# The Perceptual Foundation of the Thai Classifier System

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#### Introduction

This paper is a development from a larger study (Placzek 1984) of noun classifiers in Standard Thai or ST. I adopt the view that all categories in natural language are founded upon prototypes, a conclusion also reached by Lyons (1981: 73). The general theoretical background is supplied by Rosch's work on prototypicality (for example, Rosch 1978) and Hunn's work on inductive versus deductive processes of categorization (especially Hunn 1976; 1982). The basic data for the paper is taken from various dictionaries and from several interviews with native speakers from Bangkok. Much of the data appears in Placzek (1978; 1984) and is appropriately referenced where necessary.

#### Overview

Classifiers apply to nouns by two main criteria: either perceptual or generic (that is, "kind of thing"). This distinction is discussed at some length below. Perceptual criteria are primarily visual; in particular, they are based upon shape in the vast majority of cases. Generic criteria, in contrast, are a mixed grouping of factors, some perceptual, some functional or material, which depend upon a notion of "kind" or "essence." Ultimately, generic criteria are seen to be anything other than that which provides a (shape-based) single unit referent named by the noun. In this paper, examples are first given of purely generic, purely perceptual, and ambivalent classifiers. Next, a survey of a selection of classifiers is made. The selection is of the most common classifiers 1) that apply to concrete objects, 2) that apply to wide ranges of objects, or have extended ranges of application, and 3) that are of the ambivalent type. Within these limits of selection, it is apparent that in almost all cases the generic value may be derived from the

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perceptual, but not necessarily vice versa. In a historical view, these conclusions should be valuable in the long-term project of reconstructing the Proto-Tai classifier system.

### Generic and Perceptual Criteria of Classification

There is a certain amount of difficulty with the notion "generic" as I am using it here. Although the term causes confusion for those with backgrounds in biology or folk taxonomy, I shall continue to use it rather than earlier choices such as "essence." In present usage, the term does not refer to a specific taxonomic level of organization, although the implications for such taxonomic relations are unavoidable in some cases. Basically, generic criteria of classifier applicability refers here to criteria that may subsume a number of perceptual, functional, material, stereotypic, and other characteristics into a unified concept<sup>2</sup> of the "natural kind" or essence of the referent named by the noun (that is, the thing classified). Thus, a simple definition of generic criteria is any criteria other than perceptual, where "perceptual" is based primarily on shape. Here, some examples will be useful.

Generic Classifiers. A purely generic classifier in the Standard Thai (ST) system is *khon* 'person'. This classifier applies to people in all cases except especially revered people, for whom special honorific classifiers take precedence. This classifier apparently applies simply because it is people being referred to, and not because there are any combinations of shape or other perceptual features present. Thus, human-shaped figures are not counted with *khon*, and to count people by shape (literally as "bodies") is to degrade them. The criterion here is "being a person," and, as indicated above, it is no simple matter to define exactly what a person is in Thai or any other society. Being a person or not being a person is a complex bundle of characteristics involving primarily the ability to interact socially. Whatever "being a person" amounts to in Thai or other societies, it is more than the perception of a human shape. This is a good example of generic criteria of classification.

If we look at the semantic values of *khon* in its classifier function, we find the generic criterion of "being a person" applies—never "shape." As a noun in compounds, *khon* also means 'person', never 'shape'. As an independent noun (a category defined more precisely below), it similarly can have only generic value as 'person'.

<sup>&</sup>lt;sup>2</sup> Hunn (1976) has described psychological processes that result in just such a gestalt-like fusion of a variety of characteristics that tend to co-occur in nature. Other research notes that the resulting gestalt may not actually occur in nature, but it is rather a blending of a range of characteristics that tend to co-occur. See the more thorough discussion in Placzek (1984).

<sup>3 &</sup>quot;Natural kind" would be a better label than "generic," except for the anomaly of applying it to man-made artifacts that also have their own "essence" or "generic" character.

The very fact that generically based classifiers can occur with independent noun function has certain diachronic implications, namely that they appear to be later additions to the system, borrowed into the classifier lexicon from the main lexicon.

**Perceptual Classifiers.** In contrast to purely generic classifiers, we have examples of purely perceptual classifiers such as *sên* for 'lines', or *phèn* for 'planks or plates'.

The classifier  $s\hat{e}n$  applies generally to a wide range of nouns that are all long and flexible, such as blood vessels, nerves, noodles, necklaces, drawn lines, strings, and so on. It also applies to routes, paths, and conduits that appear long. No single generic value appears to motivate the application of  $s\hat{e}n$  to a noun, except the dominant impression of being saliently one-dimensional (S1D), plus the secondary criterion of being flexible.<sup>4</sup>

The word *sên* cannot stand alone as a one-place predicate, as can *khon* 'person'. If we devise as contextless as possible a situation to test this, we might try a telephone call context or a quiz show context, both of which ask informants to respond in a natural way in a minimal-context real-life situation. For example:

#### (On the phone:)

thii nôon mii khon yùu máy (answerable) (over) there exists person (stay) Q
Are there any people over there?

thìi nôon mii sên yùu máy (unanswerable) (over) there exists S2D (stay) Q

(In a quiz show:)

Are there any people in that room?

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<sup>&</sup>lt;sup>4</sup> S1D means "saliently one-dimensional," roughly "long thing." S2D means "saliently two-dimensional," roughly "flat thing," and S3D means "saliently three-dimensional," roughly "round thing," but including, for instance in ST, dice and other cubes. A fourth possibility is S0D meaning "zero-dimensional," roughly "very small thing." The first three terms are fairly common in the literature on noun classification; the latter has been used by Scott Delancey.

nay hôơn nán mii phèn yùu máy (unanswerable) In room there exist S2D (stay) Q

In these examples, the unanswerable question is unanswerable because the classifier used ( $s\hat{e}n$  for long flexible things,  $ph\hat{e}n$  for flat rigid things) is a two-place predicate requiring another noun that refers to material or to some generic concept:  $s\hat{e}n$  aray 'What string?/A string of what?' Perceptual classifiers tend to be two-place predicates; generic classifiers tend to be the more independent, "stand alone," one-place predicates.

Ambiguous Classifiers. Finally, there are classifiers that are ambiguous as to whether their criteria of application are generic or perceptual, or that are alternately generic in some cases, perceptual in others. Take the classifier tua, for example. This classifier is usually explained as "classifier for animals," and indeed it does apply to all animals regardless of shape, including birds, insects, snakes, and microbes. The only exception, that has clear historical and cultural motivations, is the use of chiak (literally 'rope' in contemporary ST) for domesticated elephants, a usage now considered obsolete by most speakers. The use of chiak seems to have been motivated by the special symbolic and social status of elephants in pre-modern Siamese society. Note, as well, the relative historical transitoriness and geographical limitations of this use of chiak. Pre-modern Siamese is the only language of the Tai family to have used chiak in this way, to my knowledge, whereas tua as classifier for animals is widespread throughout the Tai family and throughout Southeast Asia. This use of chiak is generically motivated, whereas the use of tua in ST, I argue below, is perceptually motivated.

The clear picture so far of *tua* as a generic classifier is clouded by its use for pieces of furniture, as well as for script figures, all of which appear to be classified by *tua* not because they are animals, but because they have "body shapes."

Here, "body" in the semantic structure of ST appears to be basically a head, torso, and tail, as with fish or snakes. Being limbed, or more particularly four-legged, appears to be a secondary perceptual quality, like flexibility for sên. In the case of furniture, there appears to be a further extension from body shape to four-legged furniture with a raised flat surface, thence to any furniture with a raised flat surface, regardless of manner of support (that is, regardless of number of legs, or of presence or absence of legs). In the case of clothing, there is still a clear preference for body shape, since clothing with limbs, or anything that takes the shape of the body, is clearly classified by tua, whereas items of clothing that have their own rigid shape (such as hats and shoes) do not take tua. Some items are ambivalent, such as a sarong, which more clearly takes tua when it is worn, as opposed to when it is folded up flat.

Thus, it appears that the clear applicability of *tua* to animals on a purely generic basis is clouded or confused by applications that, for the most part, depend on shape criteria.

As an obligatory member of compound nouns, *tua* refers to some animals, mostly insects (for example, *tuabûŋ* 'hairy caterpillar', *tuatun* 'bamboo rat; mole', and so on), but also to script letters, symbols, puppets, actors, and "active" technical concepts such as divisors (math), conductors (electricity), and reagents (chemistry), among other things. The range for optional compounds is even wider, but it seems to appear in the same semantic domains. See Placzek (1978: 146-158), for a more complete listing. Clearly the sense of *tua* in compounds is based upon perceptual factors as well as generic factors.

Although evidence from compounding in the noun function does not necessarily affect the semantic situation in the classifier function, there is no doubt considerable overlap between these two functions in the mental lexicons of ST native speakers. In any case, the applicability of *tua* in classifier usage already ranges far beyond the limits of "animate, regardless of shape." Incidentally, it is not impossible to consider "animate" as a perceptual criterion as well, since the primary characteristic in identifying animates is movement, or self-mobility.

As an independent noun, *tua* functions like *sên* rather than like *khon*. That is, it is a two-place predicate rather than a one-place predicate, and it cannot stand alone.

In general, then, we have looked at an ST classifier (khon) that is purely generic in its criterion of application, some classifiers that are purely shape-based (sên and phèn), and one that appears ambivalent with regard to generic or shape-based criteria of classification (tua). The ambivalence of tua derives from the fact that it appears to apply both by generic and shape criteria in the classifier function, and in compounds it also has both generic and shape senses. If it can be said to have a sense at all as an independent noun, that sense is 'body', rather than 'animate' or 'animal'. Extensions of application (as classifier) appear to be according to both shape (clothing and furniture) and by generic kind (all animals, all furniture with raised flat surfaces). However, in all cases, since all animals have a body of some sort, the generic criterion is ambiguous at best, and the true criterion might just as well be "body shape." The reverse is not the case; that is, those cases that are shape-motivated cannot be derived from a generic motivation unless we are prepared to allow a multitude of generic sources, such as animals, clothing, furniture, letters of the alphabet, actors, and so on. Thus, it appears that a single-shape criterion could explain all cases, whereas a single generic criterion explains only a restricted subset. By a rule of simplicity, we should prefer shape as the most basic criterion for the application of tua to a noun. The same argument applies in the case of direct semantic values of tua in noun compounds.

At this point it, would be useful to take a broader look at more ST classifiers to see if the pattern holds for more than the few examples discussed so far.

# A Survey of Criteria of Applicability

If we are to look at more ST classifiers, we must take a selection, since there are a large number of classifiers in ST. Any selection will be essentially arbitrary or pragmatic, depending on one's specific purpose. In table 1 and table 2, I have made a selection according to the following criteria:

- (i) the more common ones, according to my own estimate. I am not aware of any word frequency studies on ST for adults.
- (ii) the more extended ones, in the sense of applying to a more semantically varied range of nouns. However, *lêm* and *lan*, those most widely extended of all classifiers, the ones whose criteria of classification are most puzzling, are not included here.<sup>5</sup>
- (iii) the ambivalent ones, as regards generic versus perceptual criteria, on the example of *tua* discussed above.
- (iv) the ones that apply to discrete, concrete noun referents. These cases, I feel, highlight the contrast most clearly, since generic criteria apply to parts (for example, chin 'piece', sìik 'split section'), to collections (for example, klùm 'group, ball'; pìk 'stack'), or abstractions (for example, yàaŋ 'kind', khanàat 'size, extent') only marginally if at all, and shape criteria are not relevant to the abstractions (although they are to parts and collections, another advantage to shape over generic criteria). Furthermore, the non-concrete classifiers are more patently two-place predicates and cannot stand alone as independent nouns, a characteristic used above as a sign of clear generic application. This point will be discussed more below.

With these selectional restrictions in mind, a close study of table 1 is in order.

<sup>&</sup>lt;sup>5</sup> Both of these classifiers are examined for overlap with other classifiers and for range of applicability in Placzek (1978), and *lêm* is examined in a detailed ethnohistorical study in Placzek (1984).

Table 1

Criteria of Classification of the More Common ST
Classifiers for Concrete Objects

Common CLF's for	Cri	iterion of Clas	ssification	
Concrete Objects	By Shape (primary)	By Shape (secondary)	Generic	Extensions
tua	body (head & tail)	limbs	for animals <sup>a</sup>	clothing, furniture, letters, and so forth
tôn	S1D	vertical	for plants	posts, pillars
lûuk	S3D	round	for fruitb	
bay	S2D	thin, flexible, concave	for leaves	containers, eggs, fruit
khriaŋ			for machines	3
khan	SID	horizontal	for land <sup>c</sup> vehicles	long handles
dâam	S1D		for handles <sup>d</sup>	
klôoŋ	tube	long	e	
lam	S1D	concave	for boats	troughs, airplanes, and others
theen	S1D	S2D	for metal	molded things
mét	$SOD^f$	S3D	for seeds	sand, gravel, pills
duaŋ	radiating center	sharp, round		light sources, seals, stamps
dòok	flower- shape	long	for flowers	arrows, keys, incense sticks

### Notes for Table 1

- a. except elephants (obsolete)
- b. with some marginality for very small fruit such as grapes, which are not usually referred to individually.
- c. except oxcarts (kwian), sledges ((lɔɔ) lɨaŋ), harrows (khrâat), and so on.
- d. either things with projecting handles (for example, pots) or long things such as hoes, swords, pens, and others.
- e. in some contexts of specific expertise *kl3ɔŋ* is the self-repeating classifier for optical instruments, in other contexts for smoking pipes.
- saliently zero-dimensional, equivalent to a very small, threedimensional object.

# Table 2

# Nominal Senses of the More Common ST Classifiers for Concrete Objects

Common Classifiers	Nominal Sense (In Compounds or as Independent Nouns)		
for Concrete Objects	By Shape	Generic	
tua	body-shaped	(self-) animated	
tôn		plant, origin, source	
lûuk	S3D, round	offspring, junior member	
bay	S2D	leaf, blade, document	
khriaŋ	•	machine, ingredient, equipment, device, and so on	
khan	S1D, horizontal	handle, bar, pole, paddy dike, and others	
dâam	S1D	handle	
klôoŋ	tube	tube	
lam	conduit <sup>a</sup>	conduit	
thêerj	bar	bar, ingot	

mét	round, tiny	seed, granule <sup>b</sup>
duaŋ	radiant centers	light source, stamp, seal
dòɔk	flower-like	flower, floral design, things that develop

#### Notes for Table 2

- a. where 'conduit' is a cover term for tubes, troughs, sawcuts, channels, and other concavities of passage.
- b. the unambiguous word for 'seed' is malét, not mét.

#### Discussion

In an examination of tables 1 and 2, we should look first at the anomalies included here for the purpose of comparison and for illustrating the selection of classifiers in the table.

First of all, for the classifier  $t\hat{o}n$ , the shape criterion of S1D explains extensions to posts and pillars, but it does not explain low spreading plants, such as bushes and creepers. This explanatory superiority of generic criterion over shape is parallelled by the lack of shape sense when  $t\hat{o}n$  occurs in compounds (table 2). In compounds it invariably carries the sense of 'source', 'origin', or 'plant', never any idea of S1D.

For *tôn*, I suspect that a perceptual value may have more to do with a sense of the precise point at which a plant rises from the ground, rather than strictly "S1D vertical," a shape value that may have derived from the fact that a large number of plants arise from the ground in the form of a central vertical trunk, stalk, or stem.<sup>6</sup> However, since there are many plants that

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<sup>6</sup> It may appear self-defeating or circular to discuss shape criteria as possibly derived from some generic concept, for example considering "radiating center" as another possible shape criterion because of the variety in perceivable plant types. My approach here is prototypical, in the sense that we start with perception of gross similarities and gaps in the environment. Thus, a minimal perception would be that there are things that come up out of the ground, a very basic tactile and visual perception with important subsistence and economic implications. Further, such things take a variety of shapes. In the case of tôn, it may be that the prototypical plants at some formative stage of ST cultural and linguistic development were of the herb or tree type, with a central stalk or trunk. This looks like a claim that a generic concept arises and gives rise to a shape concept, but that the shape concept is somehow more basic. However, what I am suggesting here is that percepts arise with prototypical foci that restrict the shape values by which many of these classifiers apply. The development of a fully generic named concept may be a much later event, completely different in several important ways from the original prototypical percepts that may well go unlabelled in a language. The major difference would then be that a generic concept is definable in terms of certain characteristics with relatively clear limits of

have more of a radiating form, the only common perceptual factor for plants is the point of origin from the ground.

There seems to be no extensions of *tôn* as classifier according to a criterion of "radiating center," a criterion occupied by the classifier *duan*. Thus, the generic concept of plant appears to motivate the classifier *tôn* rather than the shape criterion of S1D vertical, which in turn explains its few extensions. Nor does the shape criterion of radiating center apply to plants, since there is no evidence for this in compounding or semantic domains of nouns classified.

As the evidence stands, *tôn* appears to be a truly ambivalent classifier that relies, however, primarily upon a generic concept for the criterion of classification.

Another counterexample is the classifier khrian. At first blush khrian appears to be an example of a purely generic classifier like khon, for two reasons: it has no apparent shape motivation at all, and khrian has a nominal function as 'machine, device, equipment, ingredients, paraphernalia, and so forth'. However, it can be demonstrated that despite these clearly assignable semantic values in noun function, khrian is still not a one-place predicate and cannot stand alone in the telephone call or quiz-show frames.

In fact, a check of the tables and of other possible candidates confirms that with some possible but marginal exceptions, *khon* 'person' is the *only* ST classifier that is a complete, one-place predicate in its noun function, and that can stand alone in the telephone or quiz-show frames. Possible exceptions are *tôn* above; *klòɔŋ* 'box', which fits a pattern applicable to container names (for example, *thăŋ* 'bucket', *chɔɔn*, 'spoon', and so on); *kham* 'word'; *ŋaan* 'event, celebration'; *făa* 'lid, partition'.

There are perhaps other examples of classifiers that have full oneplace predicate status as simple nouns; I have not made an exhaustive survey. The prominence of the classifiers in tables 1 and 2, however, is unquestionable, and among them not one classifier functions as an independent noun, although several, such as *khraŋ* 'machine', and so on, appear to be transparent borrowings from the main lexicon where they function as two-place predicates. Others are *lûuk* (as 'offspring'), *khan* (as 'paddy dike'), and *dâam* 'handle'. None of these, again, is a fully independent, one-place predicate.

Other anomalies in table 1 are found in the cases of klɔ̂ɔŋ and duaŋ, where some sort of shape criteria appear to apply and to motivate exten-

membership, whereas prototypical concepts are merely lists of things that are to varying degrees similar to the prototype. These varying degrees of similarity amount to varying degrees of membership in the category.

<sup>7</sup> The lack of an independent one-place predicate nominal sense for the words considered here (except for *khon*) is the reason why there is no separate section for such a sense in table 2, although earlier versions of this paper did include one.

sions, but a clear generic criterion is not apparent. As footnote e in table 1 points out,  $kl\partial g$  may have some incipient generic values, but these are confined to limited contexts less than fully culture-wide. The fact that cameras are classified as  $kl\partial g$  (for example,  $kl\partial g$  thàaj-rûup sygn  $kl\partial g$  two cameras'), despite their lack of an S1D characteristic, does support the generic notion of "optical instruments regardless of shape," however.

With the classifier duay, I am considering a radiating center to be a unified percept that can give rise to various extensions because of the complexity of its components. That is, a luminous radiant center is both round (because of its corona or halo) and long and pointed (because of its rays). No generic value is given for duay since neither light sources, stains, stamps, nor seals seem to dominate the common occurences of this classifier.

As for khran then, by the criteria of selection given above for inclusion in the tables, this classifier appears to be more of a fully generic than an ambivalent classifier, and kl3n and duan appear to be more clearly shape-based. The result is that, of the categorically ambiguous classifiers surveyed here, only tôn seems to be clearly motivated more by generic criteria of classification than by shape criteria.

Another point to note is that when both generic and noun-senses of  $kl30\eta$  are listed as 'tube', and both noun-senses of lam are listed as 'conduit', this merely illustrates the difficulty of distinguishing these two senses. This difficulty, in turn, arises from prototypicality in the sense that if we take, say, a telescope as the prototypical best example of a thing counted as  $kl30\eta$ , what else can a telescope be but long (S1D)? That is to say, generic values tend to parallel shape values, and we can only garner clues about the differences (in a diachronic view) by considering those areas where overlap is incomplete. In this study, such areas are for the most part cases of extension of classifier application, and in each case (again, with the exception of t00, it is seen to be extension by shape rather than by generic value.

Finally, the apparent arbitrariness of the generic values should be discussed. It is clear to a great extent that it is a subjective judgment whether one of the semantic domains within which a given classifier applies dominates the others and is therefore selected as the main generic value and the others are relegated to the status of "anomalous" extensions. However, some cases are easier to judge than others. In the case of tua, there will be little doubt that this classifier applies by a criterion of animacy or "being an animal" more generally than by criteria of "being a certain type of clothing," "being a letter of the alphabet," and so on. Part of this conviction arises from the fact that some extensions, such as those to actors, puppets, and "active" technical concepts, may be derived from an earlier 'animate' criterion, but they are less likely vice versa. Obvious historical differences also reinforce these relationships. In the case of khan, for example, technological change has made the choice of a dominant generic value easy, since the

automobile has come to dominate the Thai environment, as it has elsewhere in the world.

#### Conclusion

A survey of tables 1 and 2 shows that of those classifiers for concrete objects that are ambivalent in terms of perceptual (shape-based) or generic criteria of classification, in almost every case among the examples selected here (again excepting tôn), the generic value can be essentially arbitrary (as with khan, lam, thêeŋ, mét, and duaŋ), or further extensions are clearly according to a criterion of shape (as with tua, khan, dâam, klôɔŋ, lam, thêeŋ, mét, duaŋ and dòɔk, or the derivation of generic values from shape values rather than vice versa is more logical, plausible, and simpler (as with tua, lûuk, bay, khan, lam, mét, duaŋ, and dòɔk). With this I rest my argument and request readers, especially native speakers, to test my assertions.

The conclusion of this paper is that perceptual values, particularly the more abstract shape values of S1D, S2D, and S3D, are at the core of the productive part of the ST classifier system. This fits with the widely accepted (or acceptable) view that the basic semantic and referential function of classifiers is to provide unit reference to an unmarked bare noun in those special-purpose situations where unit reference is essential, typically situations of counting, disputing ownership, and changing ownership, as in marketing, collecting tribute, gift exchange, and so on. The primary basis for reference, as in other languages, is prototypically the perceived physical shape of discrete manipulable objects. Parts, collections, occasions, abstractions, and locations are treated in analogous manner.

Thus, I see the heart of the classifier system as composed of words referring to shapes, with generic values and noun-senses deriving from them. The majority of those words that have noun function refer to some kind of shape, such as 'tube', 'ring', 'stack', 'bunch', 'splinter', 'section', and so on. And there is only one classifier for concrete objects, I maintain, that is commonly used in noun function and that also functions as a one-place predicate or independent noun: the classifier khon 'person', which is also the only word in ST that conforms to all three syntactic classifier roles: full classifier (for example, dèk săam khon 'three children'), partial repeater (for example, khonŋaan săam khon), and full repeater (for example, khon săam khon). Certain terms for containers conform to these syntactic types as well, but they do not have identical semantic functions (for example, klòɔŋ săam klòɔŋ means 'three boxes full of boxes' in preference to 'three boxes', which is more appropriately and clearly klòɔŋ săam bay).

<sup>&</sup>lt;sup>8</sup> Plus some third-level extension by generic criteria again, as with *tua* from four-legged furniture to any furniture with a raised surface, and with *duan* from traditional stamps in a radiating form to contemporary postage stamps.

In a functional and a prototypical view in which classifiers provide unit reference, in the most basic cases by reference to the visual shape of perceived units, the classifier system and its developments begin to appear more straightforward and less exotic to speakers of other languages. For example, classifiers parallel the function of the English articles and plural system. It remains to apply some of the recent improvements in our knowledge of the ST classifier system to the fieldwork of those researchers now collecting data from the rapidly disappearing speakers of remote Thai dialects, in order for their data to be more useful in the reconstruction of the Proto-Tai classifier system.

Further data are needed for what words are used with classifier function, what their ranges of application are, what alternative functions they might have, and whether extension is by shape, generic concept, or other criteria.

Above all, the information must be gathered and analyzed with an understanding of the flexibility of the system, in particular that "correctness" of a classifier can only be prescriptive, that nouns are often co-opted into the system, that classifiers apply to nouns by specific analyzable criteria, and that they do not, except in a very secondary, formal, and analytical sense, form categories of nouns.

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