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Generic reference in singular NPs: a cognitive grammar experimental approach

Referência genérica em SNs singulares: uma abordagem cognitivista experimental

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Abstract: This paper investigates generic singular noun phrases (NPs) in Brazilian Portuguese, comparing patterns containing a definite article with those that display a zero determiner. The goal is twofold: to characterize the conceptual structures associated with these predications and to experimentally validate this characterization. Within the framework of Cognitive Grammar (LANGACKER, 1987, 1991, 2009, 2013), we assume that both syntactic patterns designate a type (as opposed to a particular instance), which inhabits an abstract conceptual domain (as opposed to physical space). Given this assumption, we argue that: (i) the definite schema implies the previous availability of the domain of instantiation and implicitly conjures up unprofiled types, whereas (ii) the zero determiner schema does not presuppose previous access to the domain of instantiation and does not evoke unprofiled types. To test these hypotheses, an acceptability judgement test was carried out where 30 undergraduate students rated sentences containing definite generic NPs in two conditions: with a contrastive sequence (fully compatible with hypothesis (i)) and without a contrastive sequence (less compatible with hypothesis (i)). The results revealed the existence of a significant difference in the distribution of acceptability ratings in each condition ($p = .043$), thus providing evidence for the conceptual approach advanced here.

Keywords: Cognitive Grammar; experimental approach; generic noun phrase; Brazilian Portuguese.

Resumo: Este artigo se debruça sobre dois padrões de SNs singulares genéricos do português brasileiro – com artigo definido e com determinante zero – com um objetivo duplo: de um lado, caracterizar as estruturas conceptuais associadas a cada um desses padrões; de outro, testar experimentalmente a validade dessa caracterização. À luz da Gramática Cognitiva (LANGACKER, 1987, 1991, 2009, 2013), assumimos que ambos os padrões designam um tipo (em oposição a uma instância particular) inserido em um domínio conceitual abstrato (em oposição ao espaço físico). Com base nisso, sugerimos que (i) o esquema com artigo pressupõe a disponibilidade prévia do domínio de instanciação e evoca a conceitualização implícita de tipos não perfilados, ao passo que (ii) o esquema com determinante zero não pressupõe acesso prévio ao domínio de instanciação e não faculta a conceitualização de tipos não perfilados. Para testar essas hipóteses, foi realizado um experimento de julgamento de aceitabilidade no qual trinta estudantes de graduação

avaliaram sentenças contendo SNs singulares genéricos definidos em duas condições: com sequência contrastiva (condição plenamente compatível com a hipótese (i)) e sem sequência contrastiva (condição menos compatível com a hipótese (i)). Os resultados revelaram a existência de diferença significativa na distribuição dos graus de aceitabilidade entre as duas condições (p = .043), fornecendo evidências em favor da proposta desenvolvida aqui.

Palavras-chave: Gramática Cognitiva; abordagem experimental; sintagma noun genérico; português brasileiro.

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Quem vai pro exterior da favela sente saudade
O gringo[1] *vem aqui e não conhece a realidade*
Vai pra Zona Sul pra conhecer água de coco
E o pobre na favela passando sufoco

(Cidinho e Doca – Rap da Felicidade)

(Those who go abroad miss the slums
The gringo comes here but does not know the truth
The gringo goes to the nice part of town to try coconut water
And the poor man in the slums having a hard time)

(Cidinho and Doca – *Rap da Felicidade* – Happiness Rap)

1 Introduction

The semantics of generic noun phrases (NPs) has deserved special attention in the literature, especially due to studies in formal semantics (KRIFKA *et al*., 1995). Particularly, all languages seem to provide generic singular noun phrases, but they differ regarding the semantic and syntactic restrictions imposed upon their uses. Thus, while non-related languages,

[1] The term "gringo" means "a foreigner who does not understand the language, culture, and/or customs of the land." It is a specific and sarcastic term in Portuguese that has no clear translation in English."

such as Germanic and Romance languages, admit the use of definite NPs with generic interpretation (***o gato*** *é voluntarioso* 'the cat is willful'), Brazilian Portuguese (BP) is unique among Romance Languages in that it allows for generic singular NPs with zero determiner (***gato*** é voluntarioso / 'cat is willful'), as described by Müller (2002a, 2002b).[2]

Among the theoretical branches that integrate Cognitive Linguistics, Cognitive Grammar (CG) is the one that provides the most detailed basis for the semantic characterization of noun phrases (LANGACKER, 1987, 1991). This basis involves the characterization of the NP meaning in terms of conceptualization. Using the Langackerian approach as a starting point, the present work seeks to investigate the difference between two types of generic singular NPs in BP – the definite schema (***o gato*** *é voluntarioso* 'the cat is willful') and the zero determiner schema (***gato*** é *voluntarioso* 'cat is willful') – to associate the internal organization of these predications with specific conceptual structures.

In the wake of CG, this study contends that both schemas are represented in a Type Space (TS), characterized as an abstract conceptual domain. Based on this, this study proposes that generic NPs define the different articulation between the TS and another relevant conceptual domain, the Current Discourse Space (CDS), defined as the mental space that includes the elements and the relations shared by speakers and hearers at each moment of the discourse flow. Specifically, it is argued that the use of a generic singular NP with a definite article assumes previous availability of TS in CDS, while the same is not true for the pattern with a zero determiner.

As observed, this type of approach involves very specific suggestions as to the type of *mental representation* associated with the use of generic singular NPs. It should be acknowledged, however,

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[2] The expression "generic singular with zero determiner" is employed by Langacker (1991) in the scope of his Cognitive Grammar, with merely descriptive purposes. It is also used here in this sense, since Cognitive Grammar is the theoretical framework in which this work is inserted. In this article, therefore, the term "zero determiner" does not presuppose the existence, "in syntax", of the projection of a phonologically unrealized determiner. It is worth emphasizing that this type of interpretation is entirely foreign to the grammar architecture postulated in constructionist models (as is the case of Cognitive Grammar), in which the phonological and semantic representations are not "read" or "interpreted" based on a previous syntactic structure (about this aspect, see Michaelis (2013)).

that this sort of conceptual analysis opens space for an important question: how is it possible to ensure the *psychological reality* of the proposed descriptions? In fact, Cognitive Linguistics' initial insistence on strictly linguistic analysis based on the analyst's intuition has led some researchers to question whether the field has "lived up to its name" or not (PEETERS, 2001). This criticism, it should be noted, did not spare Langackerian CG: some voices, although relatively isolated, have questioned the psychological reality of part of its assumptions (BROCCIAS; HOLMANN, 2007; HOLLMANN, 2013).

Faced with these concerns, and in consonance with what has been called the "empirical turn" in Cognitive Linguistics (STEFANOWITSCH, 2011), this work seeks to test the validity of our theoretical propositions experimentally. Therefore, an acceptability judgment experiment was performed in which BP native speakers were asked to assess, using a five-point Likert scale, how natural a set of sentences including generic singular NPs, would sound. By resorting to this type of action to determine the plausibility of certain theoretical postulates, this study aims to be able to contribute to disseminating the interest in empirical, especially experimental, methods, particularly in the Brazilian cognitive linguist community.

This work is organized in three major sections. Section 2 presents the theoretical assumptions that substantiate the research, detailing CG's basic assumptions, as well as its proposed characterization for nouns and noun phrases. Subsequently, section 3 provides a proposal for a Cognitive Grammar description of the conceptual contribution associated with the two generic singular NP patterns investigated in this study. Finally, section 4 describes the experiment performed and discusses its results.

2 Cognitive Grammar, noun phrases, and grounding

This section focuses on the theoretical assumptions guiding the research. After a brief presentation of CG (LANGACKER, 1987, 1991, 2009, 2013), Langacker's proposal to characterize nouns and noun phrases, with special attention given to generic singular NPs, is described in detail. Finally, this section focuses on the grounding process associated with definite and indefinite noun phrases.

2.1 Brief characterization of Cognitive Grammar

Cognitive Grammar, the theoretical framework developed by Ronald Langacker (1987, 1991, 2009, 2013), has as its fundamental proposition the assumption that grammar, rather than being autonomous, resides in schematic patterns of conceptual structure and symbolization. From this point of view, the term predication is used to designate the meaning of the expression, regardless of its coverage. Such a meaning, it should be pointed out, does not concern only the conceptual content, but also the particular way this content is construed. The notion of *construal* seeks to apprehend this phenomenon, referring to the speaker's ability to conceive and portray the same situation in alternative manners.

Considering that meaning is conceived as interaction between conceptual content and *construal*, CG adopts the term *domain* to refer to content in a uniform way. Therefore, it is assumed that an expression evokes a set of cognitive domains, collectively referred to as a *matrix*, as a basis for meaning. For example, the expression a "glass of water" may evoke the following experiential domains: space, the concept of water, the more schematic concept of liquid (immanent in water), the concept of a container with liquid, notions of volume, etc. On the one hand, the list of domains evoked by an expression is not exhaustive and always depends on the speaker's communicative purpose. On the other hand, a distinction may be established between *basic domain*, which is not derivable or analyzable based on other conceptions (ex. space, time, color space, pitch scale, temperature, taste, smell, etc.) and the *non-basic domain*, which may be reduced to other notions (e.g. instances of sensory, emotional or motor/synesthetic immediate experiences, such as the sense of fear; abstract products of intellectual operations, such as the concept of JUSTICE, VERTEBRATE, etc.). The non-basic domains tend to organize themselves in hierarchies, so that a concept relating to a given level assumes and incorporates one or more basic level conceptions.

Despite acknowledging that not all meanings are based on visual perception, CG resorts to visual metaphors to classify the different aspects of *construal*. These aspects include the dimensions of *specificity*, *focusing*, and *prominence*, which are described below.

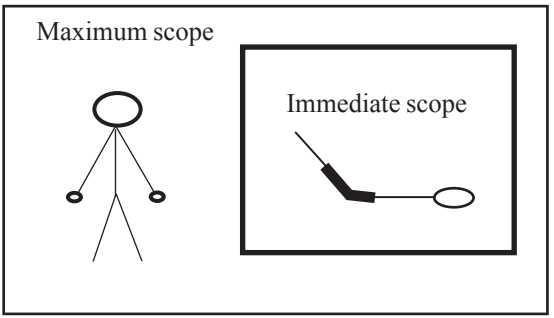
Specificity concerns the level of precision at which a situation is portrayed. Therefore, a given animal may be described as a "rodent", but also as a "squirrel", which implies a higher level of specificity. In this case, the term "rodent" is more *schematic* than "squirrel" – that is,

the "rodent" characterization is viewed as allowing for its instantiation by more specific characterizations, each being used to *elaborate* more detailed specifications (rodent → squirrel → brown squirrel → big brown squirrel).

Focusing is an aspect of *construal* that includes the selection of conceptual content for linguistic presentation, which is the case of organization in terms of *foreground* vs. *background*. In general terms, all expressions evoke background knowledge as a basis for interpretation. For example, to interpret the sentence "I left my car at the meter parking", the cultural knowledge regarding this type of parking must be accessed, without which the hearer could assume the car had been abandoned in such a place. In addition to the foreground vs. background association, focusing includes the extent covered by an expression in the accessed domain. For each domain in a matrix, an expression has a *scope* consisting of its coverage of such a domain, which will always be bounded in its extent. Therefore, the term *glass* evokes a certain spatial extent for the specification of its characteristic form (but not the entire universe), the verb *trip* requires mental access to a sufficiently long period of time for the event to take place (but not eternity), and so on.

It should be noted that scope, being a matter of selection, may also be organized in terms of foreground/background. In certain cases, an expression's *maximum scope* in a given domain (that is, the full extent covered by the expression) must be differentiated from its *immediate scope*, which is more limited and directly relevant for a particular purpose. To use a theater metaphor, the immediate scope may also be referred to as an onstage region (the stage area to which the visual attention is directed). To illustrate this phenomenon, Langacker (2013, p. 63) discusses the word "elbow", which has the concept of human body as a rather central domain of its matrix. The author notices, however, that the body is not an undifferentiated whole, but a structure consisting of different parts. Therefore, the elbow is conceived, first of all, as part of the arm. There is, thus, a conceptual hierarchy (human body > arm > elbow) in which the arm operates as the immediate scope, and the human body operates as maximum scope.

FIGURE 1 – Maximum and minimum scope for the elbow



As shown in Figure 1, based on the maximum scope, the expression "elbow" selects a given conceptual content to place in prominence (that is, onstage in the immediate scope). This selected content constitutes a particular structure named *profile*. Therefore, it is said that, in the immediate scope represented above, the structure 'elbow' is profiled.

2.2 Characterization of nouns and noun phrases

Using the theoretical framework developed to deal with the meaning of linguistic expressions, Langacker (1991) focuses on noun structures, arguing that the semantic function (rather than the structural nature) is the critical factor to understand their internal organization. Based on the proposal that a noun profiles a thing, defined as a region (set of interconnected entities) in a given domain, the author prepares the distinction among noun phrases in terms of their specific conceptual properties. Primarily, the distinction between simple nouns ("cat", "roof", "wine") and NPs ("those three cats", "a wood roof", "the white wine") is investigated, proposing that the first play the role of *type*, while the latter characterize *instances* of a type.

2.2.1 Instantiation: type vs. Instance

For Langacker (1991, p.55), the distinction between type and instance has points in common with the distinction between *extension* and *intension*. A term's extension is the set of objects that may be designated by it in a given world: the extension of the word "cat", for

example, is the set of cats. A term's intension however, is described as the words' function for their extensions that is, a type of characterization that identifies objects that constitute the term's extensions in the world in a precise manner.

In spite of the points in common, however, the author points out important differences between these dichotomies. Particularly, the *type* and *instance* constructs correspond to conceptual structures and focus on how the conceived situations are portrayed linguistically. From the CG standpoint, "type" and "instances" correspond to *concept* and *conceptual entities*, respectively. Therefore, the instance designated by "the cat" does not correspond either to the noun expression reference (usually taken as an object in the world), or to the extent of "cat" (the set of all of these objects). This is explained by an NP's semantic pole being treated as a conceptualization, which may designate even a non-specific or non-referential instance (e.g. "He wanted to find *an apartment* close to work, but there were *no apartments* for sale in the area")

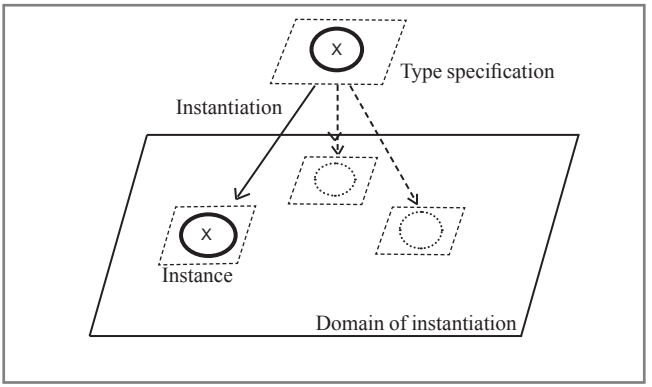
To elucidate the contrast between type conception and instance conception, Langacker (1991) proposes the notion of *domain of instantiation*, defined as the domain in which an entity is deemed to reside or have its primary manifestation. For example, time is the domain of instantiation for events, while space is the domain of instantiation for material substance. More precisely, the domain of instantiation is the domain in which the location of an entity is sufficient to define it as an instance in a category different from other potential instances.

Type and instance conceptions share the property of profiling an entity in the instantiation domain. For example, both "cat" and "the cat" evoke and profile the conception of a hairy creature that occupies a physical space and has a given form in this domain. Therefore, Langacker (1991) proposes an additional factor to account for the distinction: *instances (but not types) have a particular location in the domain of instantiation*. This means that a type specification only uses the domain of instantiation to describe a property of the designated entity (as its form or temporal extension), while an instance specification conceives the domain as having the sufficient extension to support simultaneous manifestations of multiple entities, characterizing the profiled entity as located within this expanse at a specific location in contrast with other possible locations. In the author's words:

> It may be helpful to imagine a type specification as floating about unattached through the domain of instantiation, with the potential to be manifested anywhere within it. This potential is realized, and an instance conception obtained, when the specification is anchored at a particular spot. (LANGACKER, 1991, p. 57).

In the terms of the proposed definition, the instance is thus represented:[3]

FIGURE 2 – Instance specification



Type specifications, however, represent different abstraction levels, so that a *type hierarchy* may contain an ordered sequence (e.g. thing > animal > mammal > cat). In terms of meaning, each type specification is schematic in relation to the following. In addition, the members in each category include those in the next as a subset.

The relations between type/subtype, on the one hand, are usually differentiated from the (sub)type/instance, on the other hand. To address the first, the term *elaboration* is used, while the latter are designated as *instantiation*. Langacker (1991) argues, however, that the distinction is

[3] It should be highlighted that the notion of instantiation is different from the notions of grounding and reference. Grounding, which will be detailed below, presupposes that an instance has been established and a relative indication has been added to the participants in the speech event; instantiation in itself does not provide this indication. In addition to it, the effect of a grounding predication may be the denial of the referential status of the profiled instance (e.g. "He needed a job, but there were no jobs available").

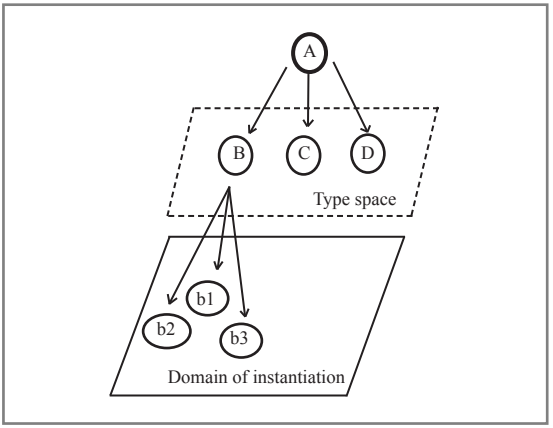
not absolute, and the instantiation may be better understood as a special elaboration case. To defend this position, the author analyzes expressions in which the types are constructed as instances, as seen in the following examples:

(1) The cat is a mammal that may live between fifteen and forty years.

In (1), the NP "the cat" receives a generic interpretation, regarding the animal as type – this is not the case of a particular cat spatially instantiated. At the same time, however, this type is construed as the instantiation of a higher type (mammal).

To represent the conceptual structure associated with the use of NP in (1), firstly, the normal situation should be considered, in which instantiations constitute the lower level in the type hierarchy:

FIGURE 3 – Physical space as domain of instantiation



Structure A represents a type (e.g. mammal), while B, C, and D are subtypes (e.g. cat, human, whale), each one with multiple instantiations. For example, instantiations of B (b1, b2, and b3) may correspond to specific cats, as illustrated by the following examples:

(2) My cat is missing.

(3) The neighbor's cat is bluish gray.

The situation is slightly different when the expression "the cat" characterizes a type of mammal (as in (1)). In this case, the relevant domain of instantiation is no longer the physical space, but the Type Space for mammals, as represented below:

FIGURE 4 – Type space as domain of instantiation

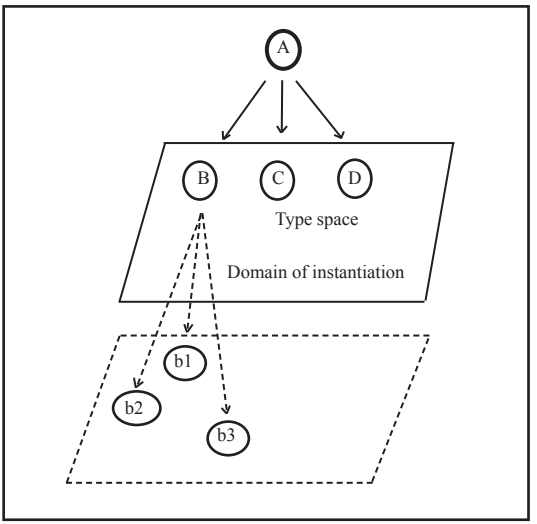


Figure 4 indicates that the type specification for cat is not only a subtype of mammal, but also quantifiable instantiations of this category. In this case, "two mammals" may be mentioned (e.g. "the cat and the dog are two mammals"), as well as "two cats" may be used, referring to "my cat" and "the neighbor's cat".

2.2.2. Grounding

As previously described, all NPs are viewed as profiling a thing, construing it as a quantified instance of a given type and anchored on the Ground – a concept that refers to the communicative situation, and therefore includes the speaker, hearer, place, and time of the speech act. Langacker also resorts to the term grounding predication to refer to predications that relate a profiled instance to a given reference point.

The hearer can always count on two natural reference points, inherent to the communicative situation: the Ground itself and a reference

mass (R_T), which includes all instances in the scope of discourse. For example, for the noun "boy", which designates a discrete entity, R_T corresponds to the set of all instances.

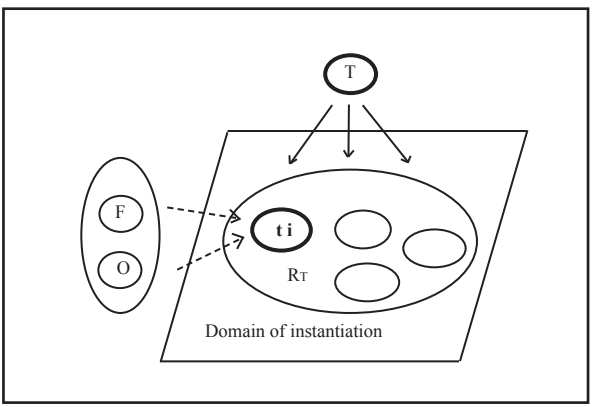
The speaker's goal in using an NP is to mention a given type instance, so that the hearer may determine the intended reference. For example, for a given T type, there is usually an open set of instances (t_1, t_2, t_3,...). In addition, to determine the definite (or indefinite) value of the profiled instance, the external reference point includes speaker and hearer, who are faced with the challenge of directing attention to the same instance, and are responsible for the conceptualization that constitutes the NP semantic pole.

Thus, speaker (S) and hearer (H), who together make up the Ground, face the task of coordinating their mental references at a given T type instance t_1, detached from the reference mass R_T. Both the Ground and the R_T are available as reference points for this purpose.

Considering that the participants in the speech event establish contact with the conceived entity and relate it to their own knowledge of the instances, the grounding predications are considered epistemic. By using the Ground as a reference point, the individual establishes mental contact with t_1; therefore, t_1 is highlighted for awareness in the speaker's current mental state.

Figure 5 represents the instantiation and mental contact phenomena, in which there is a full reference coordination:

FIGURE 5 – Instantiation and mental contact



Based on Figure 5, it can be concluded that an epistemic predication always profiles the grounded entity, but not the grounding relation in itself (although this relation is an essential part of its base, and, therefore, of its meaning). As previously mentioned, the profiled entity for noun expressions is a *thing*: a single and quantified T type instance and taken from the RT reference mass. The grounding predication evokes the interactants as reference points and makes some specification to the establishment of mental contact with t_1 by part of them.

2.2.3. Definiteness and indefiniteness

In this work, special attention is paid to the predications focusing on the degree of definiteness and taking Ground as their primary reference points.

To characterize the definite article, Langacker (1991) resorts to the notion of *current discourse space* (or CDS), which contains the elements and relations built as shared by speaker and hearer. These elements and relations constitute the basis for communication at a given moment in the discourse flow and represent that which is conceived as immediately available to the interlocutors, showing directly in consciousness or being readily evoked by association or inference. Another basic notion is that of *mental contact*, defined as a process in which an entity is singled out for individual awareness. Based on the notions of CDS and mental contact, Langacker (1991, p. 98) proposes the following characterization of the definite article:

> The use of the definite article with type description T in a noun implies that (1) the designated instance t1 of T is unique and maximal in relation to the current discourse space; (2) S has mental contact with t_1; and (3) either H has mental contact with t_1 or the noun alone is sufficient to establish it.

According to this definition, the article itself profiles t_1, and its use implies that the NP is sufficient to place the hearer in mental contact with a uniquely identifiable instance, not relying on other information available in the clause that contains it.

The specification that t_1 is unique in CDS may be illustrated with the following examples:

(4) a. Douglas ate an apple and a fig. The apple was delicious.
b. *Douglas ate a green apple and a red apple. The apple was delicious.

In (4a), the CDS created by the first clause contains only one instance of apple. Therefore, the intended reference is unequivocal. In (4b), the CDS contains two instances of apple; therefore, t_1 is not unique and the definite article "the" is inappropriate.

The specification that t_1 is maximum establishes that t_1 can only be identified with the most inclusive instance in the discourse space, as illustrated by the following examples:

(5) a. José has three cars. The cars are sports cars.
b. José bought twenty liters of water. The water was used to wet the plants.

In these examples, the first clauses introduce an instance of car, with the cardinality of three (e.g. (5a)) and an instance of water, with the volume of twenty liters (e.g. (5b)). These are maximum instances in the discourse space, to which "cars" and "the water" refer properly.

In addition to the definite articles, the NPs with indefinite articles also take the *Ground* as a primary reference point. The latter, however, present a crucial difference in relation to the former. The fact that they are insufficient to place the hearer in mental contact with a unique instance of T. Langacker brings us back to Hawkins' (1978) proposal, in which the indefinite article contrasts with the definite in relation to uniqueness: the former implies that the NP in itself is not sufficient to place the hearer in mental contact with an uniquely determined instance of the category. Therefore, if two mechanics are repairing a car, and several bolts are available, it is possible that one asks the other "Could you hand me a bolt?" – but he/she is unlikely to ask, "Could you hand me the bolt?" This is due to the many instances of bolt in the CDS, defined by the immediate physical circumstances, in this case.

Regarding indefinite phrases, Langacker (1991) points out that there is a clear division in function between those who exhibit the indefinite article and those that occur with zero: the indefinite article occurs only with count single nouns ("He bought a book"), while the zero determiner occurs with count and mass nouns ("Alice drank (Ø) milk)";

"Ø Rats entered the store"). Furthermore, only the zero determiner admits a fully generic *construal* ("Ø Dogs are mammals").[4]

Cases involving the notion of arbitrary instance are especially relevant. One of them is the so-called opaque reading, which constitutes one of the possible readings for the sentence *Maria wants to buy a dress*. Here, the referent dress is not accessed in the 'reality' space, but rather in the space representing Maria's desire – it is, therefore, a non-specific dress.[5]

Another case regards the value of an indefinite article in noun predicate constructions (e.g. "Alice is a thief"). Finally, there is the use involving generic sentences, such as "A child always has dreams." All of these uses share the property of being able to be considered non-specificity cases, in which a given t_1 instance of T is evoked for a particular limited purpose, and only withstands in contexts of this kind. It should be highlighted that these sentences do not imply that speaker and hearer have pre-existing contact with the instance designated by the indefinite phrase. The instance, in fact, is evoked in order to establish a generic statement and, as such, it is conceived as a representative instance of the category, rather than a particular instance, known on independent bases. Thus, both "a child" and "dreams" may lead to non-specific readings, similarly to "a dress" in opaque readings of the sentence "Maria wants to buy a dress."

One singular phrase case, however, was not discussed by Langacker. This is the generic singular noun phrase with a zero determiner, whose occurrence is not grammatical in English ("*Cat is lazy"). This type of structure, however, occurs in Portuguese ("*Gato é preguiçoso*"), and is included in this work's investigation focus. The next section presents a theoretical proposal that seeks to broaden the Langackerian proposal in order to contrast the generic uses of singular phrases with definite article and with zero determiners in BP.

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[4] For a more detailed discussion of these cases, refer to Langacker (1991, p. 89-95 and p. 103-107).

[5] The sentence also admits the transparent reading in which "dress" is accessed on the Base ('reality' space). This reading, as it is specific, is not included in the arbitrary instance cases discussed by Langacker (1991).

3. Generic singular NPs in BP: a Cognitive Grammar approach

This section proposes a Cognitive Grammar analysis for two types of generic singular NP in BP: the zero determiner pattern, as in (6a) and (7a), and the definite article pattern (6b) and (7b).

(6) a. *Gato é muito voluntarioso.* 'Cat is very willful.'
b. *O gato é muito voluntarioso*. 'The cat is very willful.'

(7) a. *Brasileiro gosta de feijoada*. 'Brazilian likes bean stew.'
b. *O brasileiro gosta de feijoada.* 'The Brazilian likes bean stew.'

Although the ultimate goal in this study is to explore the *differences* between these structures, it is worth starting the analysis by pointing out the similarities between them. First of all, both patterns designate *types* (as opposed to particular instances), which means that both the schema definite article + NP and the schema Ø + NP profile a category inserted in a Type Space but not a particular entity inserted in the physical space. Thus, when someone utters (6a) or (6b), this person is referring to a category (cat) that exists in an abstract space (let's say, the abstract space of animals, or mammals, or felines), but not a particular being (let's say, Tom) who exists in the physical space (even if, in Tom's case, it is not the physical space in the real world). Similarly, when someone utters (7a) or (7b), this person is referring to the generic category BRAZILIAN, which exists in the abstract space of nationalities, rather than to any specific Brazilian that inhabits the physical world.

In CG terms, this proposal may be translated as follows: when generic singular NPs are involved, the instantiation domain for the NP head referent corresponds to a Type Space – that is, an abstract conceptual domain. Taking the NP subjects of (6) as examples, this idea may be represented as follows:

FIGURE 6 – Partial conceptual representation of the generic expressions "Gato" (Cat) and "O gato" (The cat)

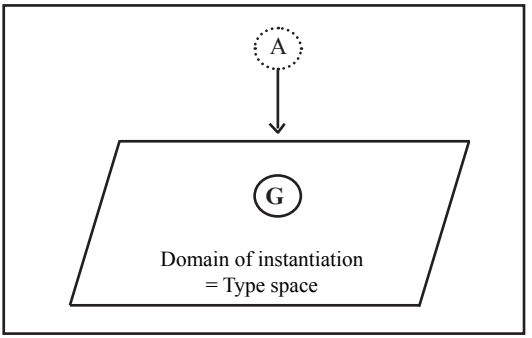

Figure 6 illustrates a type hierarchy in which the letter A represents the type animal and the letter C represents the type cat. A bold line was used in the circle around the letter C to indicate that the type of cat is conceptually *profiled* by the expressions "Cat" and "The cat"; by the same logic, the dotted line in the circle around the letter A is to indicate that the animal type corresponds to the unprofiled portion of predication (that is, that which Langacker calls *base*).

If the above representation captures the similarities between the two generic NP patterns analyzed here, the differences between them should be investigated. To achieve this, the hypothesis in this study is divided into two parts: (i) a hypothesis referring to the conceptual representations shared by the interlocutors – and, therefore, available in the CDS – at the moment *immediately before* the use of each one of the patterns and (ii) a hypothesis referring to the added conceptual representations – which, therefore, become available in the CDS – due to the very use of each one of the generic NP patterns. In the first case, it means investigating the *discourse context that licenses* the use of one structure or the other; in the second case, it means describing the *conceptual scenario directly predicated* by the investigated structures.

Regarding the first point, it is suggested that the definite pattern is licensed in the contexts in which the conceptual instantiation domain for the referent NP head is previously available. In CG terms, this means that the Type Space that encompasses the type designated by the NP must

be previously accessible in the Current Discourse Space. This situation may be represented as follows:[6]

FIGURE 7 – Representation of the discourse context that licenses the article pattern

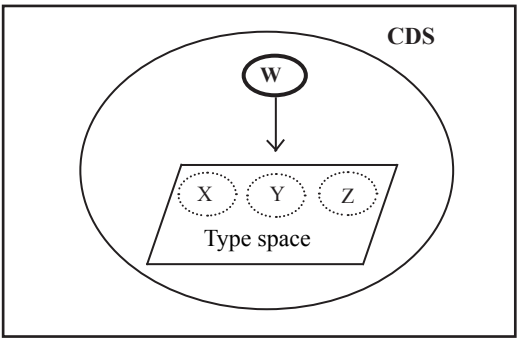

Figure 7 seeks to capture the knowledge shared by the participants in the communicative situation at the moment before the utterance of a generic singular NP with a definite article. The presence of the W type represents the fact that, at this point in the interaction, an abstract conceptual domain must be accessible to both the Speaker and the Hearer. By definition, the mental access to this category enables the conceptualization of a Type Space, as well as the type inserted in it. These types, indicated by the variables X, Y, and Z in the diagram above, are represented by dotted lines to mark the fact that, at this time, they are not profiled, as they have not yet been mentioned in an explicit manner. In other words, its conceptualization results exclusively from the world knowledge shared by the interactants. Figure 7, therefore, represents a situation in which a more general category (such as an animal, for example) is already accessible, leading to the conceptualization of a Type Space (for example, the conceptual abstract space of the animal species) and to the implicit – or in Langacker's terms "offstage" – "visualization" of types belonging to this space (for example, cat, dog, and bat).

[6] Since the Current Discourse Space is treated by Langacker (1991, p. 97) as a type of mental space, in Fauconnier's (1994) terms, it will be represented as a circle, as traditionally done in the Mental Space Theory.

Regarding the zero determiner pattern, it is suggested that the discourse context that licenses it is less specific – fundamentally, it is characterized by the *absence* of a general category (such as animal, or nationality, or any other) in the Current Discourse Space. In other words, it is suggested that the formulation without the article will be preferred when the Type Space – which, as seen, operates as the instantiation domain for the NP head referent – is *not* available in CDS. This idea may be represented as follows:

FIGURE 8 – Representation of the discourse context that licenses the pattern with a zero determiner

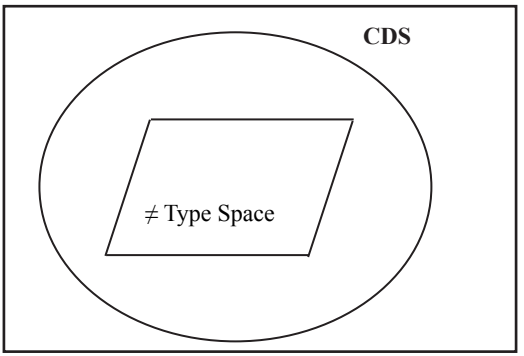

Figure 8 represents a situation in which the conceptual abstract domains that hold the instantiation of the type designated by the generic NP is not found in the CDS, since it was not activated in the discourse context. For this reason, abstract types are also not represented in the above diagram (such as those indicated by the variables X, Y, and Z in Figure 7). In practical terms, this means that a crucial difference between the structures with an article and a zero determiner regards the previous availability of the entity to be profiled by the NP: it is suggested that, in the first case, this entity is previously available (even if "offstage") while, in the second case, it is not present in the CDS.

This leads to the second part of the hypothesis in this study – that which refers to the conceptual representation evoked by the generic singular NP itself. If the alternative with the article is used in an interaction situation, such as that represented in Figure 7, this means that its role is simply that of *profiling* an entity that is previously available

in the CDS (at the expense of other identities that equally populate the Type Space). In contrast, if the alternative without article is used in the context represented in Figure 8, this means its role will be that of inserting a new entity in the EDC. This difference is evidenced by the contrast between figures 9 and 10:

FIGURE 9 – Conceptual representation associated with the generic singular NP with a definite article

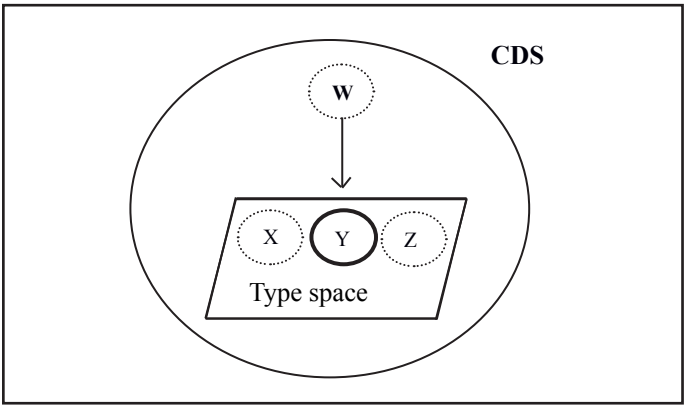

FIGURE 10 – Conceptual representation associated with the generic singular NP with a zero determiner

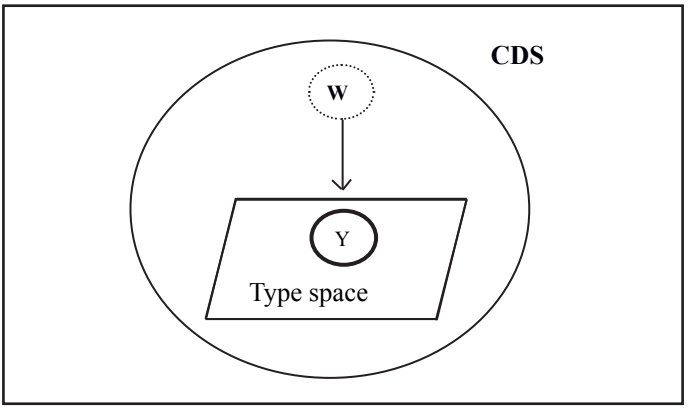

Figure 9 represents the fact that the role of the generic singular NP with an article is that of profiling (as indicated by the thicker line around Y) an entity already present in the abstract Type Space that serves as an instantiation domain for its head referent (as indicated in Figure 7). The Figure also helps to visually explain the idea that the pattern with an article *selects* a conceptual entity (the one represented by Y) within a set of unprofiled types (those represented by X and Z).

Figure 10, in turn, represents the idea that the generic singular NP with a zero determiner establishes a new Type Space in the Current Discourse Space, at the same time it profiles a type inserted in this space (represented here by the variable Y). The comparison between figures 9 and 10 illustrate that the difference between the two generic singular NP patterns regards the unprofiled part of predication (that is, to what Langacker calls base): crucially, only the alternative with the article enables the "visualization" of unprofiled types present in the instantiation domain, in addition to the one directly designated by the NP. The differences between the two structures are summarized in the table below:

TABLE 1 – Differences between the generic singular NP patterns with and without a definite article

	Conceptual Representation Associated with the Previous Context	**Conceptual Representation Associated with the Generic Singular NP**
DEFINITE ARTICLE + NOUN	Type Space available in CDS; types available in CDS but not profiled.	Profiling of one of the types inserted in the Type Space previously available in the CDS.
ZERO DETERMINER + NOUN	Type Space and types not available in the CDS	Definition of a new Type Space and a new type in CDS

As mentioned in this article's Introduction, Cognitive Grammar has received some criticism due to the alleged absence, or at least lack, of experimental support for their theoretical constructs (HOLLMANN, 2013; BROCCIAS; HOLLMANN, 2007) – in Hart's (2014, p. 16) terms, "The psychological reality of Cognitive Grammar is, at this point in time, plausible but not yet proven." Therefore, analyses based on CG may be

considered productive and instigating hypotheses, but they could hardly do without some type of empirical check.

This is valid, naturally, for the analysis developed in this section. On the one hand, it is possible that some will consider it productive and instigating – it may help to understand, for example, why expressions with generic singular NP with and without the article *may seem* synonymous (given that they profile the same type of entity, in the same type of Instantiation domain), at the same time it explains why they, in fact, *are not* synonymous (since they are different regarding the unprofiled portion – that is, the implicit portion – of predication). However, how reliable is this type of suggestion? What evidence do we have that the perception of a sentence such as (6b) triggers the implicit conceptualization of other animals (let's say, dog, bat, etc.), while the same effect is not obtained with a sentence such as (6a)? This is the kind of question addressed in the next section.

4 Testing the hypothesis

To verify the psychological reality of the analysis developed in the previous section, an off-line acceptability judgment test was conducted. In this section, the experiment is described (item 4.1) and, subsequently, its results are presented and discussed (item 4.2).

4.1 The experiment: overview

A five-point Likert scale was used for the experiment in acceptability judgment. The degree of stimulus acceptability, therefore, is the dependent variable, which could vary between levels 1 (completely unacceptable) and 5 (completely acceptable). The only independent variable considered was the presence or absence of contrast. Thus, the critical stimuli were only divided into two conditions – with contrast and without contrast – according to the examples below:

(8) *A criança gosta de doces e guloseimas*. 'The child likes candies and sweets.'

(9) A *criança gosta de doces e guloseimas*. 'The child likes candies and sweets.' *Já o adulto tende a ter um paladar mais apurado*. 'The adult, however, tends to have a more refined taste.'

The stimuli in the non-contrast condition, such as (8), predicate over a single category (in the above example, child). Differently, the stimuli in the non-contrast condition, such as (9), establish an opposition between two different categories (in the above example, child and adult).[7] In this experiment, it is expected that the degree of stimulus acceptability will be related to the presence or absence of contrast, so that *the stimuli with contrast will be considered to be more acceptable than the stimuli without contrast* (refer to section 4.1.3, however, for a different formulation of the experimental prediction).

To understand the logic behind the experiment, it is important to recall the hypothesis developed in section 3. In short, it is contended that the generic singular NP with definite article (i) presupposes the previous availability of the Type Space that will operate as an instantiation domain for its head referent and (ii) allows for the implicit conceptualization of unprofiled types. At the same time, and conversely, it is suggested that the generic singular NP with a zero determiner (i) does not presuppose the previous availability of the Type Space that will operate as its head referent instantiation domain and (ii) does not allow for the implicit conceptualization of unprofiled types.

By manipulating the presence and absence of contrasting sequences in the experimental stimuli, it was possible to create stimuli that are more and less compatible with the description suggested for the generic NP pattern with an article. Specifically, the insertion of an additional sequence in stimuli with contrast favors the inference that the TS conceptual domain corresponds to the discourse topic itself. For example, the second sentence in (9) favors the interpretation that the sentences present in the stimulus are part of a broader discourse sequence in which the topics discussed are the differences among the stages of human life. Technically, performing this type of inference means assuming that (i) the Type Space PHASES OF HUMAN LIFE was previously available for the hypothetical interlocutors in the communicative situation in which the sentence would have been uttered and (ii) the function performed by the generic NP was that of profiling a particular type (for example, the type child) among other conceptually available types (for example, teenager and adult). By assuming that the experimental subjects will actually perform this inference, this proposal

[7] For details on the composition of stimuli, refer to section 4.1.2.

produces the prediction that stimuli with contrast should be considered to be natural and successful.[8]

In the stimuli for the condition without contrast, however, the absence of a contrastive sequence makes the interpretation that the TS conceptual domain corresponds to the discourse topic itself less evident or immediate.[9] In other words, it is assumed that, in a sentence such as (8), the experimental subjects will have less subsidies – if compared to the condition with contrast – to interpret the utterance as part of a broader discourse sequence about the phases of human life. Technically, this means that they will be less prone to assume that (i) the TS phases of human life was previously available for the interlocutors and (ii) the generic NP would only have performed the function of profiling a particular type among a set of available types. If this hypothesis is correct, the absence (or lesser availability) of this interpretation should lead to a relatively lower degree of acceptability for stimuli without contrast.

In summary, the experimental conditions seek to manipulate the activation of contextual inferences by the experimental subjects: while the insertion of a contrastive sequence should favor evoking the type of conceptual representation associated with the generic singular NP with an article, the suppression of this very sequence should result in the reverse effect. However, since all critical stimuli have generic NP with articles, it is expected that this difference results in a significant difference in the acceptability of stimuli belonging to each of the conditions.

4.1.1 Experimental design, stimuli, and participants

Voluntary participants in the experiment included 30 subjects (21 women and 9 men), between 18 and 57 years of age, all of which were freshmen in the Language School at the Federal University of Rio de Janeiro (UFRJ) and BP native speakers. In exchange for their participation, volunteers were awarded credits for Scientific-cultural-academic activities (AACCs).

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[8] Naturally, the experiment design and the stimuli composition presuppose the idea that hearers/readers will be able to make inferences about the context in which the utterances would have been used (WESTERA; BRASOVEANU, 2014; SAVIC, 2014).

[9] Which does not mean that this interpretation is impossible – section 4.2 will resume this argument.

In total, 16 critical stimuli (eight for each condition) and 16 filler stimuli were prepared. Using the Latin-square design, the critical stimuli were divided into two scripts (designated here as scripts A and B) to avoid the repetition of lexical material between the two experimental conditions. Given that an intra-subject design was selected, each participant evaluated four critical stimuli with contrast and four critical stimuli without contrast (in addition to 16 fillers), totaling 240 observations.

To create the stimuli, seven semantic domains were defined in advance: *food*, *drinks*, *phases of human life*, *means of transportation*, *electronic equipment*, *sports*, and *clothing*. For the *food* domain, two pairs of contrasting classes were defined (*chocolate vs. apple* and *French fry vs. fruit*); in addition, for each one of the six remaining domains, a pair of contrasting classes was defined (respectively, *milk vs. tea*; *child vs. adult*; *car vs. subway*; *laptop vs. tablet*; *soccer vs. golf*; *coat vs. tank top*). Finally, for each of these eight opposing pairs, two sentences – one with contrast and another without contrast – resulting in 16 critical stimuli. All stimuli are shown in appendix 1.

The critical stimuli were constructed according to the model of sentences (6) and (7), repeated below, for convenience purposes, as (8) and (9):

(8) A *criança gosta de doces e guloseimas*. 'The child likes candies and sweets.'

(9) A *criança gosta de doces e guloseimas*. 'The child likes candies and sweets.' *Já o adulto tende a ter um paladar mais apurado*. 'The adult, however, tends to have a more refined taste.'

As seen, the critical stimuli always exhibit a definite article (there are not, therefore, any stimuli with zero determiners).[10] In sequences belonging to the condition without contrast, such as (8), there is a single sentence and only one generic singular NP, always in the subject position. In turn, sequences belonging to the contrast condition, such as (9), present two sentences, with one generic singular NP in each. Taken together,

[10] According to the proposal developed in section 3, the pattern with a zero determiner is unmarked in relation to the content inserted in the CDS before the sentence utterance time. For this reason, the theoretical hypothesis does not predict that this pattern is necessarily incompatible with the existence of contrasting sequences. This is what justifies the decision to include only stimuli with definite articles in the experiment.

these two sentences describe a contrast situation: the first sentence subject referent (coded as a generic singular NP with a definite article) is contrasted, based on a given attribute, with the second sentence subject referent (equally coded as a generic singular NP with a definite article). In (9), for example, the relevant attribute concerns the sophistication of taste: it is, therefore, stated that members of the child class have less sophisticated taste than do the members of the adult class.

4.1.2 Materials and procedures

The experiment was setup in the software PychoPy, version 1.84.2, and applied using a Positivo Duo ZX3020 laptop, with 10.1-inch screen. Initially, all volunteers received oral explanations about the experimental task and about the experiment dynamics. Afterwards, each subject evaluated, in the presence of the researcher, five training stimuli. After that, participants were left on their own.

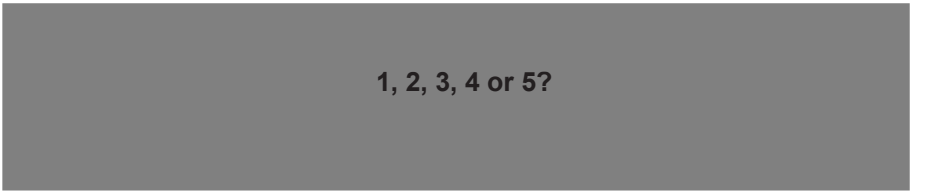
At first, the subjects had access to an initial screen with written instructions (appendix 2), which they could read as many times as they wanted and for as long as necessary. To ensure the generic (rather than specific) interpretation of the critical stimuli, this initial text requested the participant to devise a hypothetical situation in which a father was relaying "a series of teachings about several subjects and beings" to his child. After that, the same text requested the participants to evaluate the acceptability of the sentences produced by this hypothetical father, based on a five-point scale:[11]

1. Completely unacceptable
2. Hardly acceptable
3. Averagely acceptable
4. Very acceptable
5. Completely acceptable

After having read and understood the initial instructions, the participant should press the space bar so that the stimuli presentation would start. The 24 text sequences to be judged by each subject were organized in pseudo-random order, so that critical sentences would not be shown in consecutive stimuli. Each stimulus was shown for 4000 ms, followed by the screen shown in Figure 11:

[11] The text with the initial instructions may be read in appendix 2.

FIGURE 11 – Question screen referring to the judgment in Likert Scale



This screen, in turn, was visible for an undetermined amount of time, until the participant indicated, by means of the numbers on the keyboard, the acceptability degree of the sequence exposed on the immediately previous screen. This answer would automatically lead to the exhibition of the subsequent stimulus.

4.1.3 Statistical analysis and experimental predictions

For the statistical analysis, a chi-square test of homogeneity was conducted by means of the software Action Stat, version 3.1.43.724.694. The chi-square technique was selected, to the detriment of the more traditional Variance Analysis, since the questioning exists in the literature as to the possibility of treating data derived from the Likert scale as numerical data (JAMIESON, 2004). Therefore, the more conservative methodological choice to treat the degree of acceptability as a categorical variable was assumed here.

Specifically, the chi-square test of homogeneity evaluates whether two or more populations have equivalent distribution for a given categorical variable or not. In the case of this study, the populations correspond to the two experimental conditions (with and without contrast), while the categorical variable corresponds to the very degree of acceptability attributed to each stimulus by the participants in the experiment. Therefore, the chi-square test of homogeneity allows one to evaluate if the proportion of sequences with degrees of acceptability of 1, 2, 3, 4, and 5 is equivalent for both conditions.

The experimental prediction of this study was informally presented above as follows: the stimuli for the condition with contrast will be considered to be more acceptable than the stimuli for the condition without contrast. Since this study will not operate with numerical averages, but rather with a frequency count of the degrees of

acceptability, this prediction will be formulated in the following terms: *the ratio of totally unacceptable (degree 1), hardly acceptable (degree 2), averagely acceptable (degree 3), very acceptable (degree 4)*, and *totally acceptable (degree 5) sentences will not be equivalent for both experimental conditions*. If this prediction is correct, this result will reveal the existence of a statistical correlation between the presence or absence of contrast, on the one hand, and the degree of acceptability of sentences with generic singular NPs with articles, on the other.

4.2 Results and discussion

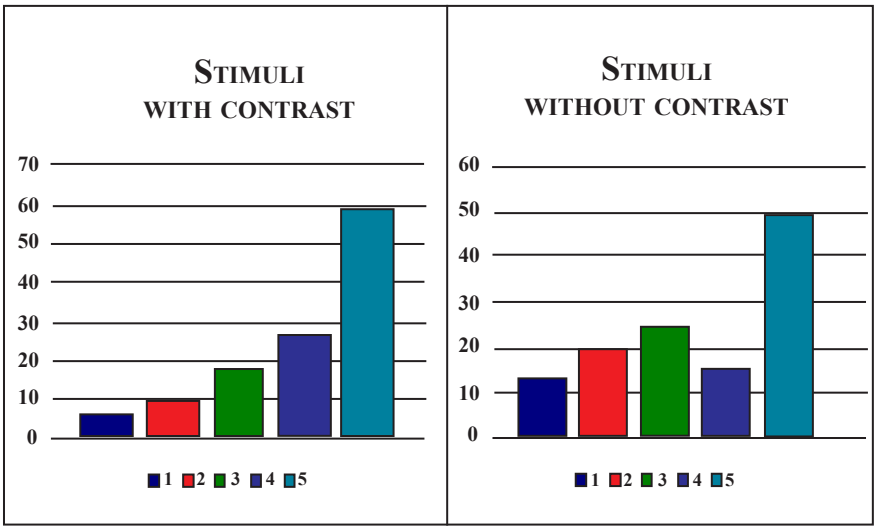
As predicted by the theory developed in section 3, there is a significant difference in the distribution of the degree of stimuli acceptability between the two experimental conditions (χ^2 (4) = 9.832, p = .043), with a moderate intensity effect (Cramer's V = .2).[12] Table 2 and chart 1 summarize the distribution of the degrees of acceptability for each condition:

TABLE 2 – Acceptability degree of critical stimuli

	WITH CONTRAST		WITHOUT CONTRAST		TOTAL
Degree of acceptability	Number of answers	Percentage value	Number of answers	Percentage value	
1	6	5%	11	9.16%	17
2	10	8.33%	20	16.66%	30
3	18	15%	24	20%	42
4	27	22.5%	15	12.5%	42
5	59	49.16%	50	41.66%	109
Total	120		120		240

[12] It is typically assumed that Cramer's V values equal to or higher than 0.1 and lower than 0.2 indicate a weak effect, values equal to or higher than 0.2 and lower than 0.4 indicate a moderate effect, values equal to or higher than 0.4 and lower than 0.6 indicate a strong effect, and values higher than 0.6 indicate a very strong effect (REA; PARKER, 1992).

CHART 1 – Dada distribution for the conditions with and without contrast



The pattern emerging from the above values is as follows: the rate of totally unacceptable (degree 1), hardly acceptable (degree 2), and averagely acceptable (degree 3) sentences is higher for the condition without contrast, while the number of very acceptable (degree 4) and totally acceptable (degree 5) sentences is higher in the condition with contrast. Specifically, the sentences deemed totally acceptable comprise approximately 49.16% of the total number of stimuli with contrast and 41.66% of the total number of stimuli without contrast; similarly, 22.5% of the contrasting stimuli received an acceptability degree of 4, while the same occurred with 12.5% of the non-contrasting stimuli. At the same time, when stimuli with a lower degree of acceptability (degrees 1, 2 and 3) are concerned, the situation is reversed: the proportions are systematically higher for the condition without contrast (respectively, 9.16%, 16.66%, and 20%) than for the condition with contrast (respectively, 5%, 8.33%, and 15%).[13]

[13] One of the reviewers argues that the difference between this proportion of scores 5 for stimuli with or without contrast is "minimal". The crucial datum, however, is that the difference in distribution in degrees of acceptability under both conditions is *statistically*

The results suggest, therefore, that the presence of a second generic NP, with contrasting function, in the same textual sequence increases significantly – albeit moderately – the acceptability of utterances that contain generic NP with a definite article (and, naturally, the absence of the second generic NP produces the reverse effect). That is, the speaker is more inclined to accept a decontextualized sentence with a generic NP introduced by a definite article when it is followed by an additional sentence capable of building a relation of opposition.

This is precisely what could be expected based on the theoretical proposal developed in section 3. As argued, the contrasting sequence invites the reader to evoke the type of conceptual schema associated with the syntactic pattern for generic NP with a definite article. In this schema, it is worth recalling: (i) the Type Space that functions as the instantiation domain for the NP head referent is previously available in the Current Discourse Space and (ii) this same Type Space is occupied not only by the NP head referent, but also by a set of conceptually presupposed – that is, "offstage", or "unprofiled" – types If, faced with a linguistic stimulus, the subject is capable of mentally evoking this scenario (as represented in Figures 7 and 9), it is expected that this subject perceives the utterance as natural and acceptable. At the same time, if the individual *fails* to construct this representation (a situation more likely in the *absence* of a contrasting sequence), it is expected that the subject feels some type of estrangement before an utterance with definite generic NP. Therefore, the difference in the distribution of the degree of acceptability between the two conditions is interpreted as being a result of the higher or lower probability of evoking the type of conceptual representation associated with the variant defined in the generic singular NP.

At the same time, it should be recalled that this experiment was capable of detecting only a moderate effect of the presence of the second NP on the distribution of the degree of acceptability of the stimuli (Cramer's $V = .2$). This study contends that this may be explained, at least partially, by assuming that the readers/hearers never interpret utterances in a discursive and informational void. This means that, even in cases in which no discourse context is explicitly provided, readers/hearers will tend to evoke some type of contextual surrounding for the sequence

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significant and reveals a *moderate effect*. These are, therefore, the two empirical facts to be explained. This section proposes an interpretation for them.

being interpreted.[14] Thus, when faced with an isolated sentence, such as *A criança gosta de doces e guloseimas* (The child likes candies and sweets), it is conceivable that a significant part of the participants has assumed (unconsciously) a previous discourse context in which the differences between the tastes of children and adults were being discussed. In other words, it is likely that, in many cases, the absence of a contrasting sequence is not sufficient to prevent subjects from evoking the conceptual scenario associated with the definite generic NP – a hypothesis that also helps to explain the high incidence of fully acceptable sentences (degree 5) for the condition without contrast.

It is reasonable to speculate, therefore, that the effect is stronger than what could be observed in this experiment and that the detection of a merely mild effect was an artifice of the experimental design. To confirm this speculation, experiments that enable detecting, in a more direct manner, the conceptual representations associated with the different syntactic patterns, such as a forced choice task with images, are welcome. For the purposes of this study, the advantage of this type of design is its reduced vulnerability to the pragmatic accommodation phenomenon, which may interfere in the interpretation of linguistic sequences. Be it as it may, even if some type of pragmatic accommodation has in fact been performed by several subjects, with a high number of stimuli, it is clear that it was not sufficient to *cancel* the difference in the distribution of the degree of stimuli between the two experimental conditions. Strictly speaking, the fact that the contrast effect has been observed even in a situation conductive to pragmatic accommodation strongly weighs in favor of the hypothesis contended in this study.

A second relevant point concerns the existence of possible alternative explanations for the identified differences in acceptability. It is possible to observe that the stimuli for the two conditions differ not only as to contrast, but also as to informativeness – specifically, the stimuli for the condition with contrast convey a larger amount of information.[15]

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[14] This trend originates the well-known phenomenon of *presupposition accommodation* (LAMBRECHT, 1994): if one enters an environment and hears the utterance "*Foi o Diego que fez o gol do Flamengo*" ("It was Diego who scored the goal for Flamengo"), this person will not be able to avoid the assumption that the previous conversation was around the definition of the Flamengo goal authorship.

[15] The authors wish to thank one of the anonymous reviewers for this observation.

To evaluate if the data reveal the existence of an informativeness effect independent from the contrast effect, a second experiment is currently underway.

5. Final considerations

This work presented experimental results that are compatible with a cognitive analysis on the semantics of generic singular NPs. Based on the noun phrase characterization established by Langacker (1991), the existence of a conceptual difference between definite generic NPs and indefinite generic NPs (with zero determiners) in BP was postulated. Based on an acceptability judgment task, it was possible to confirm the prediction that the presence of a second generic NP, with a contrasting function in the same textual sequence, significantly increases the acceptability of utterances with a definite generic NP. This result was interpreted as evidence that, in BP, definite generic NPs evoke different conceptual representations, as indicated in Figures 7 to 10. The experimental treatment of theoretical constructs associated with Cognitive Grammar is a field yet to be fully explored, especially regarding BP. In this sense, the present research opens a promising investigation path, which may empirically support the associations between syntactic patterns and conceptual structures. Regarding the characterization of generic noun phrases in BP, the results found here encourage the deepening of the proposition, based on new experimental designs, at the same time that they suggest the broadening of the analysis to include other types of generic NPs in BP.

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Appendix 1

Critical stimuli for Script A

1. *A criança gosta de doces e guloseimas*. 'The child likes candies and sweets.'
2. *O futebol tem muitos adeptos no Brasil.* 'The soccer has many fans in Brazil.'
3. *O carro só serve para atrapalhar a vida.* 'The car is only good for messing up life.'
4. *A batata frita engorda.* 'The French fry makes you fat.'
5. *O chocolate dá espinha.* 'The chocolate will give you pimples.'*Já a maçã faz bem para a pele*. 'The apple, however, is good for your skin.'
6. *O notebook ocupa muito espaço na mala*. 'The laptop takes up a lot of room in the suitcase.' *Já o tablet é leve e mais prático de carregar*. 'The tablet, however, is light and practical for carrying around.'
7. *O casaco é totalmente desnecessário no inverno do Rio de Janeiro*. 'The coat is totally unnecessary in Rio de Janeiro in the winter.' *Enquanto isso, a regata é um item comum em todas as estações*. 'The tank top, however, is an item common in all seasons.'
8. *O leite agrava a gastrite*. 'The milk worsens gastritis.' *Por outro lado, o chá de hortelã melhora problemas estomacais*. 'The mint tea, however, makes stomach problems better'

Critical stimuli for Script B

1. *O chocolate dá espinha.* 'The chocolate will give you pimples.'
2. *O leite agrava a gastrite*. 'The milk worsens gastrites.'
3. *O notebook ocupa muito espaço na mala*. 'The laptop takes up a lot of room in the suitcase.'
4. *O casaco é totalmente desnecessário no inverno do Rio de Janeiro*. 'The coat is totally unnecessary in Rio de Janeiro in the winter.'
5. *O futebol tem muitos adeptos no Brasil.* 'The soccer has many fans in Brazil.' *Já o golfe não é muito popular*. 'The golf, however, is not very popular.'
6. *A criança gosta de doces e guloseimas*. 'The child likes candies and sweets.'*Já o adulto tende a ter um paladar mais diversificado*. 'The adult, however, tends to have a more diversified taste.'
7. *A batata frita engorda.* 'The French fry makes you fat.' *Já a fruta é indicada para quem faz dieta.* 'The fruit, however, is recommended for people on diets.'
8. *O carro só serve para atrapalhar a vida.* 'The car is only good for messing up life.' *O metrô, por outro lado, facilita a locomoção das pessoas.* 'The subway, however, makes it easier for people to move around.'

Filler stimuli

1. *Todo ônibus possui assentos preferenciais para idosos e gestantes*. 'Every bus has preferential seats for senior citizens and pregnant women.'
2. *Florestas são adequadas para se fazer trilhas*. 'Forests are appropriate locations for trails.'
3. *Todo instrumentista possui instrução formal*. 'Every instrument player has formal education.' *Dessa maneira, há músicos que não possuem treinamento algum*. 'Therefore, there are musicians who do not have any training.'
4. *Uma boa parte dos avós gosta de contar histórias para os seus netos*. 'A large part of the grandparents likes to tell stories to their grandchildren.'
5. *Todo quarto de criança é bagunçado*. 'Every child room is messy.'
6. *As famílias costumam se encontrar aos domingos*. 'The families usually get together on Sundays.'
7. *Os gatos são muito amigáveis*. 'The cats are very friendly. '*Entretanto, não têm medo das pessoas*. 'However, they are not afraid of people.'
8. *Os jogadores de futebol são muito famosos no Brasil*. 'The soccer players are very famous in Brazil.' *Mas os atletas de hóquei não costumam ter muitos fãs*. 'But the hockey athletes do not usually have many fans.'
9. *As sorveterias vendem mais em dias quentes*. 'The ice cream parlors sell more on hot days.' *Assim, lucram mais no inverno*. 'Therefore, they profit more in the winter.'
10. *Roqueiro costuma usar roupas pretas e pulseiras metálicas*. 'Rocker usually wears black clothes and metal bracelets.'
11. *Os cantores líricos cantam apenas música sertaneja*. 'The lyric singers only sing country music.'
12. *Lanchonete é um bom lugar para se fazer refeições rápidas*. 'Diner is a good place to make fast meals.'
13. *As cidades grandes são muito barulhentas*. 'The big cities are too noisy.' *Mesmo assim, são lugares recomendados para se morar.* 'Even so, they are recommended places to live.'
14. *Flash é o herói mais rápido dos quadrinhos*. 'Flash is the fastest hero in comics.'*Dessa forma, ele pode correr mais rápido que a velocidade da luz*. 'Therefore, he can run faster than the speed of light.'
15. *Cidades quentes são péssimas para se encontrar gorros e agasalhos*. 'Warm cities are terrible places for finding hats and coats.'
16. *Os escritores costumam não gostar de ler livros*. 'The writers do not usually like to read books.'

Appendix 2

You are about to participate in a very simple linguistic experiment. Read the instructions below carefully and answer what is asked.

Assume that you are listening to a father passing on a series of teachings to his child, about different topics and beings. After that, you will see some phrases produced by him. Your task is simply to judge whether they sound acceptable and natural in Portuguese or not. For such, consider the following scale:

1. Completely unacceptable
2. Hardly acceptable
3. Averagely acceptable
4. Very acceptable
5. Completely acceptable

Keep in mind that you are not being evaluated and, therefore, you must not take grammar rules learned in school into account. To score each sentence (1, 2, 3, 4 or 5), take into account only how they *sound* to your ears. In other words, make your judgment using only your intuition as a Portuguese speaker.