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Thematic Roles in Image Schemas. Part 2. A Missing Link from Reality to Mind¹

Motto:

“... no such mind, exempt from bodily processes... ever existed...”

Robinson (1965 [1921]: 13)

Abstract

For a long time, Thematic roles have received much attention, raising many disputes and controversies, but they still remain a ‘murky construct’ (Newmeyer, 2010, Rissman and Majid, 2019). Dowty’s words of 1986 that “the perennial vexing problem is the lack of agreement among linguists as to which thematic roles exist, and the absence of any obvious way to decide this question”, still hold true. Departing from the traditional ‘intuitive semantic’ approach, I provided evidence that Thematic roles are indispensable components of image schemas, and constitute a scaffolding for language structures (2022, forthcoming). A natural question arose then, where they come from in the image schemas. Fillmore (1968) proposed that they may be, “presumably, innate concepts”, while Langacker (1991) alluded to their “nonlinguistic” origin. The present paper argues that Thematic roles come from “nonlinguistic” sources, *i.e.*, human interpretation and categorization of reality, completing the Thematic roles embodiment process.

Keywords: Thematic roles, image schemas, embodiment, categorization

1 The title alludes to and the paper complements my 2022 paper “Thematic Roles and Image Schemas. A Missing Link Between Mind and Language”.

1. Introduction

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The complexity and confusion regarding Thematic² roles and their definitions are well known. Most theories of Thematic roles assume that there is only a small finite number of them. However, as Dowty (1986), Newmeyer (2010) and Rissman and Majid (2019) stated, no consensus had been reached to delineate the set needed for natural language semantics, and Mora Gutiérrez pointed out that “[p]roposals range from just a few to hundreds of them” (Gutiérrez, Pablo 2001: Section 5.1.1.1.).

The origin of Thematic roles is another area of research in linguistics. Although the *MIT Encyclopedia of the Cognitive Sciences* (1999) states that all “[g]rammatical studies, both traditional and contemporary derive Thematic roles from *semantic intuitive distinctions* (author’s emphasis), quite a few scholars proposed the nonlinguistic origin of them. Among these scholars are Fillmore (1968), Jackendoff (1999), Langacker (1991), Szwedek (2000), and more recently Grady (2005), Kasper (2008) and Szwedek (2022), to mention just a few.³ In my 2022 paper, I demonstrated that Thematic roles are already present in image schemas. The present paper takes a step further and argues that Thematic roles have their origin in human categorization of reality.

Before the analysis of the origin of Thematic roles in image schemas, it is appropriate to set a background for the claims made in the present paper. Thus, the Introduction (1.) will be followed by Section 2. which includes a brief account of my works in which I formulated a definition of the image schema with the OBJECT schema as its basic element (Szwedek 2019), and the functions (Thematic roles) that the OBJECT schemas play in the image schema structure (Szwedek 2022). A brief interlude (2.1.) on the uniqueness and importance of the sense of touch precedes an analysis of Thematic roles in Section 3. which provides a compact survey of their history (3.1.), discusses problems of their identification (3.2.), and suggests their possible origin (3.3.), the problem that is elucidated in section 4. on categorization. Section 5. offers short comments on some common Thematic roles in view of the previous discussion. Conclusions (Section 6.) and References close the paper.

2. The Image Schema: Definition and Structure

The concept of the image schema was introduced to linguistics by Johnson (1987) and Lakoff (1987), and soon became “a central notion in cognitive semantics and other fields that focus on the construction of meaning” (Mandler and Pagán Cánovas 2014: 526). At the same time, however, it has become one of the most controversial concepts with respect to identification and definition. For example, Gibbs noted that “there was little consensus as to what these things were and how they functioned in linguistic structure and behavior. Moreover, there was much disagreement over the best methods that might be employed to uncover the structure and functions of image schemas” (Gibbs 2005: 114). In that situation Gibbs asked, “[b]ut what are image schemas?” (Gibbs 2005: 114).

2 The capital ‘T’ is used to distinguish the term from the ‘thematic’ structure in terms of theme-rheme.

3 Grady proposed that “the most useful way of understanding image schemas is to see them as mental representations of fundamental units of sensory experience” (Grady 2005: 44). Thus, if Thematic roles are integral components of image schemas, they are also the result of sensory experience.

Among the many conceptions, the most radical statement came from Clausner and Croft who denied the possibility of formulating a definition of the image schema. They firmly declared that “one can define image schematic domains only by enumeration” (Clausner and Croft 1999: 21). However, their unconditional declaration was rather unfortunate as they disregarded the obvious truth that in order to enumerate anything you have to know what it is that you want to enumerate. In this difficult situation, Grady came up with a proposal that in order to formulate a definition of image schemas and identify their structure, we first have to specify conditions that image schemas should meet. He suggested “that the definition of image schemas should rule out certain schemas that are too general to be associated with any particular type of perceptual experience, or too rich to count as fundamental dimensions of perceptual representation” (Grady 2005: 35). Grady added that “the most useful way of understanding image schemas is to see them as mental representations of fundamental units of sensory experience” (Grady 2005: 44).

Following Grady’s advice, I proposed a definition of the image schema as “a mental structure with at least one OBJECT image schema, which is a conceptually independent entity representing a physical object whose fundamental property is density experienceable by touch,⁴ with ensuing boundedness, shape size, *etc.*” (Szwedek 2019: 20).

I argued (Szwedek 2019: Section 4) that the rationale behind this definition is that the OBJECT schema is unique among other schemas (for example, listed by Hampe 2005) in that it is the only conceptually independent⁵ schema, at the same time grounded in perceptual experience, primarily touch.⁶ Other schemas are relational, conceptually dependent, *i.e.* they cannot be conceptualized without conceptualizing the entities they interconnect. Thus, MOTION always implies ‘motion of an object’ (Szwedek 2022: 151), and LINK always implies at least two objects, *etc.* So defined, the image schema meets the criteria postulated by Grady; it is most general,⁷ but still associated with perceptual experience.

2.1. Perceptual Experience – the Sense of Touch

Perceptual experience (or experiential grounding) is one of the main pillars of image schemas. Among the senses, it is vision that has been commonly considered to be the sense which we rely on most, and which most research has been based on. Exemplary are Johnson’s words that although image schemas “are not tied to any single perceptual modality [...] our visual schemata seem to predominate” (Johnson 1987: 25). However, if we accept my stance that it is density which is the most essential property of all objects, solid, liquid, and gaseous, we will have to admit that touch, including the vital sense of taste, is more vital, primeval, and unique, a view that I advanced in many of my works (for example, Szwedek 2011; Szwedek 2019). To support this claim, I adduced the following arguments (partly quoted from Szwedek 2019: 12–13):

4 More on perceptual grounding and the uniqueness of touch see: Szwedek 2019: 12–14, and 2022: 145.

5 Cf. Langacker 1987 on the conceptually independent status of “thing”, and conceptually dependent “relations”.

6 For more details about the uniqueness and significance of the sense of touch, see: the next Section (2.1).

7 Excluding the “non-imagistic domains” (Clausner and Croft 1999: 14), that is such that lack images (Lakoff and Turner 1989: 94ff).

- a) Touch is the earliest sense to develop. Kornas-Biela writes that “the functional activity of the sense of touch (in the lips-nose area) is observed as early as the 5th week of pregnancy,⁸ and it is the most developed of senses at birth (Szwedek 2011: 159), while “the visual focus and tracking begin around the 31st week” (Chamberlain n.d.: 3);
- b) Touch, unlike the ‘telecommunicative’ senses (Pöppel and Edingshaus 1994), provides the closest possible experience of the physical world (Popova 2005);
- c) Touch is the only sense capable of providing a three-dimensional perception of objects;
- d) Touch, including the vital sense of taste, is the only whole-body sense reaching “full body sensitivity by the 32nd week” (Chamberlain n.d.: 1);
- e) The most vital haptic organs – the hands and mouth – have the largest neuronal representations in the brain;
- f) Referring to Katz ([1925] 1989), Popova wrote that “[f]or Katz ([1925] 1989), touch is fundamental in developing our belief in the reality of the external world: What has been touched is the true reality that leads to perception; no reality pertains to the mirrored image, the mirage that applies itself to the eye (Katz 1989: 240)” (Popova 2005: 400);
- g) Finally, the fundamental character of touch translates into linguistic structures. Many instances from various languages illustrate the KNOWING/UNDERSTANDING IS TOUCHING metaphor.⁹ Here are just a few examples.

English: *capture, catch, grasp the meaning*;

German: *fassen, begreifen* ‘to understand’ (from *greifen* ‘to catch’), *zur Kenntnis nehmen* ‘to take note’; *Begriff* ‘concept’.

Finnish: *käsittää* ‘to understand’ derives from *käsi* ‘hand’; *käsite* is a ‘concept’, *i.e.* something grasped.¹⁰

My arguments corroborated Lakoff’s report that “when mental imagery experiments are run with the congenitally blind using touch instead of vision, the results are virtually the same as for sighted people, except that people who can see perform the tasks faster” (Lakoff 1987: 446).

Finally, I concluded that “[...] we can close our eyes and not see, we can plug our ears and not hear, we can hold the nose and not smell, but we cannot stop touching things or being touched by – the air, the ground, our clothes, *etc.* – and therefore we hardly notice touching because it is always part of our bodily experience” (Szwedek 2019: 14).¹¹ In short, it is the only sense that cannot be “switched off”.

Incidentally, taking into consideration all these arguments, I summed up my argumentation that if touch develops the earliest of all the senses and in parallel to the nervous system (also around the 7th

8 7th week in Chamberlain n.d.: 1.

9 Bridging Sweetser’s (1990) metaphors: KNOWING/UNDERSTANDING IS SEEING, and SEEING IS GRASPING.

10 Further examples can be found, for example, [in:] Zwedek (2019: 13).

11 This is a paraphrase of Wittgenstein’s adage that we are “unable to notice something—because it is always before (our) eyes” (1953: 30), identical to Johnson’s observation that because “force is *everywhere*, we tend to take it for granted and overlook the nature of its operation” (Johnson 1987: 42).

week of pregnancy), it is impossible that it would leave no imprint on the latter. I found support for my statement in earlier observations by Neisser and Rohrer. Neisser pointed out that “[f]rom the biological point of view, a schema is a part of the nervous system” (Neisser 1976: 54), and Rohrer argued that the origin of image schemas stretches “into prenatal experience” (Rohrer 2005: 176).

I illustrated this claim by listing image schemas that may develop in the prenatal period.¹² Among others, I mentioned the OBJECT and CONTACT schemas which might develop through the foetus’s experience of density of the amniotic fluid and the walls of the mother’s womb. The womb and amniotic fluid are natural CONTAINERS. The MOTION schema would develop as a result of the foetus’s and the mother’s movements, the DIVERSION, BLOCKAGE schemas, as a result of the foetus’s bouncing off the walls of the womb, and so forth (Szwedek 2019: 15).¹³

2.2. Interim Conclusion

If OBJECT schemas are indispensable elements of all relational schemas, the question arises what roles they play there. I addressed the problem in my 2022 paper showing that, for example, in a propositional form of MOTION, *X moved*, “X” can function either as Theme (*The chair moved*), or Agent (*John moved*). The conclusion was that Thematic roles “originate in image schemas, constituting a link between the mind and language, thereby providing a stable scaffolding for various syntactic structures” (Szwedek 2022: 155).

My 2022 proposal evoked a further question, that is, where these roles come from in image schemas. This is the issue that the present paper attempts to resolve. However, before I propose a solution, I think it is appropriate to discuss briefly the history of Thematic roles, problems with their identification and interpretation, and earlier suggestions as to their origin.

3. Thematic Roles¹⁴

3.1. A Brief Historical Survey

Kasper (2008) offered a good overview of Thematic roles since antiquity. He first mentioned Pāṇini’s *Kāraḥas* which were discussed in some detail by Ganeri in his 2011 book (Ch. 3.). A *kāraḥa* is a semantic relation between the verb and a noun. The similarity between Pāṇini’s conception and modern intuitive semanto-syntactic approach is quite striking. Since western philosophy and linguistics was based exclusively on the Greek and Roman tradition, it was not until Böhlingk’s *Pāṇini’s Grammatik* (1839; mentioned by Kasper 2008, fn. 16) that the Indian legacy was revived. However, it took 90 years more before the next significant contribution appeared. In his 1930 article, Frank Blake pointed out that, in

¹² Perhaps more like Krzeszowski’s preconceptual schemas or preschemas (Krzeszowski 2016: 185ff).

¹³ Of the schemas listed by Hampe (2005), I also mentioned, LINK, FORCE, CYCLE, MATCHING, SELF-MOTION, CAUSED MOTION, SCALE and MATCHING.

¹⁴ The notion of “thematic roles” is a more modern term for Fillmore’s (1968) *case relations*, Jackendoff’s (1972) and Gruber’s (1965) *thematic relations*.

western linguistics, the term ‘case’ had always been used to denote only the formal relationships between a predicating element and its arguments. He argued that “no completeness of grammatical treatment is possible without recourse to the semantic approach” (F. Blake 1930: 48). To make the distinction between morphological and semantic case clear, he labelled the morphological cases “case forms”, and used the term “case” for the semantic relationships (F. Blake 1930: 35).

Blake’s approach was echoed by Gruber (1965) who called Blake’s “cases” “thematic relations”: Goal, Location, Source, Agent, and Theme. Gruber is regarded as the first to have introduced Thematic relations into modern linguistics. His work undoubtedly set the stage for all further research on the subject.

In 1968, Fillmore proposed six basic “deep cases”, Agentive, Instrumental, Dative, Factive, Locative, and Objective, but added that “additional cases will surely be needed” (Fillmore 1968: 24).¹⁵

To Gruber’s list, Jackendoff (1983, 1990) added the roles of Actor and Patient. He also showed that one argument can have two roles at the same time. In the sentence *The car hit the tree*, ‘the car’ is a Theme and an Actor, and ‘the tree’ is a Patient and a Goal. Despite many later proposals of individual Thematic roles like Beneficiary, Experiencer, Stimulus, etc. Rissman and Majid concluded recently that “individual roles cannot be defined in terms of necessary and sufficient conditions” (Rissman i Majid 2019: Introduction). This view confirmed Dowty’s earlier prediction that identification and description of Thematic roles is the problem of “role fragmentation”, that is, “how finely thematic roles should be divided” (Dowty 1991: 553). The persistent “murkiness” of Thematic roles evokes the question as to where the confusion and controversies come from.

3.2. Problems with Identification and Interpretation

As Dowty observed, “two perennial vexing problems with the appeal to thematic roles are (i) lack of agreement among linguists as to which thematic roles exist, and the absence of any obvious way to decide this question, and (ii) the lack of any definite way to independently justify the assignment of noun phrases to thematic roles in particular sentences” (Dowty 1986: 340).

The problems remained unsolved in the following 20 years after Dowty, when Mora Gutiérrez expressed the same concerns writing that the major reason of the lack of “agreement about which and how many roles are needed” is “the semantic role list approach” (Gutiérrez, Pablo 2001: 5.1.1.1.). He further contrasted Anderson’s (1971) localist approach, with just three semantic roles (Source, Location and Goal), with HPSG¹⁶ proposal “where each verb would assign its own peculiar semantic roles, different from the semantic roles of any other verb. So, the verb *love*, for example, would assign two semantic roles: ‘lover’ and ‘lovee’” (*ibid.*). However, he concluded, that in the latter case “the semantic generalizations that make the notion interesting are lost” (*ibid.*).

Ten years later, Newmeyer repeated that “there is no construct as murky in any subdivision of linguistic theory as that of ‘thematic role’. Literally dozens have been proposed over the years, and nothing approaching a consensus has been achieved in terms of delineating the set that are needed for natural language semantics” (Newmeyer 2010: 689).

15 Beaugrande and Dressler (1980) proposed over 30 concepts necessary for an adequate text analysis and they pointed out that “[i]n general, linguists’ typologies have fewer categories than ours [...], while those in artificial intelligence have more”.

16 Head-Driven Phrase Structure Grammar developed by Carl Pollard and Ivan Sag (1994).

And nothing much changed up to recent times when Rissman and Majid concluded that “[t]he literature documenting the murkiness of thematic roles is in fact so vast that we take it as given that individual roles cannot be defined in terms of necessary and sufficient conditions” (Rissman and Majid 2019: Introduction).

In 2022, I proposed a new approach in which, based on my 2019 definition of image schema, I claimed that OBJECT schemas are indispensable components of relational image schemas, and function as Thematic roles.

Some earlier suggestions referring to the origin of Thematic roles close the present section. The solution to this ‘vexing’ problem will be proposed in section 4. (Categorization).

3.3. Some Earlier Suggestions for the Origin of Thematic Roles

The MIT Encyclopedia of the Cognitive Sciences (MITECS) 1999: 873) clearly asserts that in all “[g]rammatical studies, both traditional and contemporary”, Thematic roles are derived from *intuitive semantic distinctions* (1999: 837; Author’s emphasis).

Somehow, this view persisted among linguists who ignored Fillmore’s and Langacker’s earlier suggestions as to their non-linguistic origin. Fillmore proposed that Thematic roles could be sets “of universal, presumably innate, concepts” human beings form to describe reality (Fillmore 1968: 24), and Langacker introduced the term *role archetypes* to highlight their “primal status and nonlinguistic origin”, considering them “so basic and experientially ubiquitous that their manifestation in language is for all intents and purposes inevitable” (Langacker 1991: 285). In 2022, I intimated that Thematic roles are identified as a result of perception of reality (Szwedek 2022: 148).

Taking up Fillmore’s (1968), Langacker’s (1991), and my suggestions (Szwedek 2022), I wish to claim that Thematic roles as elements of image schemas come from human perception of reality and people’s natural disposition to categorization.¹⁷

4. Categorization

Categorization¹⁸ was most comprehensibly and assertively described by Lakoff in his 1987 book. He stated in no uncertain terms that “[t]here is nothing more basic than categorization to our thought, perception, action, and speech. Every time we see something as a *kind* of thing, for example, a tree, we are categorizing” (Lakoff 1987: 5). He further remarked that “human categorization is essentially a matter of both human experience and imagination – of perception, motor activity, and culture” (Lakoff 1987: 8), it is mostly “automatic and unconscious, and if we become aware of it at all, it is only in problematic cases” (Lakoff 1987: 6). He also added a strong claim that “[a]n understanding of how we categorize is central to any

17 As I demonstrated, image schemas develop in the prenatal period (2018: 83-84). It follows that Thematic roles also evolve then within the image schemas. Thus, for example, the foetus is the Agent of movements, as well as the Entity Affected by the walls of the womb, and Theme as the element in motion or in position. However, as Rissman and Majid observed, “even for the Agent and Patient roles, the nativist view is not fully supported because we lack the detailed behavioural evidence” (Rissman and Majid 2019: 2).

18 However, the idea is not new. As early as in 1921 Robinson, commenting on the nature of mind, mentioned “our disposition to increase our information, *classify it,...*” (Robinson 1921: 14; my emphasis) which is reminiscent of categorization.

understanding of how we think and how we function, and therefore central to an understanding of what makes us human” (Lakoff 1987: 6). By way of conclusion, he stated that “[s]ince we understand the world not only in terms of individual things but also in terms of *categories* of things, we tend to attribute a real existence to those categories. We have categories for everything we can think about” (Lakoff 1987: 9).¹⁹

Since, as Lakoff pointed out, “we are employing dozens if not hundreds of categories” all the time (Lakoff 1987: 6), my claim that Thematic roles are subject to categorization as well, should come as no surprise.

While discussing categorization of Thematic roles, I will disregard metaphorical expressions for two reasons. Firstly, as I demonstrated (Szwedek 2011), all abstract entities are subject to ‘objectification’,²⁰ whereby abstract entities are interpreted as physical objects, and thus can be assigned Thematic roles. For example, in *My intuition tells me*, “intuition” is personified and assigned the Agent role. Secondly, all definitions of Thematic roles include such words as “participants” (e.g. Payne 2007), or “entities”,²¹ “doers” or “instigators” and “undergoers” (Saeed 2009: Ch. 6), “objects” (EAGLES), “persons”, “things” (MITECS), that is, physical objects.

I assume, therefore, that the source of Thematic roles should be sought in the categories of the world of objects. In other words, I suggest that Thematic roles come from human interpretation of reality, and people’s natural disposition to categorization which is generally subjective and fuzzy. This is why Thematic role categories proposed so far, inevitably differ in number, scope, definitions, and labels. The discussion hitherto indicates that it is not impossible that other distinctions and roles may appear, as was predicted by Fillmore (1968: 24), and implied in Dowty’s “role fragmentation” (Dowty 1991: 553).

There are countless objects entering into innumerable relations which people experience every day. Most of them pass unnoticed, and only those which are somehow significant and useful for human beings are paid attention to, categorized and labelled by linguists. As Lakoff demonstrated “human categorization is essentially a matter of both human experience and imagination – of perception, motor activity, and culture” (Lakoff 1987: 8). In other words, categorization is a matter of human interpretation of reality from various perspectives. As Beveridge and Pickering remarked, “[t]he number of potential embodied perspectives available for a given sentence is therefore the number of participants in that event plus that any embodied observers licensed by the comprehender’s situation model. We propose that these perspectives (e.g., embodied agent, embodied patient, embodied recipient, plus embodied observer and non-embodied observer) provide a transparent basis for discussing action perspective taking”.²²

It is also necessary to recall Lakoff’s words about the nature of categories: “Categories are categories of things. Since we understand the world not only in terms of individual things but also in terms of categories of things, we tend to attribute a real existence to those categories” (Lakoff 1987: 9).

19 For more recent and extensive research see: for example, Coello and Delevoye-Turrell (2007), or Cohen and Lefebvre (2017).

20 According to ‘objectification’, all physical objects are the ultimate source domain for all abstract entities. E.g., THOUGHTS are objects (*can be scattered and collected*), CONTAINERS (*in my thoughts*), HUMAN BEINGS (*are sober, cross one’s mind*), etc. Other abstract domains discussed in my paper are FEAR (emotion) and RACE (event) (Szwedek 2011: 351–355).

21 According to the OED, ‘entity’ is defined as either “Being, existence, as opposed to non-existence”, or *concrete*. Something that has a real existence”.

22 There is no page numbering in Beveridge and Pickering’s paper. The above quote comes from the section “A Taxonomy of Perspective”.

Lakoff's words well apply to Thematic roles as categories of functions. There are three aspects in light of which a brief analysis of some major Thematic roles will be presented: their embodied character, fuzzy nature and human perspective. Their embodied character consists in the fact that they are identified on the grounds of sensory perception. Their identification and definition is difficult because of the fuzzy nature of categories. As defined by Lotfi Zadeh (1965), a fuzzy set is a class of objects whose memberships are not precisely defined. In language,²³ a fuzzy category has no clear-cut referential boundaries (*cf.*, for example, Labov 1973). Additionally, categorization, and thus identification and definition of Thematic roles is crucially involved with human perspective.

In the following section, I will offer only brief²⁴ descriptions of these aspects with reference to some common Thematic roles, in order to primarily draw attention to some problems of categorization as sources of 'murkiness' of Thematic roles.

5. Brief Comments on Some Common Thematic Roles

Theme is the most enigmatic category, the most capacious and general. According to many definitions, it refers to *any object* (Author's emphasis) which is either "changing its position or condition, or as being in a state or position" (EAGLES).²⁵ Santorini and Kroch correctly observed that, "the thematic role of theme is something of a catch-all" (Santorini and Kroch 2007: Ch. 7.). Since all objects are either "in a state or position", or "change their position or condition", one may wonder whether it can be treated on a par with other roles. The label 'any object' conforms with embodiment as we can experience any physical object with our senses. However, it does not agree with either fuzziness or the role of human perspective. It is the either-or choice. Something either is or is not an object. We cannot experience with our senses non-objects. This confusing combination is reflected in the role's position among the other roles. Commenting on role hierarchies, Mora Gutiérrez pointed out that "most of the disagreement lies in where to locate the Theme with respect to other roles" (Gutiérrez, Pablo 2001: 5.1.2.2.1.). We can only add that in many hierarchies, Theme occupies the final position.²⁶

Agent is possibly the most prominent role in human experience as we are aware of ourselves, or others as 'doers'. Its exceptional status was emphasized by Mora Gutiérrez who wrote, with reference to role hierarchies, that while "[t]here is general agreement that the agent role should be the highest ranking role, [...] there is no consensus about the ordering of the rest of the roles" (Gutiérrez, Pablo 2001: Section 5.1.2.2.1.). The prominent status of Agent was also confirmed by Berk's observation that "[t]he agent subject is the classic doer of the action. An agent subject is an animate being that acts deliberately, with intent. Most speakers consider the agent the most typical subject. If you ask someone to construct

23 As remarked by Kahraman, Cengiz, Basar Öztayşi and Sezi Cevik, the theory "found many application areas in both theoretical and practical studies from engineering area to arts and humanities, from computer science to health sciences, and from life sciences to physical sciences" (Kahraman, Öztayşi and Cevik 2016: Abstract).

24 *Cf.* Rissman and Majid's comment on the vastness of "[t]he literature documenting the murkiness of thematic roles" (Rissman and Majid 2019: Introduction).

25 However, in EAGLES, the object of *give*, while changing its position, looks to me more like Affected Entity, and the subject of *walk* more like an Agent. But this again exhibits the 'murkiness' of role identifications.

26 For example, Jackendoff (1972), Belletti and Rizzi (1988), Grimshaw (1990).

a sentence out of thin air, it is likely that s/he will utter one with an agent subject” (Berk 1999: 15). This view is supported by neuroscientific evidence. Beveridge and Pickering (2013) observed that “many embodied accounts of language assume that if a perspective is adopted for action language, it is the agent’s perspective”, and they added that findings from magnetoencephalography “suggest that adopting an embodied agent’s perspective may occur automatically in the early stages of semantic processing, at least in isolated words”.²⁷

The role was most often defined in terms of “a participant which the meaning of the verb specifies as doing or causing something, possibly intentionally” (EAGLES), or “the initiator of some action, capable of acting with volition” (Saeed 2009: 153). It is clear that this role is a less general category than Theme because it refers to the role of animate beings capable of acting intentionally. The issue whether all animals act volitionally or only instinctively is outside the scope of the present paper. Regardless of the answer, from human perspective, we would still consider instinctive behaviour as agentive, which would call for a redefinition or reinterpretation of the Agent role. At any rate, such cases are only evidence of the ‘murkiness’ of Thematic roles.

Patient is the role assigned to an object (participant) which is affected by the activity of an Agent. It was defined by EAGLES as “a participant which the verb characterizes as having something happen to it, and as *being affected* [my emphasis] by what happens to it. Examples: objects of *kill, eat, smash* [...]”. I prefer to call this role *Affected Entity*²⁸ because “Patient” does not seem to be a felicitous label for the description of this function in such examples, as “kill”, “eat” or “smash” from the EAGLES definition, which itself uses the phrase “being affected”. The commonness of this role comes from the fact that “being affected” is a consequence of any kind of contact of objects, animate or inanimate, a frequent situation in our reality. As EAGLES examples show, the role refers to a wide range of objects, both animate and inanimate. It will definitely be an animate object in the case of “kill”, while “eat” will exclude people (?) and all inedible things, and “smash”, in its “break” sense, will eliminate unbreakable objects.²⁹

Experiencer seems an easier role to define. In the EAGLES definition, “a participant who is characterized as aware of something”, the participant is clearly a human being, as the pronoun ‘who’ implies. Saeed’s definition, “the entity which is aware of the action or state described by the predicate but which is not in control of the action or state” (Saeed 2009: 154), allows for a broader interpretation allowing into the category other animate beings. However, given the ambiguity of the property of ‘awareness’ with respect to other animate beings than humans, we must conclude again that assigning the role primarily to human beings reflects the anthropocentric perspective, with the whole category remaining fuzzy.

Beneficiary is usually described as referring “to a semantic role, generally defined as the (animate) participant who benefits from an action” (<http://www.glottopedia.org/index.php/Beneficiary>). The definition is slightly confusing, as ‘animate participant’ includes human beings and animals, while the pronoun ‘who’ refers to human beings (but also to pets). Saeed cautiously defined the role as “the entity for whose benefit the action was performed” (Saeed 2009: 154). Also Barry Blake defines the term cautiously as “the animate entity on whose behalf an activity is carried out” (Blake 1994: 70).

27 These quotations come from the section “Do Language Users Consistently Adopt the Agent’s Perspective?”

28 Cf. Beaugrande and Dressler (1980: 95), Jackendoff’s description of it as an “object affected by an action” (Jackendoff 1987: 381), and ‘being affected’ phrase in the EAGLES definition.

29 This reminds me of the difficulties in identifying semantic features for Objects in ‘selectional restrictions’ (Chomsky 1965).

Similarly, Palmer defines Beneficiaries as referring “generally to animate beings affected³⁰ by the action with a possible distinction between the notional roles of recipient and beneficiary” (Blake 1994: 10). Apart from Palmer’s dilemma about the possible distinction between recipient and beneficiary, all these definitions seem to include animals into the category of Beneficiary.

Instrument, by contrast, defined by Saeed as “the means by which an action is performed or something comes about” (Saeed 2009: 154), typically denotes inanimate objects. Basing on extensive research, Rissman, van Putten and Majid remark that “[f]or thematic roles such as Agent, Patient, and Goal (e.g., *Jackie threw the ball into the net*), a wealth of empirical evidence points to their cognitive prominence” (Rissman, van Putten and Majid 2022: Section 1.1.), but “[f]or the proposed thematic role of Instrument, by contrast, the cognitive prominence and stability of the category is less clear. English-speaking adults often omit instruments when describing instrumental events [...] When viewing events, English-speaking adults are also slower to recognize instruments than agents, patients, or goals” (Rissman, van Putten and Majid 2022: Section 1.1.), as revealed through patterns of eye-gaze (Rissman, van Putten and Majid 2022: Section 1.1.).

Location, defined by Saeed as “the place in which something is situated or takes place” (Saeed 2009: 154), and by EAGLES as “the thematic role associated with the NP expressing the location in a sentence with a verb of location”, is another global category, since everything in this world of objects has its place or takes place. Location is clearly different from the other roles in that it is the only one that does not directly refer to objects. As Langacker pointed out, a phrase like ‘under the bed is dusty’, names “a spatial region – a type of ‘thing’ rather than a relationship, (a relationship per se can hardly be dusty)” (Langacker 1993: 16).³¹

This brief description shows the variety of configuration of elements of Thematic roles, the source of difficulties and their ‘murkiness’

6. Conclusions

The great attention that Thematic roles attracted for a long time, resulted in a considerable number of works. Fillmore’s (1968) and Langacker’s (1991) suggestions as to the nonlinguistic origin of the Thematic roles were taken up in works of Grady (2005), Kasper (2008), and recently in my paper (Szwedek 2022). I believe that I made a definite step towards an explanation of the source of Thematic roles. I demonstrated then that Thematic roles have their origin in the mind as indispensable components of image schemas, constituting a scaffolding for language structures. The present paper takes a step further, trying to answer the question where Thematic roles come from in the image schemas.

The main points of the above considerations can be presented as the following list.

1. The paper shows that Thematic roles do not come from intuitive semantic reflection, but are essentially embodied categories.

30 His use of ‘affected’ might mean that Beneficiary, and also Experiencer, can be subcategories of Affected Entity with different perspectives.

31 The problem was explained in more detail in my paper (Szwedek 2011) where I called this kind of metaphorization ‘*objectification*’, and in my paper (Szwedek 2009) “Conceptualization of Space and Time”.

2. They are functions of conceptually independent objects within conceptually dependent relations (the distinction based on Langacker 1987).
3. Though categories are generally fuzzy, Thematic roles exhibit various configurations of fuzziness. For example, *Theme* is not a fuzzy category – an entity either is or is not an object. For *Agent*, at one end, animate objects are sharply distinguished from inanimate objects, while at the other end, agency is fuzzy. Is a bird swallowing an insect an Agent doing it intentionally, with will, or is the swallowing instinctive? Biologists would say it is instinctive,³² but it has to be remembered that human everyday judgements differ from specialists' knowledge, and the bird would most probably be considered to be an Agent.
4. And finally, it will be linguists who would argue about what Dowty (1991) called “role fragmentation”, *i.e.* how finely thematic roles should be divided.

The overall picture emerging from the above discussion leads to the conclusion that the identification of roles and of their number is an open issue. Due to the subjective nature of human perception and fuzzy nature of categorization, it is still a “vexing problem”, and, in my judgement, will remain so.

A more general conclusion emerges when we put together my paper (Szwedek 2022) and the present study. I demonstrated that Thematic roles in language have their origin in the mind. The present paper shows that Thematic roles in the mind come from human interpretation and categorization of reality, bridging the gap in the ‘perception – mind – language’ cycle.

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