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The Role of Construal in Mapping Conceptual Representations onto Linguistic Representations in a Static Event: An Experimentally-oriented Work

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□ ABSTRACT □

The purpose of this study is to outline a framework of visuo-spatial static event representations and how conceptual representations (CRs) are mapped onto linguistic representation inventory (LRI) (ii) to detail the role of construal in such a framework (iii) to shed light on schematicity-specificity relation investigating nominals (Ns) and relationals (Rs), and thereby making cross-conceptual and cross-linguistic comparisons between Kurmanji Kurdish and Arabic. The study hypothesizes the existence of both dynamic and meta-dynamic processes.

To achieve the objectives, a self-report object-spatial imagery questionnaire applied on a systematic random sample consisted of 15 Syrian Kurds and 15 Arabs; the questionnaire attempted to elicit one or two construals and the dynamic and meta-dynamic processes underlying them.

The study suggests that (i) meaning is encyclopedic involving analogization and categorization where the LRs cannot map all subtleties of the CRs (ii) participants profile either Ns or Rs and the percentage of Ns is greater than Rs: Kurdish (N 21>R7) and Arabic (N19>R7) (iii) Figure-ground alignments sound a universal criterion (iv) The LRs are more specific when they have more CRs and vice versa, and that is why they are hierarchical in meaning (v) what is N in Kurdish could be R in Arabic (vi) relation encodings are represented in PPs, VPs, adjectives but the use of active, passive participles, and verbal nouns is Arabic-specific and the use of periphrasis and Pre Per verb form is Kurdish-specific. LRI in Kurdish includes canonical copular clauses (CCCs), existential sentence + present perfect (Pre Per), and periphrastic factitive constructions but LRI in Arabic includes nominal sentences only. Ns are encoded in Nouns, NPs, nominal compounds, *PPs and CCCs in both languages (vii) atemporal Ns and Rs have dynamic relations and/or meta-dynamic relational process in their base. Finally, the study shows that the role of construal in mapping CRs onto LRs is not all-or-nothing, which we may call meta-dynamicity-stativity hypothesis. The meaning of LRs is not a direct pinning down of concepts, but it consists of both the content and the speaker's construal.

Key words: Construal, dynamic, meta-dynamic, mapping, conceptual representations, linguistic representations, static event, nominals, relationals, profile, figure and ground.

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دور التصور في الربط بين التمثيل الذهني والتمثيل اللغوي في مواضيع ساكنة: دراسة تجريبية

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□ ملخّص □

يهدف البحث إلى (أ) تأطير تمثيل موضوع ساكن ذو بعد مرئي مكاني وكيفية ارتباط التمثيل الذهني بقائمة محددة من التمثيل اللغوي (ب) شرح دور التصور في هذا الإطار(ت) تسليط الضوء على العلاقة بين المعنى العام التخطيطي(schematicity) والخاص منه (specificity) وذلك بدراسة الاسميات (nominals) والعلاقيات (relationals) مشكلاً بذلك مقارنة ذهنية–لغوية بين اللغتين الكرديّة والعربيّة. ويفترض البحث وجود عمليات ديناميكية وديناميكية تحويلية (meta–dynamic).

ولتحقيق الهدف تم تطبيق استبيان التعبير الذاتي عن الصور المكانية على عينة عشوائية تتألف من 15 أكراد سوريين و 15 عرب سوريين تم اختيارهم باتباع الطريقة الممنهجة. حاول الاستبيان استخراج تصور أو تصورين والعمليات الديناميكية والديناميكية التحويلية التي تدعهما.

وتوصل البحث بأن (أ) المعنى موسوعي يتضمن عملية مقارنة وتصنيف حيث أن التمثيل اللغوي لايستطيع التعبير عن كل التفاصيل الذهنية(ب) يختار الأشخاص إما الاسميات أو العلاقيات حيث أن نسبة الاسميات أكبر من العلاقيات: الكردية (N21>R7) والعربية (N19>R7) (ت) يعتبر التمييز بين العنصر والأساس خاصية عامة (ث) إن التمثيل اللغوي يكون أكثر تخصيصاً بالمعنى عندما يتضمن عمليات ذهنية أكثر و العكس صحيح، ولهذا السبب تكون هرمية من حيث المعنى (ج) ما هو اسمي في اللغة الكرديّة قد يكون علائقي في العربيّة (ح) يتم ترميز العلاقة ضمن العلاقيات في العبارات المجرورة و الفعلية و الصفات ولكن استخدام اسم الفاعل واسم المفعول و المصادر خاص باللغة العربيّة، أما استخدام تركيب بإضافة منفصلة (periphrasis) والفعل في صيغة الحاضر التام خاصة بالكردية. القائمة المحددة بالتمثيل اللغوي الكردي يتضمن الجملة البسيطة، الجملة الوجودية + الحاضر التام و التراكيب بإضافة منفصلة، أما في العربية فتتضمن جمل اسمية فقط. يتم ترميز الاسميات في الاسماء و العبارات الاسمية و الاسماء المركبة *وعبارات الجر والعبارات البسيطة في كلا اللغتين (خ) الاسميات والعلاقيات اللازمانية تحوي في مضمونها على علاقات ديناميكية وأو العملية العلاقية الديناميكية التحويلية. ويمكن تسمية كل هذا الفرضيّة الديناميكيّة التحويليّة السكونيّة (meta–dynamicity–stativity) والتي تظهر أن دور التصور في ربط التمثيل الذهني بالتمثيل اللغوي هي مسألة نسبية. إن معنى التمثيل اللغوي ليس عبارة عن تركيب المفاهيم على الكلمات وإنما تتكون من المعنى و تصور المتكلم لهذا المعنى.

الكلمات المفتاحيّة : التصور، ديناميكي، ديناميكي تحويلي، الربط، التمثيل الذهني، التمثيل اللغوي، موضوع ساكن، الاسميات، العلاقيات، تحديد، العنصر، الأساس.

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Introduction

What is the relation between conceptual representations (CRs), linguistic representations (LRs), and the embodied experience of the space in which we live? What is the role of construal in such a relation? To what extent does language mirror our internal thoughts once we interact with static events or space? – Inquiries that have become the subject of scrutiny within the framework of cognitive linguistics (CL). Our knowledge of space around us is schematic and so is our language; while construing an event, static or dynamic, this process involves interaction between perception and cognition which includes our encyclopedic knowledge, whereby a construist maps a situation in the external world onto a conceptualized mental world (Cf. Evans & Green, 2006, p. 7) and creates an event structure, a structural schematization or geometric image, which in turn maps onto language constructions. Drawing on Gestalt psychology (Köhler, 1929; King & Wertheimer, 2007), it is a striking fact that some aspects of language show how perceptual organization of a static or spatial scene is distributed into figure (fig) and ground (gr) (Langacker, 1987; Talmy, 2000a; Evans & Green, 2007), which justifies the claim of Pütz and Dirven that "space is the heart of all conceptualization" (1996, p. xi). This has, in effect, opened a window on a wide range of cross-linguistic comparisons that focused on language-specific differences found in the conceptualization and representation of specific event types, and how they are linked to the relevant concepts. Moreover, in this study, the languages in focus of analysis are Kurmanji Kurdish (henceforth Kurdish)[1] and Arabic; the focus will be on static or spatial event construal process and its mapping onto LRs in Kurdish and Arabic, and hence the study attempts to specify the potential inventory of the LRs for the same and only static event.

Research Problem

Two current problems face researchers investigating the interplay between CRs and LRs:

(1) How LRs reveal or constrain CRs;

(2) How CRs are mapped onto LRs.

The research examines the second problem: how CRs – which are aimed at a static visual event (see Fig 1) – are mapped onto the potential inventory of LRs which give access to different knowledge bodies.

Research Questions

Both problems, particularly the second, entail another array of *questions* having a direct bearing on the theoretical framework and the research methodology as far as the role of construal is concerned.

1. How does visual experience of events map onto LRs?
2. Does the mapping onto linguistic structures reflect the external world or the speaker's construal(s) of the world?
3. Do the LRs produce all subtleties of the CRs?
4. What are the most-likely-to-be-used constructions (i.e. the potential inventory of LRs) while construing one and the same static event (see Fig 1) in Kurdish and Arabic?
5. Do the participants profile nominals (Ns) or relationals (Rs) for the static event?

[1]The language of the vast majority of Kurds in Syria, Turkey, Armenia, and Azerbaijan, and of a few in Iraq and Iran. It belongs to the Western Iranian group of the Indo-Iranian/Aryan branch of the Indo-European family (Thackston, 2006).

6. Is it possible to make cross-conceptual and cross-linguistic comparisons between Kurdish and Arabic?

7. To what extent does encyclopedic knowledge contribute to the construal of the participants?

8. Is it possible to separate language from other cognitive processes as some formalists claim?

Taken together, these questions spawn the main hypothesis formulated as follows: If construists construe the same static event differently, there must be not only alinguisitic conceptual representations but also meta-dynamic conceptual and psychological processes underpinning them that make construists construe the static event the way they do and accordingly the linguistic representations are formulated.

The Importance and Objectives of the Research

Only scant literature has been conducted on static event encoding in language, especially in relation to Kurdish and Arabic. There is a need to understand the relation between the CRs and LRs before examining language. This is the first study ever to show that static events or atemporal nominals and relationals have dynamic and meta-dynamic processes in their base by using an experimental method, namely self-report object-spatial imagery questionnaire (SROSIQ). It *specifies* the potential linguistic representation inventory (LRI) for static events in terms of Ns and Rs in general and language-specific encoding categories in particular. Metaphorically, there are two basic ways for viewing the world and encoding it: nominally and relationally.

The study (i) outlines a framework of visual static event representations, and how the CRs are mapped onto the inventory of LRs (ii) details the role of construal as a general cognitive ability in such a framework (iii) sheds light on schematicity-specificity[2] (Sc-S) relation in the linguistic output of the participants construing the same static event in question and hence touches on cross-conceptual and cross-linguistic comparisons in terms of Ns and Rs in Kurdish and Arabic (iv) implements an experimental method for investigating the framework in question.

Theoretical Framework

Cognitive Linguistics (CL), a modern school of linguistic thought in 1980s, emerged as a reaction to formal approaches to language that strip language from its cognitive underpinnings. Overall, the basic assumption of CL can be summarized in Lakoff's cognitive commitment - a "commitment to make one's account of human language in accord with what is generally known about the mind and the brain, from other disciplines as well as our own" (1990, p. 40). In principle, CL is divided into two important poles: the first one is cognitive grammar (CG) which views grammar as a matter of constructions and symbolic assembly between the phonological pole and the semantic pole and this constitutes the symbolic thesis (Langacker, 1987, 2008, 2009; Goldberg, 1995); CG also includes a usage-based thesis which holds that the mental grammar we end up with is *abstracted* from specific situations of language use (Langacker, 2008). The second pole is cognitive semantics (CS) which investigates knowledge representation (i.e. conceptual structure) in mind and meaning construction (Talmy, 2000). Both CG & CS "rest upon an essentially *visuo-spatial conception* of meaning and conceptualization, in which symbolic structures are derived from embodied constraints upon human perception and

[2]Schematicity-specificity (Sc-S) relation in this study is a combination of both conceptual and linguistic elements.

agency in a *spatial* field" (Sinha, 1995, p. 7; emphasis added). CS has two theses: the first one points out that meaning is encyclopedic which holds that the semantic structure of linguistic units (i.e. dictionary view) provides access to representations in the conceptual system and the other one is the embodied cognition thesis which holds that we have a species-specific view of the world due to the nature of our physical bodies, including our neuro-anatomical architecture. Language is, therefore, a matter of embodiment.

Dynamic versus Static Events

Humans' mental capacity to construe an event in different ways and the distinct modes of construal become evident when comparing various linguistic structures possible for describing one and the same event. These structures can be divided into two notions known in physics: *state* and *dynamics* (Graumann, 2004).So, events can be construed as processes or states, and they are manifested in the form of image schemas (Lakoff, 1990; Johnson, 1987). The static versus dynamic characteristics of image schemas reference Langacker's (1987, p. 145) distinction between summary scanning (Sum S) and sequential scanning (Seq S).

Construal

Langacker states that "the term construal refers to our manifest ability to conceive and portray the same situation in alternate ways"(2008, p. 43). Jackendoff (1983) equates the Langackerian term "construal" with the notion of the "projected world", the world as unconsciously organized by the mind. Geeraets and Cuyckens (2007) define construal as humans' multifaceted capacity to conceive and frame the same situation in alternate ways. In this research, the notion of construal will be discussed in terms of fig-gr alignment and mental scanning (MS); profiling and domains; encyclopedic knowledge; Sc-S relation; and the dynamic and meta-dynamic processes.

Langacker's Focal Adjustments

Langacker (1987) proposes the visual metaphor of 'focal adjustments'. For him, images are employed to structure the conceived situation with respect to three parameters of focal adjustments, *selection*, *perspective*, and *abstraction*, which give rise to construal.

Selection

For Langacker, focal adjustments of selection determine which facets of a scene are being dealt with and relate to the conceptual domain. One facet of selection is the access an expression affords to a particular set of cognitive domains which range from basic domains (space, time, color, emotion…, etc.) through concepts and conceptual assemblies of indefinite complexity. So, *domains* are "necessarily cognitive entities: mental experiences, representational spaces, concepts, or conceptual complexes" (Langacker 1987, p. 147).

Another aspect of selection is prominence which involves profiling (or profile-base relationship)."*Profiling* means designating a conceptualization by means of a linguistic expression, and the *base* is the immediate larger conceptual content characterizing it" (Radden and Dirven, 2007, p.30). For Langacker (1987, p. 216), an expression can profile a *thing*. He maintains that an optimal nominal prediction[3] profiles a unitary entity that is so construed because the cognitive operations providing interconnections among its constituents are minimal both in magnitude and in prominence.

[3]**Under Langacker (1987), prediction refers the semantic pole of any linguistic expression in CL.**

However, an expression can also profile a *relation*. The relation the relational expressions profiles is *atemporal* in the sense that it is cumulatively scanned and gives rise to a cognitive representation that is static in time. A relational prediction focuses on interconnections and profiles the cognitive events where the conceptualization of these interconnections resides.

Perspective

Focal adjustments of perspective, for Langacker (1987), relate to the position from which a scene is viewed, with consequences for the relative prominence of its particularity. Two subheadings will be discussed under the banner of perspective: figure-ground alignment and mental scanning.

Fig-gr distinction is one of the important principles (e.g. proximity, continuity, smallness and closure) in Gestalt psychology (Köhler, 1929; Kofka, 1935) which proposes that we naturally arrange the elements of a visual scene into a salient *fig* and a non-salient *gr*. The principle of fig/gr alignment also applies to language. For example, just as there is a preferred way of seeing the spatial location of a vase relative to tabletop, there is a preferred way of construing and describing this situation. Thus, it is more natural to say *The vase is on the table* than ?*The table is under the vase*.

Another aspect of perspective is *mental scanning*. Mental scanning refers to the construal of a situation with respect to its phasing in time. In Sum S, facets of the complex scene are coexistent and simultaneously available in the conceptual representation. They constitute a coherent gestalt in their coactivation. This type of scanning characterizes static events. In Seq S, by contrast, the aspects of a scene are scanned in a sequential fashion. It involves the successive transformations of one configuration into another. This gives rise to a conceptualization of time as a dynamic process and characterizes dynamic events.

Abstraction

Abstraction is the process whereby a structure emerges as the result of the generalization of patterns across instances of language use.

Operational Definitions

Atemporal things & relations (**also atemporal nominals and relationals)** refer to any entity that is static in time.

Background (Bgr) refers to the underlying concepts, domains, simulation …,etc. It underlies the foreground or the figure.

Conceptual representation is a cover term for all dynamic and meta-dynamic mental processes in addition to any previously-gained experience that is represented as images.

Dynamic refers to the ability of a person to complete the incomplete perceptual input and to establish a relation to some implicit cognitive background. It also means that human cognition is active and becoming more complex overtime, and it is, therefore, considered encyclopedic.

Figure refers to a salient element in a stimulus and usually stands out in an asymmetric relation to the ground. When there is no perceptually present ground, the figure takes the background as a base.

Foreground (foreg) is conceptual and foregrounds a high symbolic composite with the support of a stimulus; a foreground can also be a figure when related to the background. Cf. figure.

Ground (gr) refers to the perceptual reminder of a scene or the less prominent element and is completed dynamically in the mind.

Analogy/analogization (analogize) refers to the ability of the human mind to compare present stimuli to similarly encountered events or similar virtual images.

Linguistic representation refers to any meaningful symbolic continuum, i.e. it includes all categories which form a construction.

Mapping refers to the way and the degree up to which the CRs are related to or encoded in the structure and meaning of LRs.

Meta-dynamic refers not only to the underlying cognitive events that are dynamic and renewable but also to the simulation or visualization of dynamic movements underlying a static event, e.g. one can trace the DMS, as either vertical (top-to-bottom) or horizontal (right-to-left); it forms a relational process.

Nominal(N) refers to any construction conceptually profiling a thing encoded in a nominal (i.e. nouns, NP, nominal compound…, etc.) in relation to some abstract domain. It refers to any string containing a conceptual referent having cognitive prominence, and this string has no relation encoding.

Relational(R)refers to any construction that forms figure-ground relation and encodes its relation in a specific category.

Superimpose refers to the ability of a person to add some of the qualities of one system or pattern to another one in order to produce something that combines the qualities of both.

Previous Studies

DeLancey (1981) presents two psychologically-oriented notions to account for the naturalness of the LR of an event, namely attention flow and viewpoint. The order of NP constituents in a clause reflects this attention flow. This flow of attention is the order in which the speaker expects the hearer to attend to them, i.e. once we construe things, we evoke similar images in the mind of the hearer. DeLancey attempts to show that events have an inherent natural attention flow, which is the flow of attention in witnessing how events actually unfold spatially (e.g. how two parameters intersect) and/or temporally (which event is perceived or construed as prior and which one is perceived as posterior).

Tomlin (1997) attempts to create a model of dynamic and static event representations, hypothesizing that the speaker assigns the referent in a current conceptual representation which is currently attentionally detected as the syntactic subject of the utterance. In experiment 1, he manipulates the dynamic allocation of attention to component elements of a computer-animated video event in which two fish approach each other until, in a flash, one swallows the other and then swims away. The participants describe the event as it unfolds on-line. The subjects describe events typically reported through semantically transitive clauses with an agent and a patient. The pertinent alternation here is active versus passive clause structures corresponding to whether it is the agent or the patient which has been cued visually by a small arrow. In experiment 2, he works on a static event composed of a set of stable parameters (e.g. a star and a heart). When the heart, which is on the left side, is cued, the subjects generate the utterance *The heart is on the left of the star*. Conversely, when the star, which is on the right side, is cued, the subjects generate the utterance *The star is on the right of the heart*. Tomlin shows that some component is attentionally detected at any given time and that this allocation of attention is alinguistic because the event representation has no lexical content or grammatical form.

Göksun *et al*. (2009) explore infants' processing of two foundational constructs, figure and ground, that are encoded by relational terms in English and Japanese in dynamic events and the static representations of the same events. 7- to 9-month-old and 10- to 12-month-old English-reared infants participated in the experiment. As for the method, infants were tested using Preferential Looking Paradigm. In Experiment 1, they tested English-reared infants' discrimination of figures and grounds in a *crossing* event. The dynamic stimuli consisted of televised displays of four people (a woman, a man, a six-year-old girl and a six-year-old boy) crossing one of the six grounds (railroad, road, narrow street, bridge, tennis court, and grassy field). The researchers calculated infants' percentage of looking towards each event. This distinction of non-native encoding of grounds by English-reared infants suggests that infants might share more universal conceptions of foundational constructs like figure and ground. In Experiment 2, static representations of dynamic events were used. The results of both experiments showed that infants' processing of these event components follows a universal to language-specific pattern. Infants' perception of objects is better when they are in motion. Pre-linguistic infants have broad and possibly universal basic constructs that are expressed by verbs and prepositions across languages.

Carroll and von Stutterheim (2011) were examining whether the means used in anchoring an event and its participants in context have implications for the way in which the event is represented in English and German. In English event descriptions, new referents are by preference introduced in existential predications, moving the categorization of the event into a second clause which is often subordinate (e.g., *There is a woman shopping in a supermarket*). On the other hand, German event descriptions freely permit introduction of new referents in indefinite noun phrases, thereby allowing the categorization of the event to take place in the same clause (e.g., '*A woman shops in a supermarket'*). This is the first study ever to look at the role of information perspective in the structure of event descriptions.

Methodology

The research used qualitative interpretive approach in order to reach an understanding of the dynamic and meta-dynamic processes underlying the participants' construal. This type of interpretation involved a detailed description of the data. But, the quantitative approach was used only to quantify the mean percentage of the categories and subcategories of Ns and Rs. To collect data, the researcher used Self-report Object-spatial Imagery Questionnaire (SROSIQ) which is per se an elicitation or auto-driving technique, whereby the research asks the participants and they respond by explaining what they see in the stimulus. The researcher used day-to-day language in SROSIQ in order to get natural and spontaneous data.

Stimulus

Since the study used SROSIQ, an OHP was involved together with a recorder. The stimulus consisted of concrete 3D geometrical object/s standing in some simple spatial relationship to one another as Fig 1 illustrates:

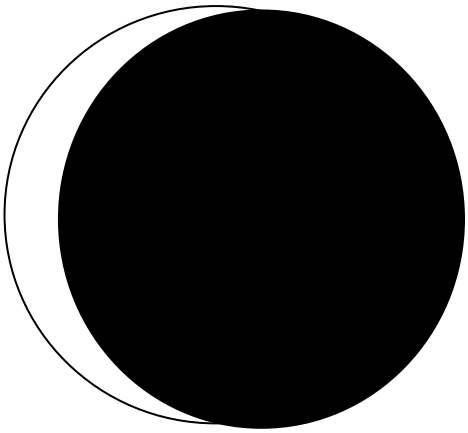

Fig 1 3D Back-and-White Static Event

Only and the same stimulus was used to check the human ability to construe the same static event differently both conceptually and linguistically. It was also used to know the potential LRI for this event in both languages. Moreover, it was used with both Kurdish and Arab groups in order to ensure reliability and validity of the research and therefore its transferability.

Setting

The place of the experiment was in the Conference Hall of the Faculty of Arts and Humanities at Tishreen University. The research was conducted between October 21st, 2014 and December 3rd ,2014.

Population and Sampling

The population comprised adult Syrian Kurdish-speaking participants (N=61) and Syrian Arabic-speaking participants (N=61) from different departments at Tishreen University. A sample of (n = 15) was selected randomly in each language by using the systematic sampling strategy.

Procedure of the Experiment

The procedure used with Kurdish participants was the same for Arab participants. One participant entered the hall at a time and was seated in front of a large screen projector. No sooner the first question was raised to the participant than the display of the picture (Fig 1) started on OHP and the recording was set. In Question 1 (Q1) of SROSIQ, s/he was asked about the way s/he construes the picture displayed on the screen. In Q2, s/he was asked if s/he could construe it in another way. In both responses (R1 and R2), the researcher attempted to elicit Ns and/or Rs, attempting to identify fig-gr relation. In Q3.1/2, the participants were asked about the reason for their construal. This technique was for examining the dynamic and the meta-dynamic processes. In Q4.3.1./2, they were asked about the direction of mental scanning (DMS), and hence the meta-dynamic processes. Both Q3 and Q4 were optional or sometimes implied in R1 or R2.

Results

Encyclopedic Meaning: Analogization and Categorization

The meaning of LRs was multimodal, i.e. the LRs could not provide all subtleties of the CRs but give access to them. The participants made an analogy between previous experience P and the target experience T, where P^T[4] included features of P in addition to the new features of T which is required for categorizing any related target experience (RTE); this concept can be codified in the following formula:{ P><T => P^T><RTE }. By analogization and categorization, participants superimposed or projected more features on the static event stimulus which is contentless[5] and schematic.

Schematicity-specificity Relation

The LRs were more specific when they had more CRs, and vice versa. If the participant was not able to analogize T to P, or T had no corresponding or related P, s/he resorted to more schematic use of language. Schematicity in Rs resulted in a redundant but related description for concepts for which no specific symbolic unit was conventionalized. Sc-S in mapping CRs onto LRs was found cross-linguistically and cross-conceptually in Kurdish and Arabic. SC-S relation consisted of hierarchies and sub-hierarchies as represented in Tabs 1, 2, 3 and 4.

The responses of participants, in both Arabic and Kurdish, were scaled from specific to more schematic meaning in order to show to what extent the process of construal affects our language. This scale depended on the degree of the complexity of the CRs (which are mostly illustrated in Q3 and Q4) together with the degree of mapping onto the LRs which may be conventional or non-conventional. Those expressions that were equal or close in the degree of specificity were given similar percentage. The scale ranged from 1% to 100 %.

[4]In P^T, we may note that T is written in superscript because P is more complex than T, and it incorporates T for other related target experiences (RTE) and this moves in continuum.

[5]The stimulus of the static event is contentless and schematic because it involves a geometrical figure.

Tab 1 Kurdish Nominals

Participants	SC-S N Scale %	CR	LRI	Translation	Type of LRI	Type of Alignment			Type of MS	
						Fig	FFore g	Bgr	Seq S	Sum S
No	C 1	C2	C3	C4	C5	C6	C7	C8	C9	C10
P3/5	100	Various instantiation of nominals	Heyvgirtin(2)	Lunar eclipse	Nominal compound	√	√	space /sky	×	√
P7/10	99		Wek heyvgirtinê(2)	Like lunar eclipse	*PP	√	√	space/sky	×	√
P5	100		Rojgirtin	Solar eclipse	Nominal compound	√	√	space/sky	×	√
P4	99		Wek rojgirtinê ye	(it) is like solar	CCC	√	√	sky	×	√
P6	99		Wek rojgirtinê	Like solar eclipse	*PP	√	√	sky	×	√
P9	98		Silînder e	(it) is cylinder.	CCC	√		space	×	√
P4	97		Silînder	Cylinder	Noun	√		space	×	√
P13	98		Def	Drum	Noun	√		space	×	√
P2	97		Heyv e	(it) is crescent.	CCC	√		space/sky	×	√
P3	97		Heyv e	(it) is moon.	CCC	√		space/sky	×	√
P11/15	96		Heyv (2)	Moon	Noun	√		space/sky	×	√
P1	96		Hevy	Crescent	Noun	√		space/sky	×	√
P12	95		Du girover: yek rês yek sipî	Two circles: one black	NP	√		space	×	√
P6	94		Girovereke kêm û girovereke reş	An incomplete circle and a black circle	NP	√		space	×	√
P12	93		Girovereke reş û kevaneke sipî	A black circle and a white arch	NP	√		space	×	√
P2	92		Du wênyan	Two pictures	NP	√		space/screen	×	√
P2/1	91		Wênyek (twice)	A picture	NP	√		space/screen	×	√
=	1%		Tişt	Thing	Nominal	√		space	×	√

Tab 2 Kurdish Relationals

Participants	Sc-S R Scale %	CR	LRI	Type of LR	Type of Alignment		Relation Encoding Type	Construction	Type of MS	
					Fig	Gr			SeqS	Sum S
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
KP8	100	Explicit and Highly Relational Constructions	Zemîn û sîya xwe dide xuyakirin. *'The earth shows its shadow.*	Periphrastic factitive constructio	Sî	Zemîn	Periphrasis	Dide + xuyakirin	×	√
KP1	99		Zemîn an gog di kevana xwe de ye. *'The earth or ball is inside its arch.'*	Copular clause	Zemîn (gog)	kevan	PP/ circum-position	di kevan a xwe de	×	√
KP14	99		Zemîn di hindirê çîkêde ye, di hindirê girovereke de ye./*The globe is inside its thing; it is inside a circle.*	Copular clause	Zemîn	Çîkê/ girovereke	PP/ Circum-position	di hindirê çîkê de	×	√
KP10	98		Tiştekî wek zemînê li ser çîkê *'Something like the earth on the thing'*	Copular clause	Tiştekî wek zemînê	çîkê	PP	li ser	×	√
KP11	98		Du girover li du hev in. *'Two circles are behind each other'*	Copular clause	Girover	girover	PP (P+ adverb)	li dû hev	×	√
KP13	97		Wek kilorekê heye, rûyê alîyekî reş e û kujîyek xwar çêkiriye li ser erdê. *'There is something like a disc and its face is black on one side*	Existential sentence, Pre Per	Kilorek	erdê	VP (V/ Pre Per+ Adj + PP)	war çêkiriye + li ser	×	√
KP5	97		Girovereke reş heye û wek heyve sipî ji ber de derketiye.// *'There is a black circle and something like white crescent has protruded from it'*	Existential sentence, Pre per	Heyveke sipî	Girovereke reş	VP (V PP/ circum-position (P Adveb *P)*	Ji ber de	×	√
=	1%		Thing in relation to thing.	Any of the above	Thing	Thing	Any of the above	Any of the above	×	√

Tab 3 Arabic Nominals

Participants	SC-S N Scale %	C R	LR I	Translation	Type of LRI	Type of Alignment			Type of MS	
						Fig	Foreg	Bgr	Seq S	Sum S
No	C1	C2	C3	C4	C5	C6	C7	C9	C10	C11
P2/14	100 %	Various instantiations of nominals	(2)كسوف	Solar eclipse	Verbal Noun (VN[6])	✓	✓	Space /sky	×	✓
P8	100		Os,t خسوف الشمس	Lunar eclipse	(Verbal) noun	✓	✓	Space/sky	×	✓
P10	99		مثل كسوف الشمس	Like solar eclipse	*PP(P+ VN)	✓	✓	Space/sky	×	✓
P6	99		كسوف الشمس	Solar eclipse	Nominal Compound	✓	✓	Space/sky	×	✓
P6	99		خسوف القمر	Lunar eclipse	Nominal Compound	✓	✓	Space/sky	×	✓
P7/	98		كرة أرضية(2)	Globe	Nominal compound	✓	✓	space	×	✓
P10	98		مثل الوعاء	Like the bowel	*PP	✓		Space	×	✓
P8	97		عين	Eye	Noun	✓		Skull/face	×	✓
P9	96		دائرتين	Two circles	NP	✓		Space/sky	×	✓
11P9/	95		قمر (3)	moon	Noun	✓		Space	×	✓
P5	95		يمكن تكون هلال	(it) may be crescent	Copular clause	✓		Space/sky	×	✓
P13	94		مثل القمر	Like the moon	*PP	✓		Space/sky	×	✓
P1	93		صورة قريبة من صورة القمر	A picture close to the image of the crescent	*Sentence	✓		Space (screen)	×	✓
P4	92		دائرة	Circle	Noun	✓		Space	×	✓
P13	91		شكل كروى اسود	A rounded black shape	NP	✓		Space	×	✓
=	%1		شيء	Thing	Noun	✓		Space	×	✓

[6]Verbal nouns (aka *al-masdar*) are derivatives which are systematically related to specific verb forms and can be derived from triliteral or quadriliteral roots. It names the action denoted by its corresponding verb, for example, *wʊsˤul*وصول 'arrival' from the Form I verb wasˤal-aوَصَل (for detailed discussion see Ryding, 2005) .

Tab 4 Arabic Relationals

		LRI	Type of LR	Type of Alignment		Relation Encoding Type	Construction	Type of MS	
				Fig	Gr			Seqs	Sum S
	C2	C3	C4	C5	C6	C8	C9	C10	C11
	Explicit and Highly Relational Constructions	كرة يدور[8] حولها قوس *A ball around which an arch rotates.*	sentence	كرة	قوس	VP(V+ adv)	يدور+ حول	√	×
		طابتين وحدة غامقة وحدة فاتحة وحدة مغطاية عالثانية. *Two balls, one is dark and the other is bright; one covered by the other.*	sentence	وحدة غامقة	(الطابة) الثانية	Active participle[7] + pp	مغطاية +على	×	√
		كرة أرضية مقسومة نصين A globe *split into* two halves	sentence	نص (الاسود)	نص (الأبيض)	Passive participle (adjective)	مقسومة		√
		يمكن ان تكون نقطة سوداء ضمن دائرة بيضاء، ضمن مربع ابيض *It might be a dark point inside a white one, inside a white*	sentence	نقطة سوداء	دائرة بيضاء (مربع ابيض)	Adverb	ضمن	×	√
		دائرة طالعة من دائرة A circle exiting from another	sentence	الدائرة السودا	الدائرة البيضة	Active Participle	طالعة+ من	×	√
		دائرة ضمن دائرة *A circle inside a circle*	sentence	دائرة (اللي إطارة خارجي)	دائرة (السودا)	Adverb	ضمن	×	√
		سقوط الدائرة السودا من الأعلى *The falling of the black circle from above.*	sentence	الدائرة السودا	الأعلى	VN + PP	سقوط + من الأعلى	×	√
		Things in relation to things.	sentence	Thing	Thing	Any of the above	Any of the above	99% ×	99% √
C1 Sc-S R Scale%		100%	98	98		97	97	96	95	1%
Participants		P1	P2	P15		P3	P12	P5	P3	=

[7]**Active participle *(ism al-faʕil)* is a descriptive term *derived* from active verbs*;* it refers to the doer of the action; its basic triliteral pattern is *faʕil* (e.g. طالعة/ *existing*); in form, it functions as a substantive; unlike a pure noun, syntactically, it can function as a verb substitute, a noun, or an adjective (for a detailed discussion see Ryding, 2005).**

[8]**This is the only participant who uses a dynamic verb.**

Nominals and Relationals Percentage in Kurdish and Arabic

Depending on the categorization and sub-categorization of Ns and Rs in Tabs 1, 2, 3 and 4, the following results can be sketched in Fig 2.

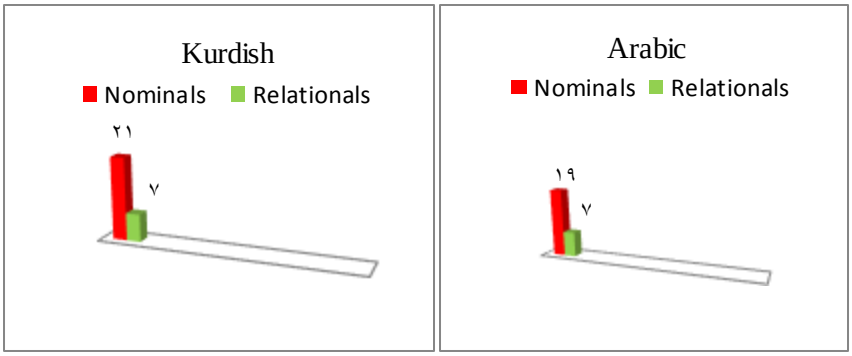

Fig 2 The contrast in the percentage of N-R categories

Depending on Fig 2, the following can be stated:

The mean percentage of using Ns for the static event in Kurdish is greater than that of Rs (N 21>R7). The percentage of using Ns for the static event in Arabic is greater than Rs (N19>R7). The percentage of using Ns in Kurdish is greater than Arabic (21>19). The percentage of using Rs in Kurdish is equal to Arabic (7= 7).

Moreover, after analyzing the responses of each participant, there was a tendency on the part of the participant to start their first construal with Ns (i.e. profiling things). Only when given more time did they produce Rs.

Nominal-Relational Cross-conceptual and Cross-linguistic Comparisons in Kurdish and Arabic

Some Ns in Kurdish were Ns in Arabic for 'the same' concept and vice versa. Some Ns in Kurdish were also Ns in Arabic. Therefore, the 'same' concept in each language could be mapped similarly or differently onto the LRs

As shown in Tab 2, relation encodings in Kurdish were represented in PP→ P N; PP→ P Adv; VP →V PP/Circumposition (P Adv P); VP → V/Pre Per Adj PP; VP → V/Pre Per PP/Circumposition (P Adv P); Circumposition → P adv N P and Periphrasis.

As shown in Tab 2, the types of LRs were CCCs[9], existential sentence + Pre Per, and periphrastic factitive construction.

To Tab 4, relation encodings in Arabic were represented in VP→ V Adv; Active Participles + PP; Passive Participle/Adjective; Adverbs, Verbal Noun + PP.

The types of LRs in Arabic were all nominal sentences having one of the previous encodings.

While Kurdish participants represented the final process in scanning in Pre Per, Arabic participants represented it in active participles, passive participles and verbal noun + pp.

Kurdish nominals, as Tab 1 shows, were represented in Nouns; NPs; nominal compounds → N gerund; *PPs→ P[10] nominal compound (N + gerund); and CCCs.

[9] CCCs stands for canonical copular clauses.

[10] P (like) is analogic and is a non-spatial preposition. It is used with an asterisk to indicate that the construction is nominal.

Under Tab 3, Arabic nominals were represented in VNs; *PP→ P VN; *PP→P NP; nominal compound → N VN; NPs; Nouns; CCC; nominal sentence.

Figure or foreground vs. Ground or background

The ability to identify figs and grs sounds universal criterion in both languages. The fig can be the first element (i.e. the most important element) in the LR or the last element; this is mostly evident in Kurdish where the participants start with the gr and then move to the gr.

The term foreground (foreg) was restricted to the ability of the participants to form a composite symbolic unit. In Kurdish, this was represented in nominal compounds consisting of a noun and a gerund; and copular clauses. In Arabic, it was represented in verbal nouns, *PP, nominal compounds consisting of a noun and a verbal noun, nominal compounds consisting of two nouns.

Dynamic and Meta-dynamic Processes

Atemporal Ns and atemporal Rs had dynamic relations and/*or* meta-dynamic relational process in their base in both Kurdish and Arabic. The dynamic relation was evident in the ability of the participants to form a gestalt out of the incomplete stimulus and to relate the fig to the background, i.e. to establish an implicit relation. Evidence of the meta-dynamic relational process came from the DMS (see Fig 3). The participant either had a directional process or superimposed such a process on the static event to be cooperative with the researcher. As the Tabs show, the type of scanning involved in all responses was Sum S, except for MAP1 / R2, who uses Seq S, a dynamic verb. Thus, the dynamic and meta-dynamic processes show that there is no such a thing as a static thing in our conceptualized mental world. Indeed, there exist dynamic and meta-dynamic processes.

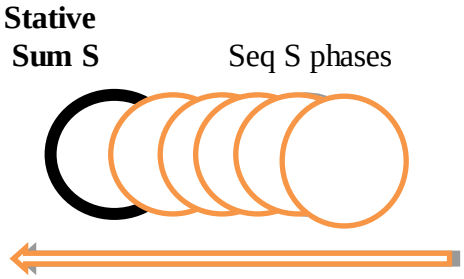

Fig 3 Meta-dynamic MS underlying the Static Event

Light-colored circles show the successive phases in MS and the bold circle shows the final phase in the process.

Meta-dynamicity-Stativity Hypothesis

Finally, after the findings we have come up with, we would like to label our hypothesis: *Meta-dynamicity-Stativity Hypothesis*, and we can cast it as follows:

If construists construe the same static event differently, there should be not only alinguisitic dynamic conceptual relation but also complex meta-dynamic conceptual and psychological processes underpinning it, that makes construists construe the static event the way they do, and accordingly they are partially mapped onto the linguistic representations.

Indeed, the hypothesis shows that the role of construal in mapping CRs onto LRs is not all-or-nothing. It implies that there is a strong relation between language and the general cognitive abilities.

Discussion:

Although we might agree that the LRs give access to CRs and the meaning we select emerges as a consequence of the context in which the word occurs, based on the data collected from Kurdish and Arabic, it was clear that the mind superimposed more features than what the context had, as seen in the process of analogization and categorization.

Sc-S relation illustrates that LRs, namely Ns and Rs, have different degrees of CRs which we discuss in terms of dynamic and meta-dynamic processes.

Unlike Göksun *et al*. (2009) and Tomlin (1997), we illustrated that looking and attention, as sensory experience, are not only mechanisms for locating figs and grs in an event and in the structure of language; other dynamic and meta-dynamic processes underlie these mechanisms.

We further distinguish ourselves from Langacker (1987) by stating that even Ns may have a relation or relational processes in their base. We relate Ns and Rs to a specific event.

As seen in previous literature, researchers dealt with static and dynamic events as two separate things. In our study, we start with a static event and in terms of which we explain the relation between the dynamic and meta-dynamic events.

Conclusions

LRs cannot pin down all CRs to a specific value. LRs reflect the speakers' construal of the external world. The construal of a static event in both languages can fall into two categories: nominals > relationals. The mind can superimpose dynamic and meta-dynamic processes on a static event, and that is why participants tend to *name* these processes, i.e. use participles, such as active participles, passive participles, gerunds, or verbal nouns. The study shows a movement from universal criteria to language-specific features.

Recommendations:

-A Syllabus may include visuals (e.g. pictures and videos) because, as the general assumption of the study showed, we cannot separate language from the CRs.

-It is essential for teachers to activate the concepts underlying each LR in the mind of the learners.

-Translators should depend on conceptual translation. Relating languages is not a matter of tense-to-tense or noun-to-noun correspondence; different LRs in each language may share the same concept and the same way of conceiving and perceiving the world around us.

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