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Multimodal languaging: Reification profiles in language and gesture

Original study

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Abstract: The paper explores multimodal languaging of objects and words as an encultured practice. We report the results of the experiment where the participants explained the difference between close synonyms, enacting them as either objects or words in speech and gesture. The basic claim of the study is that speech and gesture as second-order language reflect the way they were acquired in developing the knowledge of objects and words in reification image-schemas. We found that i) object reification occurs twice more often; ii) enacting objects and words is affected by the same image-schemas expressed in speech and gesture types, still there are differences in their distribution in speech. This observation evidences that both gesture-specific and language-specific notions are part of languaging since the speech and gesture patterns present the way of packaging the shared idea of objects of reference.

Keywords: Multimodal languaging; reification; word; object; image-schema; gesture type.

INTRODUCTION

In real-life communication people activate their multimodal resources, for instance speech and gesture, to enact the objects of reference. The distribution of multimodal resources in adults is affected by the multimodal languaging patterns earlier developed by them and entrenched in their minds. When adults enact the objects of reference multimodally, their speech and gesture combinations manifest these languaging patterns expressed in reification image-schemas. Consequently, reification image-schemas serve to cast light on the cultural practices of dealing with objects of different kinds.

Such a view on reification is not a position favored in the literature on multimodal communication. By describing the role of gesture in the way that "gestures appear to reflect contents in the mind of the speaker, often 'under the radar' and frequently in a way that reflects an imagistic version of what is being spoken" (Kelly et al. 2017, 3), the studies represent in fact a different point of view. This stance considers multimodal behavior to be a *reflection* of what goes on in the speaker's mind rather than of what goes on as *a second-order activity or the activity which reflects the earlier developed languaging patterns of multimodal behavior*. Still, in multimodal studies it is assumed that "speech and gesture are co-expressive and opposed semiotically. Each has its own means of packaging the shared idea […]" (McNeill 2017, 84). In this case, it is the

shared view of the objects of reference which according to McNeill, gives rise to growth points, or "the smallest package of gesture-speech unity" (ibid., 80). Analogically, enactivist approaches prefer to speak of "a generative mechanism that gives rise to the dynamics of interactions and the coordination of actions" (Maturana 1988, 45). Following S. Cowley, we assume that "languaging ascribes understanding to lived cultural experience" (Cowley 2019, 486) and this capacity for *epistemic action* as Cowley and Kuhle (2019) term it after Kirsh and Maglio (1994) unfolds through communicating with objects of different kinds including words conceptualized as objects of refernce. The developed skills appear in the multimodal behavior of adults in the speech and gesture distribution patterns.

Therefore, we believe that a shared (in language and kinesics) view of objects of reference as a part of languaging will contribute to adults' multimodal behavior in such a way that both language-specific and gesture-specific notions (earlier developed as a cultural practice) will appear in speech and gesture distribution. The view that developing a language-specific notion is a part of languaging is consistent with the idea expressed in Cowley and Kuhle (2020) who argue that "languaging as coordinated activity in which (physical) wordings play a part" (ibid.) and in later Thibault (2019) who similarly considers first-order languaging "as a whole-body sense-saturated activity in which wordings (verbal pattern) play a part" (ibid., 50). However, it is not clear to what extent "wordings" as language-specific notions and gesture-specific notions will affect the choice of second-order language, here termed gesture and speech since we will report the findings related to oral speech. Additionally, it is not clear whether different language-specific and gesture-specific notions affect the choice of second-order language when people speak about different objects of reference. What deserves particular attention is how these notions co-occur when people speak about linguistic objects (words) and whether multimodal languaging demarcates learning to communicate with objects and learning to communicate with words as objects of reference. To answer these questions, we explore the reification image-schemas in language and gesture which are employed when adults enact objects and words in speech and gesture. If we observe significant differences, it might mean that people develop the multimodal knowledge of both non-linguistic and linguistic objects differently, which further means that we learn how to multimodally construe language and gesture as part of languaging. To verify this hypothesis, we explore two types of objects of reference, objects namely and words, via the reification image-schemas in language and gestures employed in each case.

Let us consider two examples in Figure 1 (a-b).

In both cases, the speakers enact the referent 'darkness' through its reification or its construal as an object of reference in speech and gesture. In Figure 1a the speaker enacts it as a word. She foregrounds its literal meaning in the context, which definitely stimulates the emergence of a word as a referent. To develop it, she appeals to its construal in terms of the word category (literalness / figurativity) in speech and in terms of additionally representing

1(a)

а темнота больше используется как ***что-то буквальное*** ('but darkness is more frequently used literally')

1(b)

темнота / мне кажется / ну это просто вот / свет выключенный в комнате ('darkness / it seems to me / it is simply / the light which is switched off in the room')

this discourse component (here, the literal use of a word) in the pragmatic gesture, the gesture emphasizing the discourse component буквальное (literal). In Figure 1b the speaker enacts 'darkness' via the situation and its components (light and its location) in speech and via embodying darkness (as if it were an object held in the hands) in the representational gesture. Therefore, in this case, the speaker enacts it as an object (a thing). The multimodal resources, here speech and gesture, allow to enact the referent 'darkness' in two different ways.

These ways we will term as two reification strategies, Word reification and Object reification which appear in the multimodal behavior of the communicant. Based on the experiment, which allowed to elicit speech and gesture patterns of the speakers who communicated the differences between close synonyms like *darkness* and *obscurity*, *roar* and *howl*, *line* and *lineament*, *duty* and *obligation*, *burden* and *load*, and the similar, we expect to find proof that Word reification and Object reification strategies will employ different patterns of languaging linguistic and non-linguistic objects in language and kinesics (here in hand gestures). What makes us think so is the secondary character of a word in relation to the object, its higher degree of abstractness, which might in all probability be learned differently and therefore appear in different languaging image-schemas. Still, this assumption needs to be tested. Additionally, guided by these analyses, we will emphasize that enacting both objects and words is rooted in multimodal languaging.

Beforehand, we will discuss, how the theory of languaging contributes to reification theory, and develop the notion of multimodal languaging with the view of reification in language and kinesics.

REIFICATION AND MULTIMODAL LANGUAGING

As known, reification studies have a long history in linguistic (referential) semantics (which we will not consider here since it bears little relevance to the present point of discussion), and since recently in cognitive and multimodal semantics. In cognitive semantics, reification is commonly treated as the objectification of an abstract notion (Langacker 1991; Sinha 1999; Iriskhanova 2015), for instance, the objectification which stems from appealing to the properties the object manifests of the activities or processes it is involved in. It is often explored via the cognitive mechanism of profiling applicable to the construal in language (Langacker 1991) which helps range the objects of reference on a "reification scale" (Iriskhanova 2005). Iriskhanova (2005) claims that the object of reference may be construed as an object[1], as an attribute or as a process; still, the reification degree is different depending on whether it profiles a collective (*the rich*) or a single object (*a youth*), an event (*darkening*) or a state (*darkness*), an object attribute (*whiteness*) or its evaluation (*beauty*). These linguistic examples show that even in case the object of reference is construed via two categories of an object and an attribute, its degree of reification may vary. In multimodal semantics exploring reification which further is manifested in speech and gesture, attention is given to "those gestures that refer to objects and represent their physical and/or kinesic properties in terms of their semantic relation with basic grammatical notions" (Kok, Cienki 2016, 76). The gestures that construe some referent as an object (or rather a thing) evoke a domain of a noun, if they profile some property of a referent, they evoke the domain of an adjective, if they profile a motion, they can be attributed to a verb. It is notable that some gestures are thought of as performing the reification function better; for instance, "multimodal narrative discourse analysis shows that additional reification is provided by gestures – especially representational and deictic" (Iriskhanova 2005, 64).

Overall, reificatory semantics employs either objectivistic (referential semantics) or subjectivistic frameworks of reification, with cognitive linguistics and multimodal semantics developing the subjective view since profiling is a mechanism of subjectivation. Still, these two approaches to reification are somewhat opposed if we consider *reification as an activity which is shared in communication*. As Sinha (1999) puts it, there are two dogmas of reificatory semantics (he criticizes both of them), the first is that "Meanings are immaterial objects […]", and the second is that "Meanings are decomposable into (immaterial) atomic objects" (Sinha 1999, 224). In his view, the two variants of reificatory semantics, Objectivism and Subjectivism, are erroneous since reification is intersubjective. He claims that "reference is an act accomplished by speakers in an intersubjective discourse situation" (ibid., 238).

Carrying this point further, we may presume that *reification is multimodally shared and developed in cultural practices of languaging the objects of reference*. The reification patterns are further manifested in multimodal discourse, for instance in speech and gesture as second-order language. This idea of languaging referents is nothing new. Languaging as elaborated by Maturana (1970) and revived in the works of Love (2004), Cowley (2011), and Thibault (2011) is viewed as "a cover term for activities involving language: speaking, hearing (listening), writing, reading, 'signing' and interpreting sign language" (Love 2017, 115). Since its nature is clearly activity bound, it is expected to appear in multimodal format as stimulating enacting objects of reference in speech and gesture. Still, identifying the ways how language and kinesics *co-occur* in multimodal languaging of different objects of reference is a challenging idea. Presumably, there exist steady language-kinesics patterns which consistently initiate the appearance of the objects of reference of a specific

1 In this work we will consistently present the object of reference or referent (which may be no object at all) and the object as two different classes.

type in speech and gesture. By language-kinesics patterns here we will mean the image-schemas which may be viewed as a form of first-order languaging. Image-schemas are the organizing structures in human cognition which emerge from our interaction with the world (Lakoff 1987; Johnson 1998), for instance, CONTAINER or PART-WHOLE schema which may be used in enacting referents.

The best way to see how the epistemic action of communicating with objects is unfolded into multimodal languaging is to see how it affects the multimodal behavior of a person enacting the objects of reference employing various modalities, gaze, speech, mimics, and gestures. There are studies exploring the input of different modalities into referent enactment. For instance, in Rączaszek-Leonardi et al. (2018) an integrated ontological and developmental view onto the role of gaze, language and gesture as contributing to the conceptualization of actions and processes in children is presented, where conceptualization "emerges in co-action in a particular physical and cultural environment" (Rączaszek-Leonardi et al. 2018, 40). In line with other studies, for instance, see (Rader, Zukow-Goldring 2010), the authors prove that providing language and action simultaneously is an effective way to convey the meaning of new words to infants and young children. Multimodal languaging then seems an "ongoing dynamical multimodal context of significant co-actions" (Rączaszek-Leonardi et al. 2018, 65), and the authors claim that multimodal actions (for instance, mother's intonation, gaze paths) are grounded in iconic and indexical information forms which give rise to abstractness and symbolic reference. Another study (Jensen 2014) develops an ontological view onto enacting emotions where different modalities are engaged, gestures, facial displays, posture, and language are considered as generating affordances for communication. In line with Du Bois (2007) and Goodwin et al. (2012), Jensen addresses the dimensions of stance taking (stance triangle) which are evaluating the topic discussed, positioning ourselves with respect to this topic and other interlocutors, and aligning or dis-aligning with our interlocutors (Jensen 2014, 7). As part of the analysis, Jensen describes different embodied actions and inter-body dynamics with a view of these three stances.

However, these studies do not pursue to observe systemic multimodal languaging effects in adults who are enacting different objects in multimodal behavior. Undoubtedly, in this case, we do not take a developmental stance on multimodal languaging since we cannot identify the developmental stages of its formation. Still, viewed from the ontological perspective, multimodal languaging appears a systemic epistemic construct capable of providing an explanation of why these or those speech and gesture combinations are used in discourse.

REIFICATION IN MULTIMODAL LANGUAGING: EXPERIMENT DESIGN

To explore reification in multimodal languaging, we will observe the results of the experiment where the participants were to explain the difference between close synonyms like *roar* and *howl*, *line* and *lineament*, *duty* and *obligation*, *burden* and *load*, and the similar (10 pairs of synonyms). Meanwhile, they adopted two distinct strategies of referent reification, enacting them as objects and enacting them as words (in both cases objects and words are the objects of reference). For instance, in *более ну… линия тоже можно использовать в переносном значении* ('more likely… line can also be used figuratively'), the speaker is conceptualizing line as a word since he reports the possibility of its figurative use; this strategy we will name Word reification. In *долг это что-то более моральное / то есть долг там кого-то защитить* ('duty is something which relates to morality / that is, for example, a duty to protect someone') another strategy is likely to be chosen, it is conceptualizing duty through its properties and actions with as object; this strategy we will refer to as Object reification.

The research question was whether the multimodal image-schemas which underlie the use of speech and gesture in Word and Object reification will display significant differences and whether these differences are mostly attributed to language or kinesics in multimodal languaging.

The experiment participants were 19 students of Moscow State Linguistic University aged 18–22 who were recorded and filmed during the interviews with 4 interlocutors. The total duration of the interviews was 2 hours 38 minutes. The speakers' responses and gestural behavior were then annotated by the interlocutors who identified the reification strategies they adopted. The data were then subjected to statistical analyses to reveal the activity (frequency) of reification strategies and the co-occurrence of image-schemas in language and gesture types. The four interlocutors decided on the strategy. In most cases it was a unanimous decision; in the cases when this decision was hampered by the presence of both possible strategies, we marked them as displaying both. In cases the strategy was unclear we did not mark it. The linguistic markers of the reification strategies are the lexical items displaying the properties of a referent, and the activities and processes it is involved in. In this study, we will present a fragment of the data containing 70 trials of the speakers in explaining the difference between the synonyms. The following extract may serve to exemplify how referent enactment proceeds in language.

1311 тьма.. ('obscurity')
1312 вот ('there')
1313 но… как бы да ты можешь если ты… какой-нибудь писатель ('but… well yes you can if you are… some writer')
1314 ты можешь сказать что… ('you can say that')

1315 там я не знаю комната погрузилась во тьму.. ('there I don't know the room is immersed into obscurity')
1316 когда вырубили свет ('when the light was switched off')
1317 вот ('there')
1318 но тьма больше используется как что-то абстрактное .. ('but obscurity is more used as something abstract')
1319 но может быть использовано буквально ('but can be used literally')
1320 а темнота больше используется как что-то буквальное ('and darkness is more used as something literal')
1321 то есть просто констатация факта что темно ('that is just to state the fact that it is dark')
1322 ну вот также… можно… ('but there also… possible…')
1323 это можно говорить про что-то абстрактное.. ('this can be used to speak about something abstract')
1324 это будет не так красиво ('this will not be so beautiful')
1325 тьма кайфовее звучит ('obscurity sounds cooler')

In this extract, the speaker reported on the difference between obscurity and darkness. As seen, her report was annotated in speech units (clauses, sometimes incorporating parentheses like *я не знаю* with a clear discourse pragmatic function) and some of these units exemplify the cases of referent enactment. For instance, in (1315) Word reification strategy is clearly present since this unit is preceded with the identification of how someone can say this. The same occurs in (1318, 1319, 1320, 1323, 1325) which themselves contain the words (*used literally, speak, sound*) allowing to relate the phrases to the domain of language use. The clauses which follow (1316, 1321, 1324), however, do not contain any clear markers of a reification strategy. In these cases, we considered them as developing the ideas of the main clauses; therefore, they were also annotated as manifesting Word reification strategy.

The next extract exemplifies the Object reification strategy.

946 долг э-э… ('obligation er…')
947 долг может быть и денежный и там… ('obligation can be with money and there')
948 перед родиной… х-х ('to the motherland… hm')
949 а обязанность… ну например обязанность там… (but duty… well for example the duty there')
950 ходить каждый день в университет ('to go to the university every day')
960 ха-ха ('ha-ha')

Here the speaker explains the difference between obligation and duty. To enact both of them she appeals to object construal presenting examples of the objects of such a type, *money obligation* in (947), *to the motherland* in (948), or the way you perform this referent in *to go to the university* in (950). It may be seen that not all clauses contain the manifestations of reification strategies. In the 1325 clauses that we submitted to the analysis, there were 230 and 419 instances of Word reification and Object reification, correspondingly. These results are demonstrative enough; however, we will discuss them at a later moment.

To explore the language-specific and gesture-specific notions as components of multimodal languaging, we annotated the recordings identifying the image-schemas and gesture types, which finally allowed to model the *reification profiles* or the distributions of image-schemas and gestures describing two reification strategies. The procedure adopted and the results obtained will be presented in the forthcoming sections.

REIFICATION PROFILES IN LANGUAGE

The skeletal cognitive model of reification in language which we adopt in this work is described in detail in the seminal work of J. Pustejovsky (1995) as part of his typology of referent semantic roles explored through the qualia structure of lexical items. He distinguishes four types of referent construal operations or their "ways of seeing (WoS)", Part-whole, Kind, Functional, Life-history, which allow to explore the referents in terms of their complexity, referential integrity, agentivity, etc (Pustejovsky 1995). Built within the model of event structure in his theory of generative lexicon, the qualia structure specifies four aspects in referent construal: "the relation between it and its constituent parts, that which distinguishes it within a larger domain, its purpose and function, whatever brings it about" (Pustejovsky 2005, 38). He then calls these referent roles constitutive, formal, telic, agentive, respectively. Pustejovsky illustrates the telic role of the noun *book* if it is accompanied by the predicate *read*; the agentive role of the same noun is found when it is accompanied by the predicate *write* (ibid., 39).

In his theory of event structure, Pustejovsky explores these semantic roles only as part of syntax; therefore, he does not produce a detailed account of the roles in language on the whole. In this study, we will take these roles further and apply them to explore the reification profiles in referent languaging. Following Pustejovsky, we expect that objects and words have the same "ways of seeing" or in our case, the ways of enacting and perceiving, and consequently will be enacted in terms of Part-whole, Kind, Functional, Life-history qualia. For instance, the following samples exemplify the Kind role of an object in *мне кажется долг это пообширнее / посильнее помощнее* ('it seems to me that duty is larger / stronger more powerful') and of a word as object in *и конечно же черта тоже в смысле математическом* ('surely a line is also as a mathematical sense'). In the first example duty is viewed as something large, strong and powerful (in contrast with something) and in the second example line is viewed as something which has a "mathematical sense";

therefore, they manifest (being the "kinds" of) the domains of Power (Strength) and Mathematics. Functional qualia of both objects and words may be demonstrated in *ну ноша это то что человек таскает на себе* ('er a burden is something a man carries on him') and in *ерунда больше как-то используется в бытовом варианте* ('rubbish is more often used in spoken language'). In the first case, the function of the object is manifested through its being moved in a specific way (carried presumably on his back, not in his hands); in the second case, the function of a word is presented via its use.

These and other examples which we obtained in the experiment allow to predict that there might be significant differences in the way people develop the knowledge of objects and words in languaging them. Although reification will be observed in both cases and it will employ the same Part-whole, Kind, Functional, Life-history qualia, they will use different image-schemas. When languaging referents, we may construe them applying PATH and CONTAINER, FORCE, PROCESS, CIRCLE, LINK, COLLECTION, SURFACE and other image-schemas presented in cognitive linguistic studies, for instance, see (Gibbs, Colston 1995; Cienki 1997; Grady 1997; Peña 1999). In the work on multimodal enactment which we addressed above (Rączaszek-Leonardi et al. 2018), the authors claimed that in the ontological perspective enactment is mostly based on pragmatic frames rather than image schemas. Still, developing a cognitive view we consider that pragmaticity is rooted in semantic structures although it is not restricted to them. Therefore, in this study we appeal to image-schemas as the cognitive structures which are epistemically developed and manifested in discourse, and in their turn lay foundation for further pragmatic modulations.

In Santibanez (2002) several hierarchies of OBJECT image-schemas are presented as adapted from Clausner, Croft (1999), Peña (1999), and Deane (1992), as well as inferred based on his own data. The OBJECT schema taxonomy includes PART-WHOLE, MASS-COUNT, LINK, COLLECTION, CENTRE-PERIPHERY schemas (following Deane (1992)), still, its components may be further specified. For instance, PART-WHOLE schema includes CENTRE-PERIPHERY, MATCHING, LINK, MERGING, COLLECTION (following Peña (1999)). We may observe at this point, that the number and the taxonomy of image-schemas are largely dependent on the data that is considered and the internal logic of the taxonomy.

In our study, this logic will be guided by the four referent ways of seeing as applicable to both word and object languaging. These ways of seeing we will treat as four higher-level image-schemas, PART-WHOLE, KIND, FUNCTION and LIFE-HISTORY. In their turn, they are manifested via lower-level image-schemas which form four hierarchies. If we address the examples above, we may see that the first example of Kind way of seeing (KIND schema) in *мне кажется долг это пообширнее / посильнее помощнее* ('it seems to me that duty is larger / stronger more powerful') represents COMPARISON image-schema since it employs the comparative forms of adjectives clearly stating the referent properties expressed in a higher degree in the object under consideration. In the second example in и конечно же черта тоже в смысле математическом ('surely a line is also as a mathematical sense'), the image-schema is of a FOREGROUND type since it puts forward a specific feature this word manifests. The Functional way of seeing (FUNCTION schema) in the examples above in *ну ноша это то что человек таскает на себе* ('er a burden is something a man carries on him') and in *ерунда больше как-то используется в бытовом варианте* ('rubbish is more often used in spoken language') exemplifies LOMOTION (in the first case) and USE (in the second case) image-schemas. Noticeable, that these image-schemas may present both words and objects. For instance, USE image-schema may be found with both, in Object reification in *битва а-а использовано оружие* ('battle er some weapon is applied) and in Word reification in *никогда не скажу слово мертвец* ('I will never say the word the dead'). We should also add that a common case of construal is grounded on several image-schemas in Word or Object reification. Considering the following example, in *усердие это* advanced *старание* ('effort is advanced (used in English) diligence') we see a peculiar case of using both Russian and English languages in presenting a comment, where two higher-level image-schemas are used, KIND in Object reification (and its lower-level schema COMPARISON) since effort is compared to diligence, and PART-WHOLE in Word reification (and its lower-level schema CONTAINER) since it is viewed via a word combination.

To develop the hierarchy of lower-level image-schemas which help construe four higher-level image-schemas of Word and Object reification, that is PART-WHOLE, KIND, FUNCTION and LIFE-HISTORY, we addressed the participants' reports in 1325 speech units. Below (Figure 2), the hierarchy developed to analyze the units is shown. The hierarchy presents the reification image-schemas which are higher-level schemas of Word and Object construal as objects, and lower-level schemas. We cannot state that the typology presented is complete since it was developed on our data only, still, it allowed to analyze all the cases found.

With this hierarchy in view, we will describe our findings in Word and Object reification and also identify the activity (frequency) of the higher-level image-schemas found in the speech units.

First, we will address the image-schemas of Word reification. Noticeable, that Word reification schemas are adopted twice less frequently than Object schemas (230 and 419 instances, as we noted above). We observe that more frequently the participants enacted words via KIND and FUNCTION image-schemas (80 and 75 instances). For instance, in огонь это более широкое понятие наверное ('fire is a more complex notion probably') and in *а.. битва и схватка / х… синонимы* ('er… battle and fight / er… synonyms') particular characteristics

PART-WHOLE	KIND	FUNCTION	LIFE-HISTORY
FRAGMENTATION CONTAINER	FOREGROUND COMPARISON ASSESSMENT	USE POSSESSION LOCOMOTION SPATIAL MOTION FORCE COMPREHENSION FEELING	CHANGE-OF-STATE CREATION DESTRUCTION

Figure 2. Reification image-schemas

of a word as a lexical unit are manifested, here its notional meaning and synonymic relations between two lexemes. They allow to view a word as a type or a kind of language structure, thus being examples of KIND image-schema. In *чепуха это для тех кто эр не произносит* ('nonsense it is for those who cannot pronounce r') or in *ну потому что страх используют наверное / в более критических ситуациях* ('er… because fear is used probably / in an emergency') or in *м-мертвец / наверное / можно использовать в каком-то образном понятии* (the dead / probably / can be used as a figurative notion) we view the sub-schemas LOCOMOTION (someone pronounces something) and USE (fear as a word is used and the word is used figuratively) which are the manifestations of FUNCTION image-schema. PART-WHOLE image-schema is one of the frequently appearing schemas across the data (62 instances). Since the Word reification in terms of meronymy relations presupposes two ways of construal, via sub-categories and via hyper-categories, it refers to the idea of phonological and morphological construal as sub-categorial shift (an instance of FRAGMENTATION image-schema [Santibanez 2002]), and lexico-phaseological and syntactic construal as hyper-categorial shift (an instance of CONTAINER image-schema (Lakoff 1987; Johnson 1998) demonstrating a case of schematic enrichment which is a conceptual interaction mechanism allowing to build some schemas as the structural slots of other schemas (Fornéz, Ruiz de Mendoza 1998)). The following extracts exemplify lower-level FRAGMENTATION shifts: *но в целом как-то огонь больше звучит как ну что-то статичное* ('in general fire sound more as something static'), *ну страх звучит мощней чем боязнь* ('er fear sound stronger than apprehension'); here the word is shown via its phonetic form. More common are the examples where the word is construed via CONTAINER sub-schema, for instance in *Но тем не менее есть выражение молоть чепуху например* ('Still there is a phrase talk nonsense') or a *старание.. ну это как можно опустить типа ну и старался…* (but effort is well you may say I took an effort); here the shift onto higher-level of construal is attained via syntactic construal of a word as part of set phrases. LIFE-HISTORY image-schema however appears seldom (13 instances). In н*у мертвец это какое-то слово больше / для меня как будто бы из книги какой-то там* ('er the dead is a word more / for me it looks like a word coming from some book') or in *просто из разных языков по сути-то так как / идеал это от английского* ('simply from different languages it seems / ideal comes from English') the participants describe the history of a word as they see it, in the first case with a word appearing from a book, and in the second case – from some language.

Next, we proceed to the image-schemas of Object reification. In this case, FUNCTION image-schema prevails (152 instances). In *человек который допустим / что-то идеально делает* ('a man who assumably / does something ideally') or *in может быть усердие это то / насколько глубоко ты это пусть там изучаешь что-то* ('maybe effort is something / how deeply you, for instance, study something there') FUNCTION image-schema is realized via its sub-schemas of MOTION (a man does something ideally) and LOCOMOTION (you study something there). Also frequent is KIND image-schema (143). For instance, in A *пламя / это что-то побольше* ('flame / is something larger') or in a *наказание / там судебное наказание* ('punishment / as judicial punishment') several referent properties are foregrounded which allow to consider a referent as representing some type or kind. PART-WHOLE image-schema on the contrary appears less frequently (72 instances) in contrast to the situations of languaging words. In *а-а рев / у-у-у медведя* ('roar / a bear makes it') or in *идеал это человек допустим* ('ideal is a man for instance') the participants construed the objects roar and ideal via meronymy relations, roar via a bear and ideal via a man; in these cases, they manifest PART-WHOLE image-schema. LIFE-HISTORY image-schema is far more frequent in object languaging (52 instances) than in word languaging. The following examples may serve to show the use of LIFE-HISTORY schema where CHANGE-OF-STATE sub-schema is applied in a-a *мертвец может это тот кого уже закопали* ('the dead is someone who has been buried'), and CREATION subschema is applied in ложь что-то маленькое а *вранье прям… / то что придумали хорошенечно наверное* ('a lie is something small and falsehood is far more / what has been elaborated well probably').

In Figure 3 (a-b) we will present the distribution of the image-schemas in Word and Object reification in tree diagrams. As we noted above, these distributions we will treat as profiles. Reification profiles in language manifest the relative activity (frequency) of higher-level image-schemas stimulating Word and Object reification.

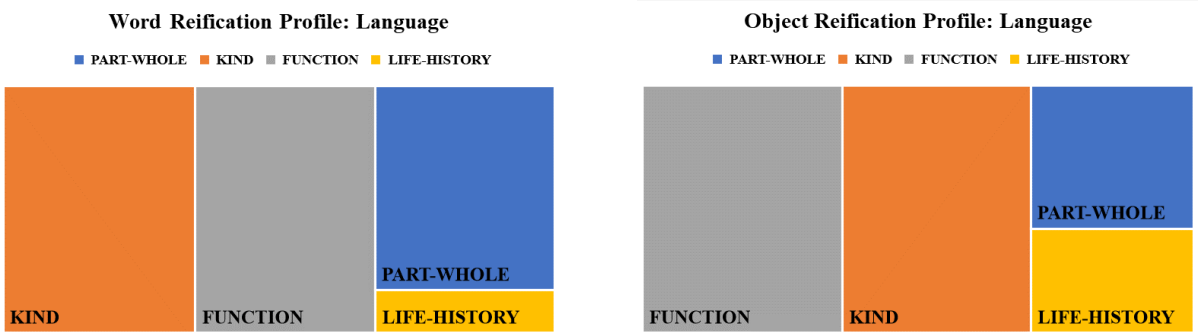


Figure 3 (a-b). Word and Object reification profiles in language

It is noticeable that the distribution of image-schemas in reifying a word and an object is in fact similar, with KIND and FUNCTION image-schemas prevailing in both cases; although there are several differences. χ^2 Tests showed that the differences are significant in LIFE-HISTORY (χ^2=6.19, p=0.013) and in PART-WHOLE (χ^2=5.71, p=0.017) image-schemas. These results show that in the process of Word and Object reification, people are likely to language word via its place in the language structure, whereas to language an object via its place among other objects of sub- and hyper-ordinate levels is less frequent. Still, they more often consider how the object emerges and disappears. Overall, Object reification appears to be more agentive since it encompasses both FUNCTION and LIFE-HISTORY image-schemas which prevail in contrast to Word reification.

REIFICATION PROFILES IN GESTURE

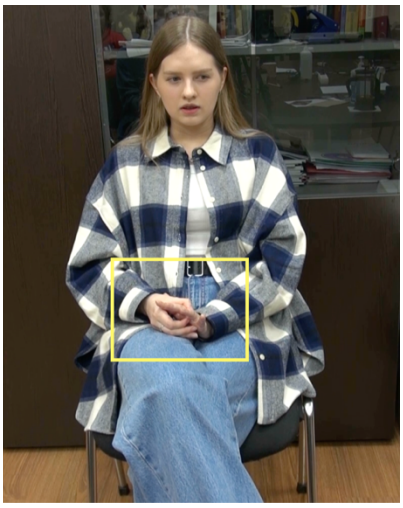
The second dimension to explore the reification of words and objects is gestural. As known, gestures can be used for various reasons and according to several views, we use gestures to facilitate our communication (e.g., Sowa, Wachsmuth 2002; Kopp et al. 2004). Some studies also reveal the importance of gestures for the speaker, as they can boost the process of lexical retrieval and data recall (Frick-Horbury, Guttentag 1998), especially during the so-called tip-of-the-tongue state (Frick-Horbury 2002). The question is whether we develop different notions of gesture-specific languaging when languaging the referents of different types. In one of the studies, it was revealed that speakers tend to use metaphoric gestures (see McNeill 2017) and beats (rhythmic gestures) when talking about abstract notions. On the contrary, the concrete notions in their speech were mostly accompanied by iconic (or representational) gestures (Zdravilova, Sidhu, Pexman 2018). The gesture use also seems significant when explaining the meaning of metaphors, as participants' explanations were more detailed when they used gestures (Argyriou et al. 2017). It might be explained by the significance of gestures in metaphor enactment, as it is argued that some metaphors become multimodal, as they are produced in verbal and nonverbal modalities at the same time (Müller 2010). For example, representational gestures are argued to be able to evoke conceptual metaphors and influence the way we understand language (Hostetter 2011). The importance of gestures is also mentioned in studies related to time and space construal. Gestures may influence the interpretation of spatial terms (e.g., Landragin, Romary 2003). Moreover, pointing gestures used in the proximal area of the interlocuters may influence the length of verbal utterances, which become shorter and less informative (Kühnlein, Stegmann 2003). The visual nature of gestures may explain their usage when talking about spatial imagery (Alibali 2005). For instance, when learning for navigation, people could recall the route better if they gestured during the study (So et al. 2014). In addition, gestures are widely used in the description of some motor tasks (Hostetter, Alibali 2007). Gesture production can enhance memory of the past event during its description (Stevanoni, Salmon 2005) and memory for speech when describing a narrative (Cook, Goldin-Meadow 2010). Consequently, languaging different types of objects of reference, for instance, objects (things), processes, abstract notions, and actions might in all probability proceed differently in gesture as well as in language.

With all these ideas in view, we addressed the functional typologies of gestures since it becomes obvious that their functions, for instance, the function of representing a referent or pointing at a referent or embodying a referent will be of particular importance here. Following Kendon (1995) and Cienki (2017), we will address the four gesture types considering their cognitive functions (with further specification): pragmatic, representational, deictic gestures and adapters. Pragmatic gestures are context dependent; they may emphasize a discourse component or help structure a discourse, express attitude and contact, manifest the word search. Representational gestures are the iconic gestures manifesting the modes of referent representation, for instance in holding, molding, acting, embodying and tracing. Deictic gestures are used to refer to people, objects, notions, places, events, etc. by pointing, directing or "touching" them. Adapters represent some movements, which can be self-oriented such as rubbing one's nose, fidgeting one's fingers, or they can be object-oriented as trifling with a pen. As seen, the functional gesture types like the image-schemas presented above, serve to language the referent via its properties, its involvement into activities and processes and additionally

4(a)

даже лексика такая типа ложь

“even the lexis is like well a lie”

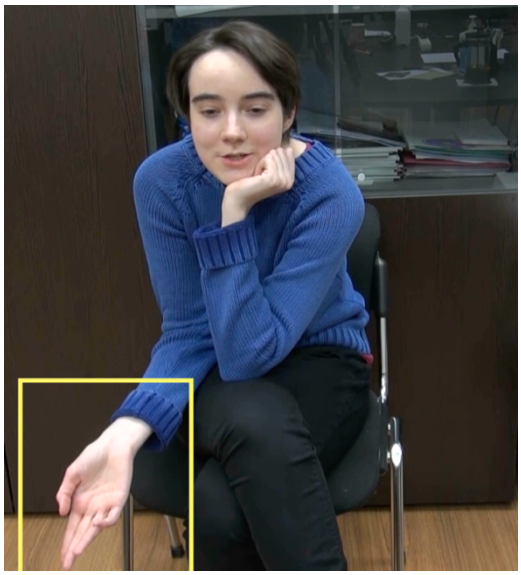


4(b)

тяжелая ноша

“heavy burden”

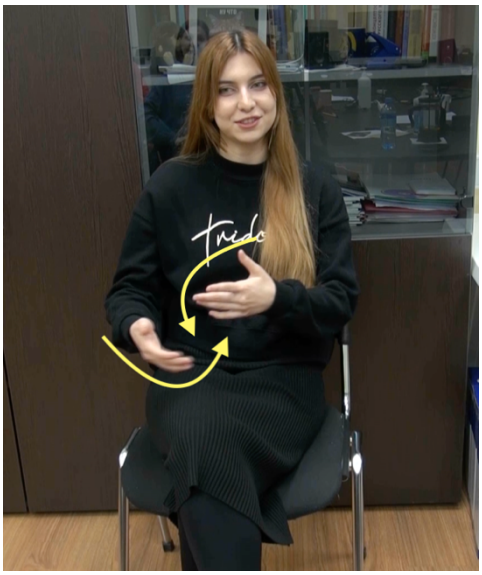
Figure 4 (a-b). Self-adapter in Word and Object reification



5(a)

ну страх звучит мощней чем боязнь

“well fear sounds stronger than apprehension”



5(b)

а кара это как бы свыше что-то такое

“and scourge seems to be something from above”

Figure 5 (a-b). Pragmatic gestures in Word and Object reification

emphasizing and pragmatizing its role in a multimodal context. Presumably, these gesture functions will work differently in languaging words and objects.

First, we report the results on the contrastive activity of gesture types in Word and Object reification. We found that adapters are most common in both Word and Object enactment (140 and 237 instances). In Figure 4(a) self-adapter is used in Word reification, and Figure 4(b) illstrates the way Self-adapter appears in Object reification.

The second common are Pragmatic gestures (83 and 150 instances). Pragmatic gestures appear in different subtypes, most frequent are discourse representational

6(a)

можно конечно сказать что небольшое пламя

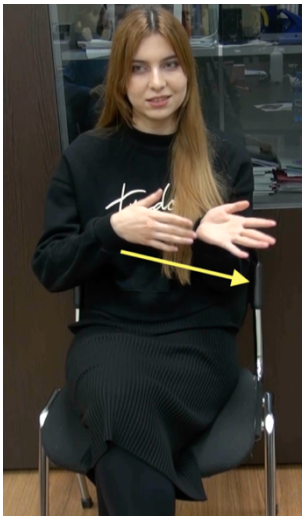
"of course you can say that the flame is not big"

6(b)

огонь это более широкое понятие наверное

"flame is a broader notion I guess"

Figure 6 (a-b). Representational gestures co-occurring with Word reification



7(a)

какой-то определенный человек

"a particular person"

7(b)

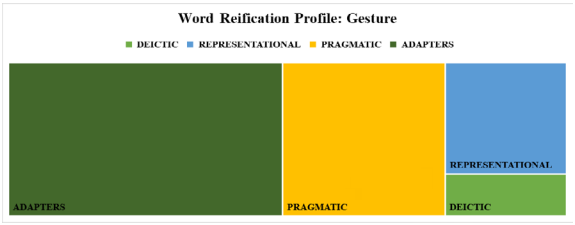
ты можешь сделать и не сделать

"you can do it or not"

Figure 7 (a-b). Deictic gestures in Object reification

(121 instances in Word and Object reification), word search (104 instances), expressing attitude/evaluation (92 instances), discourse structuring (73 instances). In Figure 5(a) pragmatic discourse representational gesture appears in Word reification and in Figure 5(b) Word search appears in Object reification.

Representational gestures are less common in both Word and Object reification (45 and 96 instances). Still, in accordance with Zdravilova, Sidhu, Pexman (2018) who claimed that concrete notions (here objects) are mostly accompanied by representational gestures, we expected representational gestures to be more active in



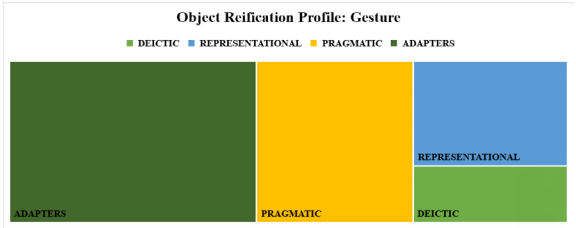


Figure 8 (a-b). Word and Object reification profiles in a gesture

Object reification, which we do not observe. Holding and molding gestures are most frequently present (74 and 70 instances). Figures 6 (a-b) illustrate the way holding and molding gestures are used in Word reification.

Deictic gestures were least frequent in both cases (17 and 52 instances); however, we may notice that they are used comparatively more often in Object reification. Overall, pointing (59 instances) and directing (38 instances) gestures prevail. Pointing gesture in Object reification is shown in Figure 7(a). In Figure 7(b) directing is used in Object reification.

In Figure 8 we present the tree diagrams showing the relative activity of gestures in reification profiles.

We may notice more repeated instances of adapters in Word reification and more instances of deictic gestures in Object reification. However, χ^2 Tests showed that these differences are not significant. This might mean that the gestural modality of languaging does not "differentiate" between the reification of words and objects; consequently, the secondary character of words is manifested in a higher degree only in the choice of image-schemas and not in gestures.

Next, we consider language and gesture as two interrelated components of multimodal languaging in Word and Object reification. Presumably, despite the fact that gestures do not "differentiate" between Word and Object reification, they do "differentiate" between the image-schemas. In Table 1 we present the total number of gesture types used together (in the same speech units) with four higher-level image-schemas.

Table 1 shows that while the overall distribution of gesture activity is similar for all four types of image-schemas, with the least activity of deictic gestures, representational coming next followed by pragmatic and then adapters, there is still a noticeable difference in their use. Repeated measures ANOVA demonstrated that the differences in gesture distribution are significant, with $F(3, 3)=9.3$, $p=0.26$. To find which gestures display specificity, we applied the stacked bar chart given in Figure 9.

The chart shows that major differences are observed in the use of deictic gestures which appear to be distinctively frequent with PART-WHOLE image-schema. Addressing Figure 8, we may see that deictic gestures displayed higher activity in object languaging; still, the PART-WHOLE image-schema is infrequent in object languaging. This allows to deduce that in those rare cases of object languaging via PART-WHOLE image-schema, deictic gestures will be highly active. Importantly, the KIND schema also manifests gesture specificity. While deictic gestures are mostly infrequent, representational gestures and adapters prevail. Bearing in mind (following Figure 3) that KIND schema was almost equally present in both word and object languaging, and that the distribution of representational gestures and adapters also displayed similarity, we may conclude that multimodal reification following the KIND image-schema will proceed similarly for word and object.

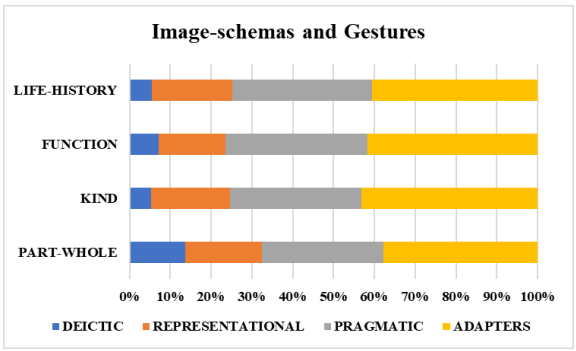


Figure 9. Chart showing the distribution of image-schemas and gestures

Overall, we may claim that while gestures do not co-occur with reification strategies, they do show specificity in relation to image-schemas. When languaging a referent in terms of its components or within a higher order category, specifying its property, its way of use or the way it appeared, people develop different gesture-specific

Image-schemas	Gesture types				
	Deictic	Representational	Pragmatic	Adapters	Total
PART-WHOLE	28	38	61	77	204
KIND	17	61	102	137	317
FUNCTION	27	62	132	158	379
LIFE-HISTORY	6	22	38	45	111

Table 1. Image-schemas and gesture types

notions of languaging. This means that in reifying both words and objects in gesturing it is more essential for the persons to language HOW they see something than WHAT they see. This observation extends the results reported in Kok & Cienki (2015) who claimed that gesture distribution is dependent on the grammatical categories of the reifying words they co-occur with, since we have shown that they do co-occur with the reification image-schemas. Still, if we recollect that Word reification was found twice less frequently, we may say that multimodal languaging "differentiates" between WHAT it enacts, words or objects. This result directly points to the secondary role of linguistic objects in languaging, still, it appears that language-specific notion has its own reification profile in multimodal languaging. These findings also support the idea of the language-specific notion being a part of languaging (Thibault 2019; Cowley, Kuhle 2020). The existence of steady multimodal languaging patterns also attests to the intersubjective character of reification presented by Sinha (1999) since these could have been developed only in interaction and communication as part of cultural practices of sharing the objects of reference in language and in kinesics.

FINAL REMARKS

While reification is an issue thoroughly studied in language and substantially studied in gesture, we address it as a multimodal languaging phenomenon, which means that we explore the coordinated activity of language and gesture developed in prior cultural practices (communication and interaction activities) to further speak and gesture presenting the objects of reference. We have found that reifying words and reifying objects as the objects of reference is not directly provoked by any particular image-schema or any gesture type encultured by the speakers. This means that there probably does not exist an image schema in language or a specific gesture type which are used solely for reifying objects or words.

Still, the differences in the frequency of appearance of Word and Object reification strategies and the differences in the distribution of image-schemas, PART-WHOLE, KIND, FUNCTION and LIFE-HISTORY (with even significant differences obtained with PART-WHOLE and LIFE-HISTORY schemas) as well as the differences observed in gesture distribution in these schemas evidence in favor of the encultured specificity of languaging objects and words multimodally. This specificity is deeply rooted in multimodal epistemic practices which we observe in the patterns of co-occuring language and gesture manifested in the reification profiles. For instance, the lower frequency of the Word-reification strategy allows to speak of the secondary role of linguistic objects in languaging, still, it appears that language-specific notion has its own reification profile in multimodal languaging.

Importantly enough, we have found that there are no specific gesture-notions of either words or objects, which means that presumably in languaging referents in gesture we mostly focus on HOW we do it rather than on WHAT we reify.

All these findings together strongly suggest that reification as a form of languaging is both multimodal and multimodally-driven. While further research is necessary to investigate into the more complicated patterns of reification, for instance in gaze and mimics, we still feel that the regularities we have found can make us more aware of the value of the concept of languaging activity in cognitive and multimodal semantics.

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Return to front page ↑