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Do Children Commit Categorizing Errors While Using Proper Names?

Abstract The author of the article regards the source of the distinction for singular names/general names not to have a cultural character, but a cognitive one, and on these grounds tries to solve one important modern problem: how is it that when a child learns words, the child commonly applies an aggressive strategy and does not make category mistakes connected with the (apparent) use of some singular names – individual names (when it is required to refrain from applying this strategy). Next, the author argues that although a child at the age of two can properly use a singular name, it does not constitute any evidence that it can properly use a proper name, as psychologists assume. For that to happen the child would have to understand the nature of a proper noun.

Keywords social communication, learning singular names, learning general names, learning proper nouns, categorization

Introductory Remarks

Children commonly adopt an aggressive strategy when they first learn to use names. The result is that they commit categorizing errors. Interestingly, according to psychologists, this regularity does not obtain for certain special singular names: proper names with reference. According to psychologists, children do not commit categorizing errors while learning to use proper names of this kind, although they commit them while learning to use general names. We would like to investigate this psychological thesis more closely.

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Our analysis will be restricted to the period during which the child learns its first proper names and we will only be concerned with proper names belonging to persons. Let us begin our analysis at the time the child does not yet know any words.

It seems that language acquisition begins from the following situation (described by Quine in connection with a foreigner learning the word "Gavagai"): the teacher utters a new word and applies it to an object with which the learner does not associate any name.[2] The learner must decide whether the teacher applies this word to the entire thing, its part, its property, or perhaps an activity it is performing, if it is performing any, etc.

The time period from the end of the 1980s to the beginning of the 21st century saw the formulation of the principles (assumptions) children adopt while forming their first semantic relationships (a summary of this research can be found in Hirsh–Pasek and her team (2004)). In order that a name is successfully tied to its scope, the human mind must have at its disposal principles that would allow it to successfully pick out the relevant elements in the world and to assign to them appropriate words. Researchers distinguish two layers among these principles. The first layer, applied by the child at the age of twelve months, includes:

a) the principle of reference: the first words designate things, activities (these would correspond to relations) and properties belonging to the basic level; these words are, for example, "dog" as opposed to "mammal" or "dachshund," "green" as opposed to "colour" or "pistachio," or "above" as opposed to "relation" or "5 cm above" (Clark 2003: 135);[3]

b) the principle of extendibility: a word is not a 'label'[4] glued to the first object it was assigned to; it should be extended onto other heretofore unnamed items. It refers not only to a singular object but to a category (class) of objects;

c) the principle of object scope: a word refers to the whole thing and not to its part or the complex comprised from this and other things;

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[2] An object can be a thing, a property or a relation.

[3] In psychological literature (Rosch 1978; Hall 1993; Hall, Waxman 1993; see also Hall, Lavin 2004) it is relatively commonly held that children show the basic–level object–category assumption for things, that is, they connect the word "dog" with dogs and not with animals in general or with dachshunds (since they possess a mental representation of dogs – the psychological aspect).

[4] The symbol '. . .' indicates that the term occurring in the place of the ellipsis is not used in the technical sense.

for example, the child will pick out a squirrel and not the complex squirrel-on-the-branch (Clark 2003: 134).

The second layer principles are the following:

a) the principle of novel name – nameless category: new names should be tied to heretofore unnamed categories. In consequence, it is also assumed that a new name should be assigned to a new object and not an object that is already named:

> "Speakers take every difference in form to mark a difference in meaning" (Clark 1995: 394).

For a child using the above principle the object may only have one name;

b) the principle of categorical scope: words can be extended onto taxonomic categories not based on general similarity but based on properties which distinguish, in a more precise manner, the scope of the given name;

c) the principle of conventionality: names can be given to objects based on social conventions. According to this principle, the child seeks these conventional means of referring and adapts to them, the same way it would to a necessity of any other kind:

> "For certain meanings, there is a form that speakers expect to be used in the language community" (Clark 1995: 394).

These principles undergo changes and emerge as certain inborn prejudices are combined with experience gained in the course of language acquisition (Hirsh-Pasek et al. 2004: 177–178). They are used by the child from a very young age, although they are discarded over time (Clark 2003: 133). In the literature (Clark 2003: 138) there is no agreement as to how they form, when they begin to be operational, how long they are in use, and why they are ultimately discarded by the learner.

Since our goal is to discuss proper names, and these most often concern persons (who are things), we will be interested in two principles formulated based on experiments carried out, among others, by Baldwin (1989), Kobayashi (1998), and Hirsh-Pasek and her team (2004): the learner ties a name to an entire thing (the object scope assumption), and it is a thing

from the basic level (the reference assumption). The child must subsequently decide if it will use the name with regard to one thing constituting the sole element of a one-element class, or to many things belonging to a multi-element class. This is the proper beginning of our analysis. How does the child determine that?

Learning Strategies

The simplest solution to this question can be found within learning strategy theory. Generally speaking, we can distinguish two relevant positions: some authors think that children adopt a conservative strategy, that is, they only use a word with regard to the object it has been assigned to by the teacher and await further instruction. In this case, the solution to our problem would be simple: when the child hears a new name, it ties it to an entire object. So long as the name is not applied to another object the learner will only apply it to that one item. If we assume that a conservative strategy is used at first, the outstanding issue will be how to teach a child to use a general name. The procedure would be the following: the adult would use the same name with regard to many objects and would encourage the child to extend the scope of the name's use accordingly (Waxman 2004).

However, only few experiments accord with the thesis about the adoption of a conservative strategy by the child and those which confirm it are questioned (Markman, Jaswal 2004). It can at most be assumed that the child adopts such a strategy so long as it has learnt a small number of words (for example, research by Samuelson and Smith 1999). Later, the child begins to adopt an aggressive strategy. Landau (2004: 117) claims that children begin to generalize and extend the use of names onto objects that have not been previously indicated once they have mastered fifty words.

According to other authors, the child adopts an aggressive strategy from the start: as soon as it has mastered the use of a word with regard to one indicated object, it will use it with regard to other items that have not been previously indicated (Golinkoff and her team 1995). Woodward and her team (1994) have discovered that eighteen-month-old children extend the use of a new word onto other things that differ in colour (see also Markman, Jaswal 2004: 379). If it is indeed the case that the child adopts an aggressive strategy, then the problem will arise of how to restrict the extension of a name's use onto items that are not the name's designates. Once the child has erroneously extended the use of a general name, we can correct it using expressions such as "This is not *N*." This works in the case of general as well

as singular names. Once the child has begun to use the singular name "Anna" with regard to other people, it is sufficient to use the expression "This is not Anna." The use of expressions with negation does not stop the child from adopting an aggressive strategy and there must occur situations where the child will use a singular name inappropriately. If the above is correct, we can state the following: (1) as can easily be gathered, the adoption of an aggressive strategy is the reason why children commit categorizing errors with regard to the use of both singular and general names; and (2) it would seem that we have also explained how the child comes to distinguish singular names from general ones. Namely, if the name refers to more than one object, it is a general name, and if it only refers to one, it is a singular name. The capacity to distinguish them is acquired on cognitive grounds.

However, several more problems now arise. Are all singular names distinguished from general ones on cognitive grounds? Do errors accompany the acquisition of all singular and all general names? Is the error always a matter of extending the use of a given name beyond its scope? It seems that the last question can be answered in the affirmative with regard to all general names, but is it the case with regard to all singular names?

Special Singular Names: Proper Names

In psychological literature, some authors (e.g. Macnamara 1982) note that children use proper names (one should add: non-empty ones), that is to say special singular names, more or less error free. This thesis is confirmed by other psychologists (Markman, Jaswal 2004).

Macnamara (1986) distinguishes proper names from generic names. Markman and Jaswal make similar linguistic distinctions: proper names versus common names (Markman, Jaswal 2004: 371) and proper names versus count nouns (Markman, Jaswal 2004: 372). These distinctions on the level of language are related to a metaphysical distinction between particulars (Bill) and kinds (chair) (Markman, Jaswal 2004: 402).

In our analysis of views held by psychologists we will follow the example provided by Markman and Jaswal (2004): Bill (proper name) and chair (general name). Proper names referring to existing objects are singular names, while common names and count nouns referring to existing objects are general names.

The distinction created by psychologists does not accord with the divisions made by philosophers. In philosophy, general names feature in the classification of names according to the number of possessed designates: here

we distinguish general, singular and empty names. Proper names feature in the division based on the semantic function they play: here we distinguish proper names, whose function is to name[5] – this function does not allow for reference to a designate, if the name has one, via connotation (proper names do not have connotation) – and other names, whose function is to designate; the latter function allows for reference to a designate via connotation. To name is to assign a name regardless of the object's characteristics (connotation), while to designate is to assign it due to the object's characteristics (connotation) (Mill 1962: 51).

The distinction between singular and general names (the linguistic problem) is related, under certain conditions, to the distinction between particulars and classes or, as Markman and Jaswal (2004) put it, between: particulars and kinds (the metaphysical problem), individuation and generalization (the gnozeological problem), knowledge about particulars and general knowledge (the theory of knowledge problem), and concepts that are mental representations of individuals and those that are mental representations of classes (the psychological problem). In contrast, the distinction between proper and general names can only be applied in light of what we have assumed here (we do not deal with empty names) to proper names that possess a designate. They are special singular names which fulfil the function of naming. In this division, general names fulfil the function of designating. From here on we will write about proper names possessing a designate using the term "proper name."

Let us now return to our analysis. The last point we made was that, according to psychologists, children tend not to commit errors in their use of proper names. Does this mean that they do not adopt an aggressive strategy with respect to these special singular names – proper names? If children indeed do not commit such errors, how do they restrain themselves from using an aggressive strategy in this particular instance? Given that they generally adopt the principle of extendibility, why do they not do so with respect to proper names? Do they recognize proper names and know the principle: do not use a proper name with regard to objects other than the named one? There are several possible answers to this question: (1) we may assume that children do not adopt an aggressive strategy at all but a conservative one, in which case, however, we go against empirical findings; (2) we may assume that children do not adopt an aggressive strategy with regard to

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[5] "For, though we may give to an individual a name utterly unmeaning, which we call a proper name – a word which answers the purpose of showing what thing it is we are talking about, but not of telling any thing about it..." (Mill 1882: 41).

proper names, in which case we are bound to presume that they distinguish proper names from general ones (therefore, we can no longer argue based on the assumption that children use a single strategy to learn their first names, an aggressive strategy, and we still do not know how children make the distinction in question); or (3) we may assume that children adopt an aggressive strategy only, in which case we must explain how it is that they do not commit errors.

Let us remember that in psychological literature (Hall, Lee, Bélanger 2001) it is commonly held that at the age of twenty-four months children distinguish proper names from general ones. Before we present our own explanation, let us briefly describe how psychologists have proposed solving this problem.

Not Using a Proper Name with regard to Similar Objects

In the literature (Markman, Jaswal 2004: 386) the principle of exhaustive reference has been formulated, according to which the speaker should use a new name (of a natural kind) to all objects that are its designates and are seen by the speaker.[6] If the speaker uses a new name with respect to one object and not to the other objects (seen by the speaker) such that the name could justifiably be applied to them and the learner expects it (for example, due to a resemblance between the named object and the other seen ones), then this should suggest to the learner that the name fulfils its semantic function with regard to the one object only (Markman, Jaswal 2004: 390).

These conclusions have been drawn based on experiments with children who were three years old (as we have indicated, two-year-old children distinguish proper names from general ones). Although this particular study concerned the introduction of general names, Markman and Jaswal (2004) have attempted to carry it over to their analysis of proper names. However, it seems that the experiment confirms a learning process aimed at restricting the principle of extendibility rather than the use of proper names.

Animation

As early as 1974, Katz, Baker and Macnamara (1974) argued that children tie proper names to animate entities. If an object is an animate

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[6] Could this assumption be a semantic and not a linguistic rule supplementary with regard to Grice's theory of conversational implicature?

entity, it is more probable that a new word used by the teacher will be interpreted by the learner as a proper name, especially if it is used with regard to a single item and not two different items (Markman and Jaswal 2004: 373). In other words, if an animal has a name and the child knows it, and the teacher goes on to use another word, then the child will interpret that other word as a proper name (Hall 1991; Markman, Jaswal 2004: 374). This decision is further reinforced by the information that the user of the new name knows the animal (Birch, Bloom 2002; Markman, Jaswal 2004: 374).

Imai and Haryu (2001) have established that preschoolers treat new names for things as general names from the basic level and extend their use to other objects (Markman, Jaswal 2004). They go by the assumption of mutual exclusion according to which the second word used with regard to an animate object is interpreted as a proper name, whereas the second word used with regard to an inanimate object, as a name referring to objects of the subordinate category.[7]

What objects count as animate? Based on empirical research (Hall 1991), it has been established that they are objects characterized by the following physical traits: has skin, fur, a face, eyes, the shape of an animal or a human being. Children give human characteristics to objects that have a face, speak or move (including toys such as a toy train; Markman, Jaswal 2004). Girls aged two assign proper names to their dolls. Insects do not have faces; hence, they are considered inanimate and no proper names are tied to them unless it is said that a given insect is somebody's animal (for example, "This is my butterfly. Its name is David."). If girls (but not boys) are informed that an object feels some kind of emotion, they assume that it is animate. Evidently inanimate objects such as ships were not connected with any proper names (Markman, Jaswal 2004: 392, 393).Based on these remarks we may advance the thesis that physical traits attesting to the object's animation can but do not have to facilitate their connection to proper names. One should remember that there exist animate objects that do not have a proper name (e.g. most dolphins) as well as inanimate objects that have one (e.g. Koh-i-Noor). If the psychologists who adhere to the thesis that animation helps the learner acquire the ability to use proper names are right, then the following principle

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[7] Three levels of categories can be distinguished (see Rosch 1978): the superordinate level (for example mammal), the basic level (for example dog), and the subordinate level (for example dachshund). In language, they correspond to general names: of the superordinate, the basic and the subordinate level. These levels differ in terms of the degree of abstraction.

could be formulated: if you want to teach a child to use a proper name, use a general name from the basic level with regard to the object first, followed by the proper name. However, could this be the right procedure to introduce proper names? Will the child understand, in the described situation, what a proper name is?

It seems that the argumentation presented so far only confirms that the child uses a singular name and not a proper name. To learn to use a name with regard to one object and to master the use of a proper name are not one and the same thing (in the latter case, one must understand what a proper name is). Although the repetition by the child of the sound of a proper name may suggest that it understands what a proper name is, this behaviour is merely apparent. The child may have learnt to use a singular name. If two or three-year-old children understood what a proper name is, they would be able to use it with regard to inanimate as well as animate objects.

The Inability to Transfer

The debate between the proponents of the aggressive strategy and those of the conservative strategy concerns, *inter alia*, the question of whether, before a word is introduced, the child has any mental representation, however rudimentary, of what it might refer to. Three, four-month-old children construct basic-level concepts which are later tied to general names (for example, Behl-Chadha 1996, Quinn, Eimas 1996). Do children, before they learn to use a singular name, already possess a concept for its designate, even a preliminary one? Children adopt an aggressive strategy also in the case of singular names: they use the same singular names with regard to the same persons over time and in different circumstances, not because they know that the given word is a singular name but because they commonly adopt an aggressive strategy for singular and general names. If the child adopts an aggressive strategy, it must have a previously constructed singular concept, at least a preliminary one, with which to tie the singular name. Can a child construct such a concept?

In psychological literature (e.g. Machery 2009, 2011; Brooks 1978; Murphy, Medin 1985) the following kinds of concepts are mentioned: exemplar concepts (for general names) constructed based on similarity (reducible to characteristics)[8] with an individual; prototype concepts constructed based on

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[8] "Exemplar-based models assume that cognitive processes involve the computation of the similarity between exemplars and other representations. [. . .], when I categorize

typical traits which allow one to only pick out items that are for some reason considered typical; and theory-dependent concepts constructed based on characteristics which allow one to establish whether a given element belongs to the scope of the concept, where the choice of some characteristics over others is explained by a theory. Some authors (McDonnel, Gureckis 2011) also write about classic concepts which are built based on necessary and sufficient characteristics. However, they identify them with theory-dependent concepts.

All concepts listed above are general concepts constructed based on characteristics, not singular concepts. In philosophical literature (Walentukiewicz 2011, 2014) there are two conceptions of singular concepts: the exemplar conception (for singular names), according to which the individual is determined by individual characteristics (for example, fingerprints and retina possess such characteristics); and the basic conception, according to which the individual is distinguished based on overall similarity (not reducible to any strictly defined common characteristics) to the last seen image (most often the face) of a person (who, if given a name, becomes a semantic type; Walentukiewicz 2011).

If we accept the thesis that the child is able to construct basic concepts in the first month of life, then we will be able to explain how it can distinguish its mother's face so early on (within less than a month since birth; Walton, Bower, Bower 1992; Walton, Bower 1993).

Following Macnamara (1986) observing his son Tom at fifteen months of age, Tom understood the name "Spot" uttered by his father to designate their dog. Tom was subsequently able to refer to the dog using this name and to understand the same act of reference carried out by others. However, Macnamara specifically states that he does not hold that Tom possessed the concept of proper name.

In opposition to what Macnamara claims, we think that the child not only does not understand what a proper name is but it cannot use it either. It does not carry out any act of reference by means of a proper name. The child merely uses a singular name and carries out an act of reference by such means. It has constructed a concept for a singular name and not for a

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Fido as a dog, one or several exemplars of dogs are retrieved from long-term memory (together, maybe, with exemplars of other categories, such as some exemplars of cats); this exemplar (or these exemplars) is (are) matched with the representation of Fido" (Machery 2009: 96).

"The exemplar paradigm of concepts is built around the idea that concepts are sets of exemplars. In turn, an exemplar is a body of knowledge about the properties believed to be possessed by a particular member of a class" (Machery 2009: 93).

proper name. In order to construct a concept for a proper name, it would have to understand the function fulfilled by proper names in language. This understanding is cultural (philosophical[9]), while the grasp of the function fulfilled by singular names is cognitive.

The use of a proper name with comprehension requires not only that one master the ability to use it with regard to a single object (the cognitive requirement) but also that one have enough knowledge to be able to use it every time, everywhere and in every situation where its reference exists (we are still discussing proper names possessing designates). By using a proper name, one can successfully refer to an object regardless of its characteristics. A proper name is given to a person regardless of any characteristics and belongs to the person regardless of any characteristics. Hence, if a person changed all their characteristics (were such a change possible), other than the possession of a name, this name would still belong to that person by virtue of naming (the cultural requirement).

When the child learns its first words referring to particulars, it learns singular names and not proper names. In order for the child to learn to use proper names, it must first understand what their basic semantic function is. And this function is not just to distinguish a single object but also to allow reference not based on any specific individual characteristics. Singular names, in contrast, are used with regard to particulars due to the characteristics they possess or their similarity to a semantic type.

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[9] The fullest description of the nature of proper names has been attempted by philosophers of language. General names are replaceable by descriptions through which it is possible to establish their scopes, while proper names are not replaceable by any such descriptions (Mill 1882; the weak version). Some authors go further and hold that these descriptions are necessarily tied to some general names, while proper names are not replaceable by such descriptions (Kripke 1980; the strong version). The act of christening, the intention of the person carrying it out, establishes a necessary connection between a proper name and its referent. Searle (1969) responds to this proposition in the following way: although a single description could be connected with the referent of a proper name only accidentally, a disjunction of descriptions could be connected with such a name necessarily. Other counterexamples to Kripke's proposition could be the following: during the war people assumed names temporarily; moreover, history does feature instances in which not the christener's intention but some other reasons decided about the assignment of a proper name – the assignment of the name "Madagascar" could be one example. To summarize, the thesis that general names are connected with descriptions, while proper names are not, and that proper names are introduced into language by acts of christening, while general names are introduced through descriptions, is not convincing. It seems that proper names can be connected with certain descriptions (Searle 1969), while general names are introduced by inaugural acts of christening of the form "This is N."

It is now time to answer the most important question: since the child adopts an aggressive strategy, why does it not commit categorizing errors while using proper names (or commits them less frequently than in the case of general names)? First of all, the child is in possession of a singular concept and uses a singular name. Secondly, it cannot transfer a singular name (or a proper name, for that matter) tied to this singular concept onto any other object and this is why it does not commit errors. There is evidence (Walton, Bower, Bower 1992; Walton, Bower 1993) that the face allows the child to recognize the right person. If the child has learnt to recognize the faces of its parents and not to mistake them for other people's faces, this is because most of the time there is no face in the vicinity that would be similar to either parent's face. The only face "similar" to the face of the parent seen earlier is precisely that parent's face. As long as the child does not see any other similar face, it uses the name with regard to the person that had been appropriately named and that has a face associated with that name by the child. This name is a singular name since it is used by the child with regard to a single object. If a face is seen often and for long enough at a time, it becomes "clear" and is easily distinguished from others. The frequent and prolonged presence of a face in the child's perception enhances the "clarity" of the overall image of that face and its distinctness from other faces. However, once another similar face is presented, the child may recognize it falsely (often with age brothers are mistaken for each other, although not by the parents). However, there are few doppelgangers in the world and so the child has very little chance to misidentify a person while relying on overall similarity to a previously memorized semantic type.

The above explanation is not applicable to proper names.

Summary

By way of a summary, let us mention other ways of distinguishing certain singular names, such as proper names, from general names. Linguistic literature has listed methods by which children can be taught to distinguish proper names from general ones. In the English language, there are certain markers for it, for example articles. The child can establish their presence or absence. General names are accompanied by the articles "a(n)" or "the" which do not accompany proper names. Children who learn English may be able to distinguish proper names from common nouns owing to the grammatical form at seventeen months old, and they can definitely do so at two years old. However, not all languages possess articles – they do not

feature in Polish. In the Polish language, proper names are distinguished from other words since they, and only they, are capitalized. However, this is not an eat distinction in all languages – in German, for example, all nouns are capitalized. Moreover, this criterion is only applicable to the written language. There is yet another proposition: while introducing a word, use a numerical greater than one so that the learner can gather that it is not a proper name. If we say "There are five apples," it becomes clear that the word "apple" is not a proper name. However, this and similar propositions are strictly technical and do not capture the gist of what the use of proper names consists in.

In order to understand what proper names are it is mandatory that all the relevant problems discussed by philosophers are somehow grasped. It seems that a two-year-old child is too young to be able to capture a proper name's role. A mere utterance of a sound identical with a proper name, even a successful one, does not prove that a proper name has been used with comprehension. To achieve the latter, the child would have to understand that proper names are introduced into language by an act of "christening" regardless of the referent's past, present or future characteristics. This is the main function proper names are created to fulfil.

The distinction between singular names and general names is a cognitive one, that it to say, it can be introduced via cognitive activities. The distinction between proper names and general names, on the other hand, is cultural and can only be introduced after relevant criteria have been presented to the learner. The use of a proper name requires the mastery of the correct use of a singular name and an understanding of the role played by proper names in language, the latter of which is achieved on cognitive-cultural grounds.

Based on empirical research we have assumed that children adopt an aggressive strategy and do not commit errors while using singular names. What remained to be done was to explain how this is possible. We have tried to prove that before acquiring a singular name the child has at least a preliminary concept referring to the appropriate individual – a basic singular concept. A child cannot use a proper name correctly, or incorrectly, because at the beginning of its linguistic education it uses singular names and not proper names. During the process of learning its first names, it is only able to capture the distinction between singular and general names. Psychological findings do not confirm the thesis that two-year-old children distinguish proper names from general names. Our analysis too only justifies the thesis that the child can use singular and general names at this age. Some singular names can be distinguished from general names on cognitive

grounds only, while some other, that is, proper names with a designate, on the cognitive-cultural grounds.

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