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**Representation of the meanings of *hát*, *izé* and *ugye* discourse markers
in the extended Natural Semantic Metalanguage model**

TOPICS

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1. Subject, objective and structure of the thesis

Today, the study of discourse markers is a popular field of study. Representatives of the discourse marker tradition (e.g. Deborah Schiffrin, Bruce Fraser) started to work in this area of linguistics since the end of the 20th century. Numerous monographs, articles and dissertations have been written on this spearhead discipline (Hansen 2006: 29, Furkó 2011: 37) in recent decades. I find this field interesting because the research on discourse markers raises theoretical questions that have long been of interest to linguists. For example, the issue of the separation of semantics and pragmatics (Morris 1938, Bar-Hillel 1954, Gazdar 1979, Leech 1983). The study of markers is fragmented nowadays, and the domestic discourse marker literature currently lacks a complex tool, a model of meaning, that can fully address the multifunctionality and context-dependence of discourse markers (Furkó 2011).

- In my dissertation I am primarily concerned with the meaning of discourse markers. My primary aim is to complement the Natural Semantic Metalanguage (NSM) model with an analytical framework that addresses the problems of meaning of discourse markers. To this end, I also illustrate my own annotated meaning model.

My further goal is to demonstrate that the augmented NSM framework used in this dissertation helps separate the functions of markers. I investigate the roles of the elements in my own collection of corpus of children's and adult language discourse and in the MONYEK database, using language data from both age groups.

In my dissertation, I therefore analyse two typical roles of the three most common discourse markers. I will examine the functions of *hát* as a hesitant and general response marker, *izé* as a word substitute and as a filler in the audio materials of preschoolers, while the roles of *ugye* as an evidence marker and of waiting for reassurance and confirmation in a question will be analysed in the discourse of the interviewees. After a precise identification of the functions, I present other features related to the NSM model (e.g. contextual, structural) and add features (e.g. prosody, non-verbal cues) to the framework that may help reveal the relationships between meanings. After presenting other features closely related to the model, I will use the NSM "grammar" set to map the invariant semantic meanings of the elements and their specific appearances (Wierzbicka 1988), and I will also compare the feature pairs of markers in the meaning model, which will be complemented by a detailed textual analysis. Finally, I present machine learning experiments using prosody with quantified data in my dissertation, which aims to outline whether several algorithms can discriminate between the functions of discourse markers using prosodic features.

2. Initial research questions and hypotheses

Discourse markers have a variety of functions in speakers' language use, and their meanings vary from context to context. The research questions raised in my dissertation are: is there a constant semantic meaning encoded in discourse markers? Is there a contextually embedded meaning? Is there a certain shared meaning part between the elements? Are there structural features (e.g. position) that can be used to describe the different functions in discourse? Do the features described in the NSM model (e.g. prosody) demonstrably help identify the function of a marker?

The hypotheses of my research are:

- (1) I argue that each discourse marker has a certain sub-specific, invariant semantic meaning, which is present in the use of all markers as a shared meaning element and can be described by the NSM model, as well as its different functions, i.e. special cases, in the contexts it appears in.
- (2) I assume that there is a correlation between the roles of markers in discourse and other characteristics (contextual, structural, environmental) that may or may not help to identify the function of a marker.
- (3) I also assume that I can use the extended NSM model to create a meaning model that can be used to deal with the multifunctionality and context dependency of markers.

3. The relationship between the Natural Semantic Metalanguage model and discourse markers

The Natural Semantic Metalanguage (NSM) model was created by Anna Wierzbicka (1972). The basic idea of the model is that complex meanings can be described in terms of simpler elements, i.e. to give the meaning of a semantically complex word, a paraphrase is used which is composed of words that are simpler and easier to understand than the original. This method of analysis is called reductive paraphrase, while the product of the analysis is called explication. A reductive paraphrase can only contain simple words of the language. For English, a total of 65 primitives have been identified so far (Goddard-Wierzbicka 2014). Primitives have certain combinatorial properties due to the concepts they represent. If the mini-linguistic is based on a predicate, it has valence options, i.e. additional arguments

identify or complement aspects of the situation that are represented by the nature of the predicate. The method of analysing meanings assumes that each language has an irreducible "semantic core", which presupposes a linguistic structure, i.e. it consists of certain principles and expressions that govern the combination of lexical items, so that their semantic primitives and principles of combination can form a kind of mini-linguistics.

Moving on to discourse markers, the lexical semantic framework of Natural Semantic Metalanguage assumes a certain core meaning or invariant meaning (Travis 2006: 224) for markers, whose meaning elements carry the same meaning across contexts. Discourse markers are regarded as polysemantic elements (Fischer 2000, 2006, Travis 2006), since they present two or more meanings, each of which contains at least one meaning component, i.e. a specific meaning element, a semantic core. The communicative functions of the markers are thus made possible by the contextual meanings. The three discourse markers I have studied have also been found to have core reports. In his research, Schirm (2011: 195) formulates the constant meaning of the *hát* as an expression of uncertainty, which is also related to the intention to buy time and to hesitation. The core meaning of the *izé* marker is considered to be its word substitution function (Fabulya 2007), i.e. when some problem occurs on the way to the item found in the mental lexicon. There are two types: the word-finding and the word-substitution isis. In the case of the word-finding isis, the problem is that the target word is not reached at the moment, but the speaker can later retrieve the target word from his mental lexicon. The word replacement *izé*, on the other hand, completely lacks the word in the speaker's mental lexicon and therefore cannot be retrieved by the speaker. The constant semantic meaning of the marker *ugye* is to give an explanation (Abuczki 2015). In use, it is used to introduce an objection or an explanation, by which the speaker conveys an obvious content. Its use supports the content and arguments of the speaker's utterance.

Travis (2006) adds additional features to the NSM model (Wierzbicka 1988, Goddard 2000) for the study of discourse markers, namely: the environment in which the marker appears, the functions they perform, and the meaning(s) they carry. The environment of appearance refers to the structural position in which the marker is found. In my dissertation, this is the position at the beginning, middle or end of the turn construction unit. I also take into account the prosody of the elements, i.e. "the process variation of time, frequency and intensity" (Markó 2015: 18). I do not analyse the characteristics of the Travisian intonation contour, but rather the characteristics of the fundamental frequency, pause, duration and interval. In the context of frequency (Veit 1977), it is the pitch we

perceive. By pause (Bóna et al. 2018, Levelt 1989) we mean the interval between two content words (silent), or often between two silent pauses (filled). For duration (Kondacs-Kovács 2018), I used the segmentation boundaries defined by Praat's spectrogram, while for pitch (Bóna 2007) I used the ratio of the highest and lowest values of the fundamental pitch per speech segment. I also take into account the context of utterances, which can be said to appear in the context of human (social) action: they fit into a set of non-linguistic actions (activities and outcomes) that refer to or are adapted to the behaviour of other people (Tolcsvai Nagy 2001: 71-73). The context is complemented by communicative functions. In addition to all this, I also add non-verbal signs to the model, thus creating a unified model of meaning with additional features compared to the basic concept.

4. Characteristics of the methodology and corpora used in the thesis

In my dissertation, I conducted an empirical research, as I drew conclusions from "data collected by different empirical methods" (Fóris 2008: 49) using an existing theoretical framework. This research was also inductive, as I collected a large amount of data from which general conclusions can be drawn. My primary research was thus "based on direct data analysis and produced new results" (Károly 2002).

In my study, I identified discourse markers using expert annotation, often with the addition of multimodal features. As a check, I had a co-researcher review the results, then performed various statistical tests on them, and finally, I also carried out model specification to explore the meaning of a marker.

I tested the analytical model I developed on two children's language corpora of my own collection of semi-institutional material. It is based on child and adult language data. The first corpus (Kondacs 2017) contains 148 recordings with 57 different speakers. The total duration of the corpus is 14 hours 48 minutes. The average length of recordings is 6 minutes. The speakers are from one small group, two medium groups and two large groups of the Kurca-parti Kindergarten in Szegvár. Their average age is 5.4 years. Method used: storytelling with pictures and puppet stories.

The second corpus (Kondacs 2018) contains 167 recordings with 167 different speakers. The total duration of all recordings is 18 hours 26 minutes. The average length of the recordings is 6 minutes 58 seconds. The recordings were made in the Kurca-parti Kindergarten in Szegvár, the Károlyi and Móricz Kindergarten in Mindszent and the Kalimero Kindergarten in Palic. The average age of the kindergarten children is 5.8 years.

The method used was storytelling with the help of puppet stories. This method is suitable for eliciting natural conversations because it makes the children talk even more. They imitated the characters or improvised an event based on what they had seen, thus producing a greater amount of spontaneous discourse.

5. The results of the thesis

Summary of hypotheses based on the studies carried out:

- (1) I argued that each discourse marker has a certain sub-specific, constant semantic meaning, which is present in the use of all markers as a common meaning element and can be described by the NSM model, as well as its different functions, i.e. special cases, in the contexts it appears in.

This claim was supported by the constant reports in the literature, as well as by feature studies in the corpus. Indeed, the most frequent roles for all three markers were those considered as permanent reports. In identifying the features, I used both a replacement test and a minimal pair test. In the case of *hát*, uncertainty, hesitation, and time-winning were considered to be permanent semantic meanings (Schirm 2011: 195), in the case of *izé*, the word substitution function was found to be (Fabulya 2007), while in the case of *ugye*, the explanatory use (Abuczki 2015) was considered to be.

In all three cases, I have recorded the constant reports using the NSM model set:

-For the *hát* this is:

I don't know now what I want to say about something/someone.

-It is a subspecified, invariant meaning of *izé*:

I don't know now what I want to say about something/someone, but I want to find it.

-It has an invariant meaning of *ugye*:

I know now what I want to say about something/someone.

The other roles that appeared in the contexts and were most common in my corpus were:

- For the *hát* marker:

Hezitating *hát*:

[Now I want a little time.] – specific meaning

General response marker *hát*:

[I know what someone wants to hear.] – specific meaning

- For the *izé* element:

Filler *izé*:

[Now I want a little time to find it.] – specific meaning

Word search *izé*:

[I can find it.] – specific – wordsearch

[I can't find it.] – specific – substitute

- In the case of the *ugye* marker:

Evidence marker *ugye*:

[I think you know it.] – specific meaning

Positive response and/or reassuring, affirming *ugye*:

[You can think it like me.] – specific meaning

- (2) I have assumed that there is a correlation between the roles of markers in discourses and other (contextual, structural) features that may or may not help to identify the function of a marker.

In the context of the hesitant *hát*, the length of the duration and the height of the fundamental frequency maximum in the prosody showed differences with the characteristic of filled and silent pauses. For the turn position, the general response marker *hát* always occurred at the beginning of a turn construction unit in the corpora, whereas the hesitant one was mostly present at the beginning and in some cases also inside. For the general answer marker role, the context is characterised by the fact that it appears mainly in question-answer dialogues at the beginning of an answer, while the hesitant can also be observed in shorter descriptions, for example when presenting the content of a fairy tale.

In terms of prosody, the filler word *izé* has a longer duration, lower fundamental frequency, but higher fundamental frequency maximum and narrower pitch than the word substitute *izé*. Pauses are observed before and after the marker in the turn construction unit when both functions are examined. With regard to position, it is noticeable that the filler word *izé* appears inside or at the beginning of the turn construction unit with discourse marker collocations (*mm, öö*), while the word substitutes appear only inside the construction unit. From a contextual point of view, both features typically appear in the context of a question-answer sequence pair at the time of answering.

In the case of the prosody of the evidence marker *ugye*, the duration is shorter, the fundamental frequency and the fundamental frequency maximum are lower and the pitch interval is narrower than for the function waiting for confirmation in the question. With respect to context, the evidence function always occurred in statements, while the confirmation function always occurred in questions. In terms of their position in the turn, the evidence marker always appears in the inner position, while the questioner typically appears at the end. An interesting characteristic of body language is that after the use of questioning, young children often use when answering, without giving a verbal answer or just adding to it to confirm their positive position with this body language sign. After conducting statistical analysis, it can be said that significant differences are found for the two functions of the base frequency maximum, duration and pitch.

The teaching experiment of the computational linguistics research carried out in this dissertation highlights that there is a quantifiable feature that helps to identify a feature for a machine. Thus, the tests run with the assignment of prosodic values show a very high rate of evidence that a feature can be identified by a machine learning program.

- (3) I also hypothesized that I can use the extended NSM model to create a meaning model that can be used to deal with the multi-functionality and context dependency of markers.

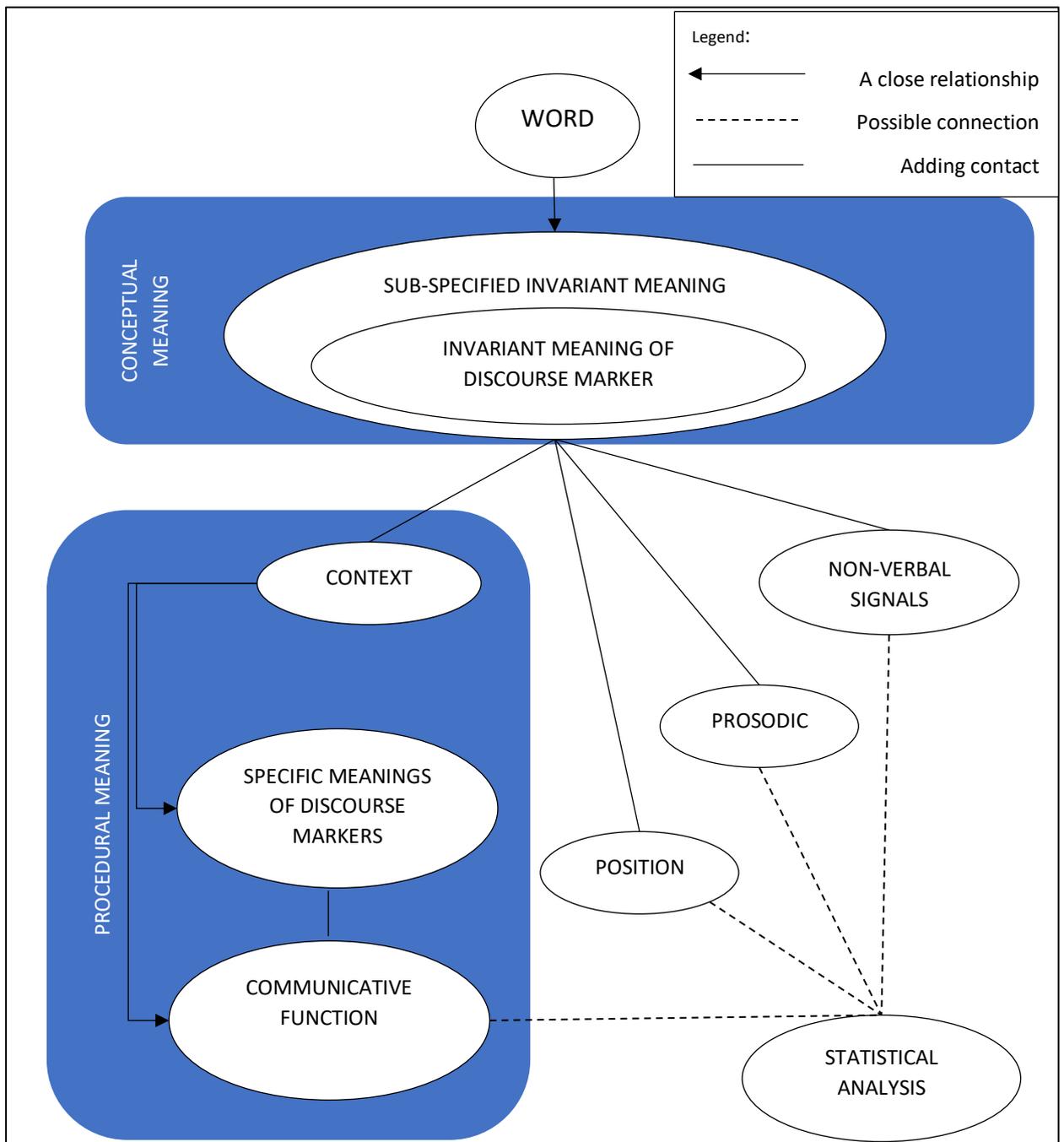


Figure 1. Writing the meaning of a discourse marker in the extended NSM meaning model.

The basic idea of the NSM model is therefore to describe an invariant semantic meaning using semantic primitives and/or semantic molecules. This inscription is fulfilled for a discourse marker under the point of the invariant meaning of the discourse marker in the figure. This is accompanied by other added elements such as context, position, prosody and nonverbal cues. These points can be filled with information that is specific to a particular marker. If we do not have enough data for one of them, or if it is not observable, it is not

filled in. In the case of context, we can describe specific situations, e.g. whether the marker is associated with a question-answer sequence pair, or whether it is associated with an explanation. Context is also related to the communicative function of markers, which can be linked to the specific meanings of the discourse marker, i.e. its role in the context. We can specify the position of the positional turn or turn-unit within the positional unit: with values at the beginning, inside or at the end. When examining prosody, we can use characteristics such as fundamental frequency, duration, pitch or even the presence or absence of pauses in the marker's environment. For non-verbal cues, if our corpus is multimodal, we can observe extra-linguistic cues associated with the markers, e.g. head scratching, nodding. If we have a quantified, sufficient amount of data, we can perform comparative statistical tests related to the properties of markers. In my research, enough data on *hát, ugye* case prosody provided enough for this type of study. Together, the properties prescribed in the model form a formal schema that can be used to prescribe a complex analysis of a discourse marker.

The legend contains certain ratios. These are close, possible and additive. By close relationship, I mean when the elements of the figure are closely related to each other, they cannot exist without each other, e.g. the specific meanings of the discourse marker and their associated functions appear in the context. In the case of a possible relationship, the relationship between the elements is not necessarily established. Statistical analysis in my dissertation was only feasible for the features with quantified data, it can be done for the others if sufficient data are available. And the additive relationship denotes an additive relationship, since other characteristics are added to the reports in this theoretical framework.

I would also like to highlight the conceptual¹ and procedural² meanings of the meaning model. This model constructs a procedural meaning element from conceptual meaning elements, since in giving a constant meaning, conceptual meaning elements are used to give the meaning of a discourse marker with a procedural meaning that is created in context. In the following, I outline the application of the presented meaning model to markers.

¹ Elements "whose coded meaning contributes conceptually to the propositions or higher level explicatures expressed by the manifestation" (Bibok 2017: 74)

² They are elements "whose coded meaning contains a constraint or instruction on the pragmatic inference stage of the interpretation of the utterance" (Bibok 2017: 73).

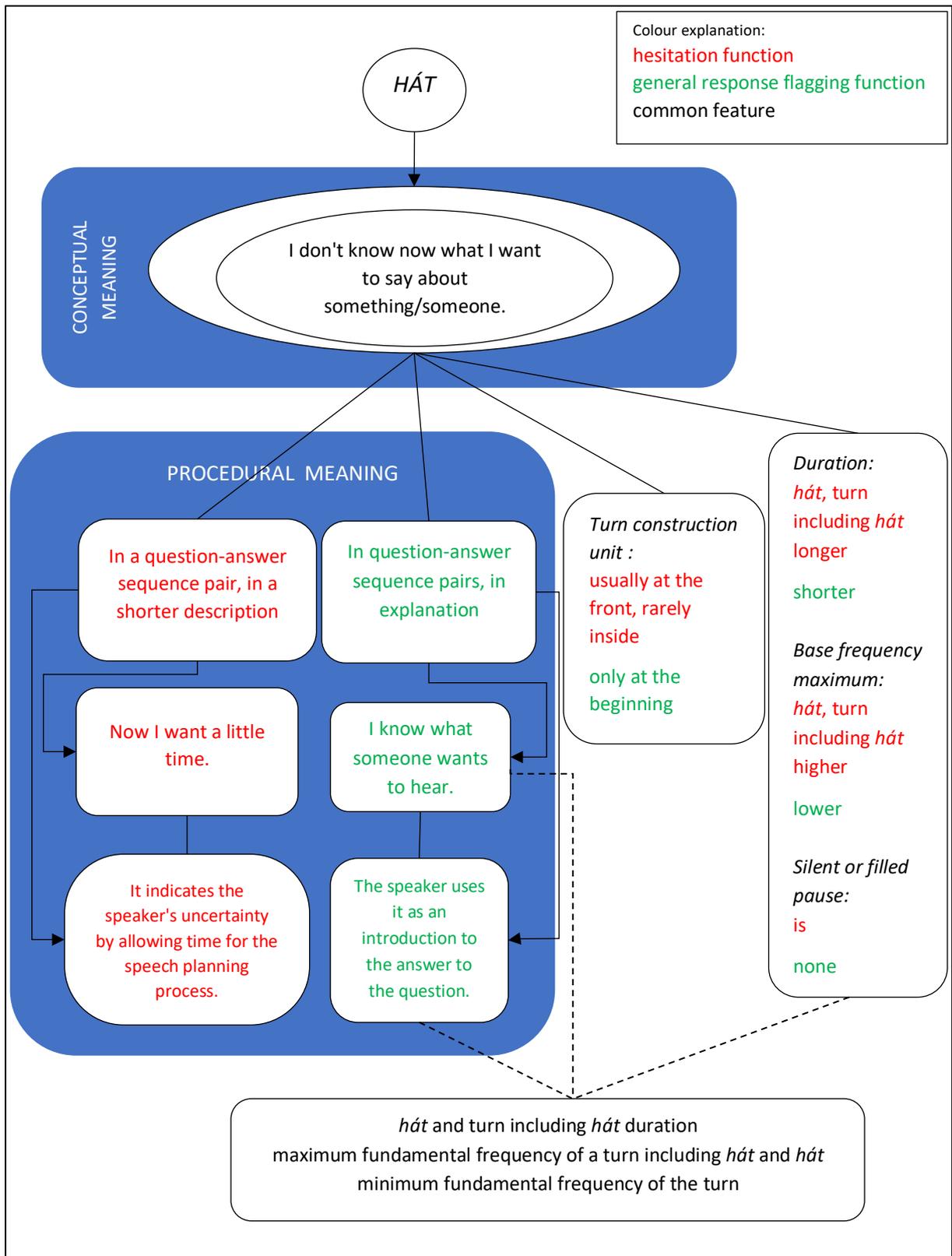


Figure 2. Mapping the meaning of the *hát* marker in a meaning model.

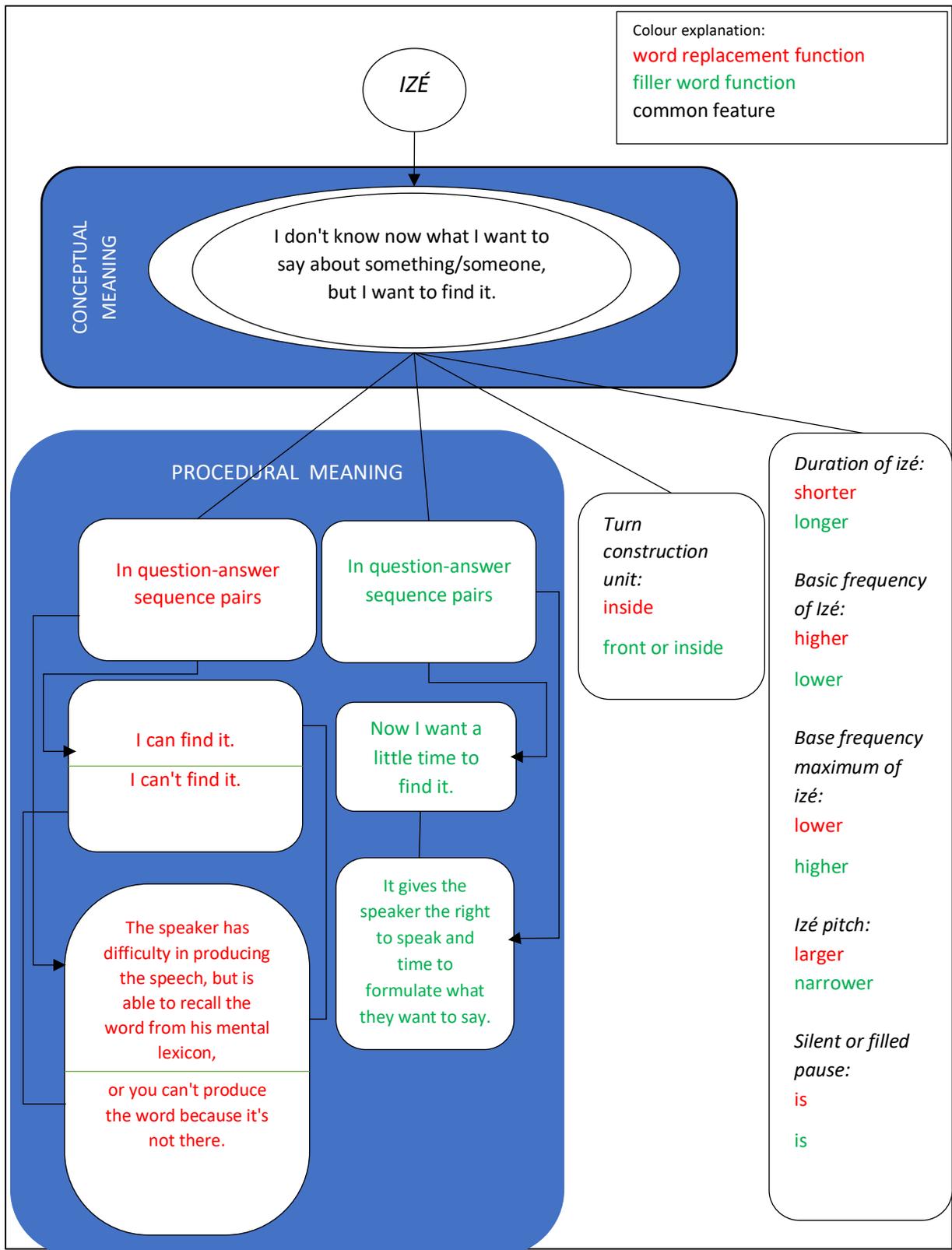


Figure 3. Writing the meaning of the marker *izé* in a meaning model.

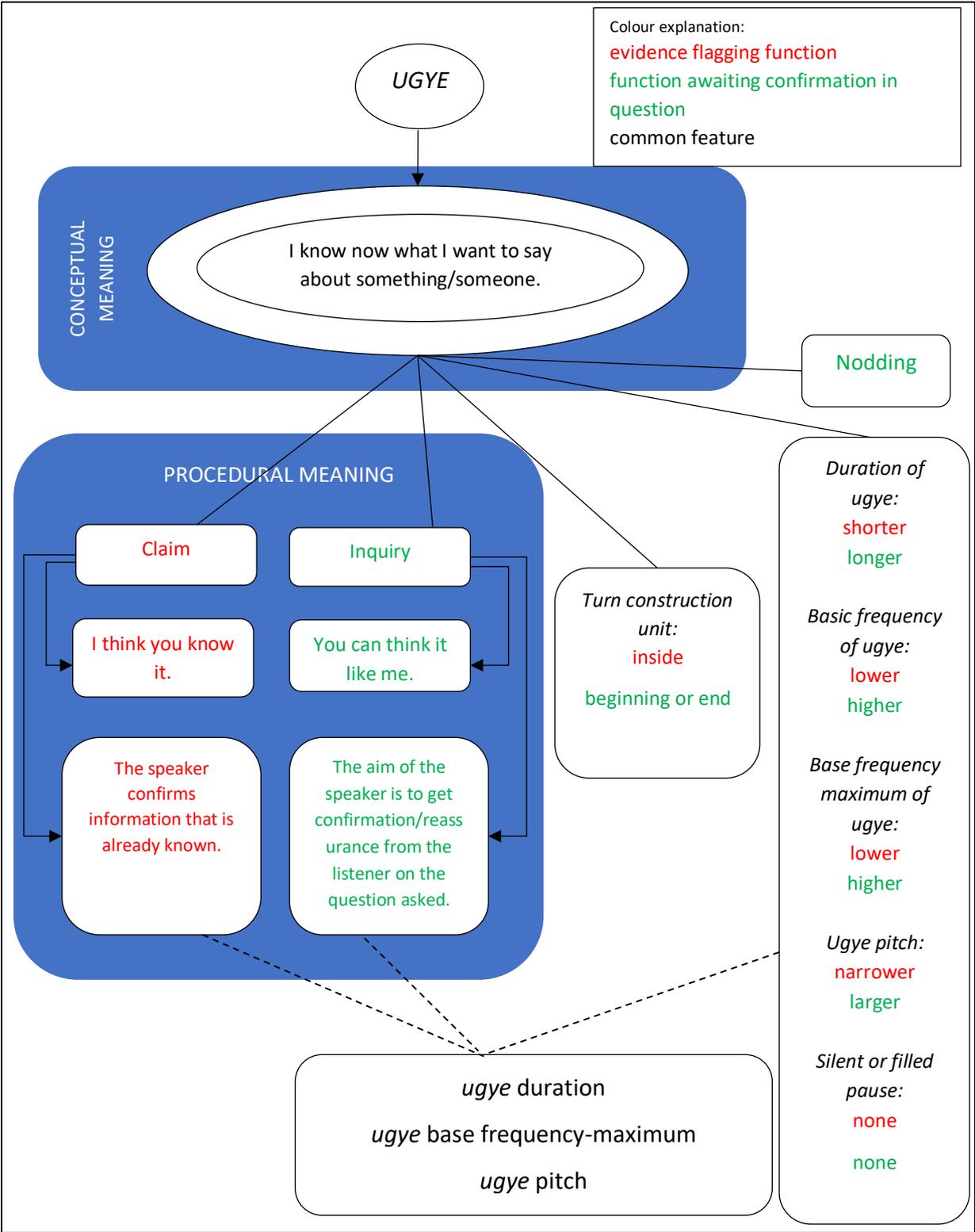


Figure 4. Writing the meaning of the marker *ugye* in a meaning model.

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