational content and can easily be categorized in terms of Gestalt and semantic features (Zeifert, 2022).



Clearly semantic models based on attribute-value pairs fail to identify privileged levels in the hierarchy. Functionally, it is thought that basic level categories are a decomposition of the world into maximally informative categories. Thus, they maximize the number of attributes shared by members of the category, and minimize the number of attributes shared with other categories. However, the notion of Basic Level is problematic, e.g. whereas dog as a basic category is a species, bird or fish are at a higher level, etc. Similarly, the notion of frequency is very closely tied to the basic level, but is hard to pinpoint. More problems arise when the notion of a prototype is applied to lexical categories other than the noun. Verbs, for example, seem to defy a clear prototype: [to run] is hard to split up in more or less central members (Zeifert, 2022).

### 6.7 Theme 7: Evidence in favor of Non-Prototypicality

In defense of the classical theory on transitivity, it must first be pointed out that the phenomenon of transitivity is intimately connected with complex semantic and morphosyntactic parameters. It involves a number of components, only one of which is the presence of an object of the verb. Hopper and Thompson developed a model of transitivity where they suggest a classification list of transitivity parameters (Vartiainen & Höglund, 2020), as shown in Table 2 (see appendices).

A clause that has one of the above semantic features will morpho-syntactically be more like a typical transitive clause than another identical clause, which lacks that feature. According to their list, ‘the canonical transitive clause has two participants, reports a kinetic event, is punctual and perfective, has a definite referential, individuated, and wholly affected patient and a volitional agent which ranks high on the animacy hierarchy, and is affirmative and realis’ (Halevy, 2020). For example:

- (1) Anna likes roses.
- (2) Forest beat his son.
- (3) 老刘走了。

Lao Liu left.

- (4) 老刘喜欢香烟。

Lao Liu likes cigarettes.

According to the examples cited above, (1) is more like a prototypical transitive clause or it is higher in transitivity than (2) due to the fact the former possesses some properties that the latter lacks. To put things more clearly, (1) is punctual and perfective and has an individuated and totally affected patient. (3) is kinetic, perfective, punctual and has a volitional agent while (4) has only one property—two participants. Therefore, (3) is more approximate to a canonical clause than (4) is. From the perspective of the traditional grammar,

走 in (3) is an intransitive and 喜欢 in (4) is a transitive verb. However, on the basis of the semantic criterion of the prototype category theory, there is another case, that is to say that (3) is more suitable for the standard of the prototypical transitivity than (4). In other words, according to the designed maxims, the traditional transitive verbs may be not higher transitives than intransitives.

From the above standards, even the same word may display different transitivity prototypical features because of the different verb collocations in different sentences. For example:

- (5) a. 老李打了一阵乒乓球。

- b. 老李打了老婆。

According to the traditional perspective, 打 of both sentences are taken as a transitive verb. Though it is the same transitive verb 打, the transitivity of (5b) is higher than (5a), relying on the above criterions. (5b) presents five features: action, telic, punctual and two participants while (5a) only shows three: action, telic and two participants. In addition, even if both of them have two participants, from the referred semantic features of objects, the transitivity of (5b) is also higher because it satisfies two rules: ‘object totally affected’ and ‘object highly individualized’ compared to ‘object not affected’ and ‘object non-

individualized' in (5a). This analysis reveals that the same word can be concluded to be the different transitivity degree with the different collocative relations. It is evident that this inference mixes our formal logic realization eventually.

Moreover, it is hard to give an affirmative answer about those transitive verbs without a represented object according to their continuum view and that corresponding table. Chinese verbs are not followed by their objects in idiographic sentences, and in the specific situation, the object is always absent, however, the absence is not equal to non-existence. For instance:

(6) a: 她看电影了吗?

b: 看了。

The object does not appear in the answer (6b), but it is not tolerable without the object when we catch on it, and we recollect for the object 电影 from the above paragraph or the context. Furthermore, this apprehending process is self-conscious. It is possible to disport transitive verbs and intransitive verbs, not to be unclear, while we can do it by dint of the powerful logic tool. If need be, the absent object can be completed. Therefore, the verb in (6b) is still a transitive verb, not the intransitive one in the superficial performance. That again responds to the representational ability of language.

Default semantics adheres to the view that pragmatic sources of information operate independently of the grammar. In other words, the output of syntactic processing does not dictate what additions are required; there need not be any 'slots' in the logical form that need to be filled. This is what 'top-down' pragmatic processing; (7a), repeated below, is pragmatically enriched to (7b), although there is no slot in the syntactic representation that signals a missing argument (Jaszczolt, 2019).

(7) a. I haven't eaten.

b. I haven't eaten dinner [or some other meal appropriate for the time of day at which the utterance was made] yet.

Through the above two languages performance, it is clear that the appearance of an object (or lack of appearance) cannot reveal which is more transitive, for *eaten* it is undoubtedly a transitive verb though the object is a default value here. Actually we often express like (7a) rather than (7b) in our daily life, similar to the Chinese communication (6b) 看了 instead of the utterance 看了电影 for the economic principle and conventional usage in practice.

The result from this case implies that whether or not objects follow verbs is not to be the only criterion of judging the transitives. This paper takes their criteria as insufficient in that semantic parameters are clearly only a part of them. Other factors may be involved in such syntactic properties. Transitivity, as defined by these parameters, shows a high degree of correlation with foregrounded information. To be slightly different, the transitivity complex is believed to exist in order to function as a means of coding foregrounded information in discourse. So they put much emphasis on discourse rather than transitivity itself. In some way, their study is typological because they subdivide transitive verbs and intransitive verbs into four categories: transitive verbs showing high level of transitivity, transitive verbs showing low level of transitivity, intransitive verbs showing high level of transitivity, and intransitive verbs showing low transitivity. However, we do not see much significance of that subdivision of verbs, we cannot find their list of semantic properties inspiring.

In addition, Hopper and Thompson summarized the prototypical features of transitivity. One point of it is that, whether a verb is followed by an object or not is not the exclusive standard of transitives or intransitives (Guajardo, 2021). As transitive verbs can also be vacant, and this absence might be considered to be the object default of the synchronic stage, it is hard to say that object occurrence clause has higher transitivity than that of absence of object. For instance in the following communication:

(8)a. 他吃饭了吗?

b. 吃了。

c. 吃饭了。

It seems that 吃 in (8b) is an intransitive verb in the superficial level, but actually a transitive one omitting its object. And in fact the default value of (8b) might be inferred by the context and prominent like (8c). Therefore, it is no reason to point out that 吃 in (8c) is more transitive than 吃 in (8b) and even ignore the transitive value of 吃 in (8b). It is stated that this fact responds to the principle of structure determining function or relation deciding value. The fact is that there is only one counter evidence that can be persuasive enough to challenge the hypothesis then the model.

## 7.0 Discussion

Based on the above analysis, it is evident that the cognitive perspective on prototypical theory poses no threat to the classical account of transitivity. With all the highlighted flaws and challenges of this perspective based on the analysis above, it appears as if cognitive linguistics clings to prototype theory merely because it is considered by scholars within cognitive linguistics to be one of the three cognitive linguistics' fundamental tenets with schemas and basic level categories. If applications are taken as the transitivity category itself, our lexicon would not have such a capacity, and communication would be impossible. In light of their 'it goes without saying' type of perspective, the prototypical transitive clause possesses most of the semantic properties, thus most representative of the transitivity category. It is evident that all of these semantic features have an experiential basis corresponding to Langacker's canonical event model. What is more, they believe that this fact also coincides with the interactional nature of properties that are seen to determine the prototype of a category, and such bodily interaction with the outside world Lakoff believes from clusters in our experience, and the prototype can reflect such clustering. However, how can the highest level of transitivity in terms of those rules be judged?

Several questions exist. Is the determination of a prototype definite and clear? Are transitives prototypical and the pre-appearing to be undoubtedly prototypical as well? Then which one is the pre-existence, transitives or intransitives? Is it possible that as long as it is more applied frequency, then it is more prototypical? Frankly speaking, the prototype category is not able to answer these fundamental questions of the transitivity problem, and then the prototypical transitivity is on the verge of imminent death. Therefore, the so-called prototypical transitivity wherewith to shake the ground of the foundation of the classical category is but a whim.

Through our analysis and discussion, we see that a level of language performance does not support the prototypical transitivity position and can do nothing to refute the traditional perspicuous intention in transitivity. The semantic properties of a single verb are fully maintained no matter if it is a simple or complex expression. There is no surplus usage accruing to a verb no matter transitive or intransitive such an assumption is not attributable to the principle and parameters mechanism of natural language. Therefore, their semantic standards are full of dispersion. At least, we point out that their declaration cannot interpret the phenomenon of the French expression, for instance *Je me lave les mains*. It is an actual representation of semantic criterion through our logical evaluation.

Furthermore, proponents of the prototype theory themselves have misunderstood the nature of language and the laws of human thought again. Although the prototypical view works very well in some aspects, and prototypicality can hold in terms of aesthetics or pragmatics, it is of no help to the subversion of the classical category view of transitivity, because the pragmatic understanding or effects and prismatic meanings or interpretations are not the transitivity problem itself. Even so, the effect orientation is irrelevant to the category itself, because even one isolated verb may cause different effects to different people according to their perspective.

The so-called prototypical transitivity is an individual criterion at most and the reflection of subjective psychology construes the different sensual relying on the different individual, and

then comes up to the obviously differentiated results. These conclusions based on the individual subjective experience and the surface inductions throw away the binary-opposition of the classical category theory on one hand, and the gestalt on the other hand, therefore the cognition of human knowledge is not all sided aspects but unilateral. And their argumentations can hardly satisfy the scientific demands of the logical clear-cut and hierarchy.

A fatal blow to the so-called prototypical transitivity argument against the traditional transitivity is that even one simple usage of a verb, which we may call a simplex expression in contrast with the complex one, has many, actually infinite, applications or modulability of parameters, and gives rise to different interpretations. If applications are taken to the transitivity itself, our lexicon would not have such a capacity, and communication would be impossible. In brief, the prototypical view of transitivity takes a linear or continuum relation instead of a hierarchical relation, phenomenal instead of natural, semantic instead of syntactic, and sensual instead of logical in practice.

The paradox of the prototypical viewpoints lies in the fact that since there is no clear boundary between the transitivity prototypicality and the non-transitivity prototypicality then the transitive and the intransitive are merely the problem of different degrees. The fact is that, there is no definite distinction between transitivity and non-transitivity because you might say an intransitive verb as the lower prototypical transitive one, and also a transitive verb is the lower prototypical intransitive one. Then the tension between two categories is deconstructed. To be A or not to be A is determined by the anthropic principle, for humans always have to make a choice between 'to be' and 'not to be', and our choice might be false though. And we could not say a verb either the transitive or the intransitive. Essentially speaking, to be A or not to be A means the opposition of the choice, which is not constrained into two things routinely and also the opposite of each two among many items. Therefore, even if the middle verbs cannot violate the law of excluded middle in the deductive logic, and they are not the mistiness of that two categories either the transitive or the

intransitive, in particular, the category of middle verbs is opposite to each category either the transitive or the intransitive, which definitely has no violation of the binary-opposition in the classical logic sense.

## 8.0 Conclusions, Implication and Limitation

This analysis is one of the first examinations that have been undertaken to refute the prototype theory in linguistics with respect to transitivity. The main focus of the study has been on the refutation of the prototypical view and the incompleteness of the conclusions that this view provokes through a number of counterexamples. The paradoxical nature of the prototypical view of transitivity has been revealed, and the clarity of the classical category theory of essence is defended. Thus, considering that the prototypical hypotheses in transitivity cannot hold, the non-prototypical transitivity should be affirmed.

My view is that the transitive and the intransitive are not in any way intersecting, but are completely opposed categories, i.e. the boundaries of the transitive category are clear. The prototypical category works only at the level of discursive interpretation, a diamond-mirror reading of the phenomena, and does not explain the problem of tangibility.

Based on the above discussions, I come to the conclusion that prototypicality is irrelevant to transitivity, as a grammatical category. The prototypical transitivity may not be of great help for us to solve the so-called problems in classical theory. On the contrary, the realization of non-prototypical transitivity helps us recognize the true nature of transitivity.

I conclude that there is no prototype of materiality per se, but only in terms of people's cognitive-philosophical understanding. If we were to base the division on knowledge and understanding, we would be left with no basis for the decomposition of archetypal features, which would inevitably result in a semantic decomposition that is too cumbersome and too attentive to detail, which is inconsistent with the basic laws of human thought. There is a tension, so to speak, between the

transitive and the intransitive, which can be modified or compromised at any time when the need arises. A transitive verb can be used as intransitive and an intransitive verb can be used as transitive. Once a verb appears in a specific syntactic structure, either as a transitive verb or as an intransitive verb, it is inevitable that one will be chosen. This also happens to prove once again that categories are dichotomous. It is also evident that there is a tension between the phenomenal and the essential and that the phenomenal must not be substituted for the essential, blurring the clarity of the essential

Overall, while cognitive psychology has advanced significantly in recent years in terms of experimenting and formulation of alternative models and theories and tackling the main problem of concept study, i.e., conceptual combination, cognitive linguistics lags behind in theorizing and experimenting except using some unsystematic anecdotal cases as evidence. In short, neither the prototype is properly explored, nor a new theory is adopted and formulated. In actuality, cognitive linguistics clings to prototype theory till now as it is considered by almost all students of cognitive linguistics as one of the three cognitive linguistics' fundamental tenets with schemas and basic level categories. The initial success of cognitive linguistics is that it managed to bridge the gap between formal syntax and morphology and relate the semantic aspects of grammar with their common conceptual basis.

Nevertheless, even though there have been strong criticisms of the prototype theory's misuse, overuse, its misunderstanding, methodological challenges, sloppiness and weaknesses, we must conclude by noting that it is nevertheless a very useful descriptive device for word classes especially for nouns in cognitive psychology and prepositions in cognitive linguistics. Therefore, whereas it may be problematic with respect to transitivity/transitive verbs, it is useful when it comes to nouns.

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