

Image schemas in Cognitive Linguistics: Introduction

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An image schema is a recurring dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience. ... 'Experience' ... is to be understood in a very rich, broad sense as including basic perceptual, motor-program, emotional, historical, social and linguistic dimensions. (Johnson 1987: xiv, xvi)

1. The original notion in a nutshell

Advancing a non-objectivist, “experiential” approach to language and thought in their pathbreaking 1987 publications, George Lakoff and Mark Johnson jointly introduced the notion of “image schema” as one of experientialism’s major foundational pillars, though with the linguist’s and philosopher’s different sources of inspiration and foci of interest (cf. Lakoff 1987: 459-461; Dodge and Lakoff, *this volume*; Johnson 1987: 19-21, *this volume*). My own cross-reading of their 1987 monographs for definitional criteria has yielded the following condensed characterization of their original conception:

- Image schemas are *directly meaningful* (“experiential”/ “embodied”), *preconceptual* structures, which arise from, or are grounded in, human recurrent bodily movements through space, perceptual interactions, and ways of manipulating objects.
- Image schemas are highly *schematic* gestalts which capture the structural *contours* of sensory-motor experience, integrating information from multiple modalities.
- Image schemas exist as *continuous* and *analogue* patterns *beneath* conscious awareness, prior to and independently of other concepts.

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- As gestalts, image schemas are both *internally structured*, i.e., made up of very few related parts, and highly *flexible*. This flexibility becomes manifest in the numerous transformations they undergo in various experiential contexts, all of which are closely related to perceptual (gestalt) principles.

In conjunction with the capacity for conceptual metaphor, which allows human beings to map experiential structure from the “imagistic” realms of sensory-motor experience to non-imagistic (“abstract”) ones, image schemas were hypothesized to provide one of the “embodied” anchors of the entire conceptual system (for a survey, cf. Johnson, *this volume*).

The initial identification of image schemas was mainly achieved through the cross-linguistic analysis of concepts of motion and spatial relations (cf. the survey in Dodge and Lakoff, *this volume*; Talmy, *this volume*), and the “informal analysis” of the phenomenological contours of every-day experience (cf. Johnson 1987, *this volume*). The image schemas in (1) appear in both Johnson (1987) and Lakoff (1987) and constitute the core of the standard inventory (cf. Johnson 1987: 126; Lakoff 1987: 267; Lakoff and Turner 1989: 97-98; Cienki 1997: 3, 12; Clausner and Croft 1999: 15); the more diverse items in (2a) occur only in Johnson’s list,¹ and the orientational schemas in (2b) only in Lakoff’s discussion. The image schema list has never constituted a closed set, and by far not all of the numerous subsequent additions were in such relatively close keeping with its original spirit, as the few additional examples given in (3).

- (1) a. CONTAINMENT/CONTAINER, PATH/SOURCE-PATH-GOAL, LINK, PART-WHOLE, CENTER-PERIPHERY, BALANCE
b. the FORCE schemas: ENABLEMENT, BLOCKAGE, COUNTERFORCE, ATTRACTION, COMPULSION, RESTRAINT, REMOVAL, DIVERSION
- (2) a. CONTACT, SCALE, NEAR-FAR, SURFACE, FULL-EMPTY, PROCESS, CYCLE, ITERATION, MERGING, MATCHING, SPLITTING, OBJECT, COLLECTION, [MASS-COUNT], [SUPERIMPOSITION]
b. UP-DOWN, FRONT-BACK
- (3) a. INANIMATE MOTION, ANIMATE MOTION, SELF MOTION, CAUSED MOTION (Mandler 1992: 593-596), LOCOMOTION (Dodge and Lakoff, *this volume*)

1. MASS-COUNT and SUPERIMPOSITION, though included in Johnson’s image-schema list, appeared as “image-schema transformations” in Lakoff (1987; cf. also Johnson 1987: 26).

- b. EXPANSION (Turner 1991: 171), STRAIGHT (Cienki 1998), RESISTANCE (Gibbs et al. 1994: 235), LEFT-RIGHT (Clausner and Croft 1999: 15), ...

2. Divergent definitions, expanding lists, multiple perspectives

Much discussion of virtually all of the crucial dimensions of the initial definition was inspired by the fact that the original proposal and image schema lists were partly suggestive and not entirely consistent themselves. Various subsequent interpretations were based on divergent specifications of selected criteria, pertaining to, e.g., the relational character of image schemas, their level of specificity, or the role of perceptual information (for an in-depth discussion of these, cf. Grady, *this volume*). Turner's (1991: 57, 177) relatively loose conception of image schemas as "extremely skeletal images", to quote only one highly illustrative example here, did not only suggest a very close affinity to visual images, but was also much more inclusive than the original notion, allowing in even various geometrical configurations, such as "vertical lines ... ordered by relative size" (cf. Turner 1991: 177), as well as images normally regarded as basic-level ones, like that of a 'cup' or 'plate' (Turner 1991: 177), which contrast with the most closely related items on the standard image schema list, CONTAINER and SURFACE, along various of the aforementioned aspects. Other dimensions of the original proposal, such as the postulated preconceptual and unconscious nature of image schemas, or their assumed status as universal cognitive primitives have even caused considerable theoretical debate (cf. Zlatev 1997: 40-43, *this volume*).

Neither the original characterization, nor the entire subsequent research to date can thus be said to have provided the Cognitive-Linguistics community with a set of clear-cut criteria to set image-schematic representations apart from other basic or schematic concepts. It has thus been suggested that the failure to predict a complete image-schema inventory on the basis of any set of definitional criteria may not just stem from any disagreements over specific points, but be misguided in principle (cf. Clausner and Croft 1999: 21-22; Clausner, *this volume*). Clausner and Croft's (1999) suggestions to redefine image schemas as image-schematic domains on the basis of the *distributional* criterion of occurrence in a large number of domain matrices can thus also be understood as the rejection of any definitional attempts via necessary and sufficient criteria.

Apart from the various existing disagreements as to how inclusive or restrictive definitions of “image schema” should be, the notion has invited treatment from a variety of viewpoints and at multiple levels of analysis, which by necessity cut across established academic compartmentalizations and methods of investigation. Accordingly, attempts to elaborate and utilize the notion of image schema have been made within a range of different disciplines simultaneously. Traditionally, image schema theory has been driven by (neuro-)psychologically plausible linguistic analyses (e.g., Brugman [1981] 1988; Lindner 1983; Lakoff 1987: 440-444; Deane 1992, 1993, 1995; Dewell 1994, 1997; Kreitzer 1997) as well as philosophical considerations (Johnson 1987). While this is still the case (*this volume*: Johnson; Deane; Popova), studies along the lines of classic Cognitive Linguistics have for some time been amended by evidence from cognitive and developmental psychology (e.g., Gibbs and Colston 1995; Gibbs and Berg 2002; Gibbs, *this volume*; Mandler 1992, 1996, 2000, 2004, *this volume*), as well as from computer science (for surveys, cf. Lakoff and Johnson 1999: 569-583; Feldman and Narayanan, in press) and the neurosciences (e.g., Deane 1991, 1995; Gallese and Lakoff 2005; *this volume*: Lakoff and Dodge; Rohrer). To these, findings from cognitive anthropology (e.g., Quinn 1991; Shore 1996; Sinha and Jensen de López 2000; Kimmel, *this volume*) have been added for some time, which are now accompanied by work from such newly established smaller fields of enquiry as gesture studies (Cienki, *this volume*) or cognitive rhetoric (e.g., Turner 1991: 99-120; Oakley, *this volume*). While each of these areas of investigation naturally foregrounds distinct facets of the phenomenon, the resulting elaborations of the original conception of image schema should ideally be mutually compatible, or even re-inforcing. We might hope that such accounts would ultimately amount to a set of “converging evidence”. Unfortunately, this collection also testifies to the fact that, in practice, this ideal has not been attained to date.

3. Two long-standing dualisms and the embodiment hypothesis

Some of the more recent disagreements in image schema research may be of a more fundamental kind in that they stem from two broadly contrasting developments of the overarching notion of “embodiment” itself, one located in the broad context of cognitive psychology and the neurosciences, the other in cognitive anthropology and cognitive-cultural linguistics. Originally, the

embodiment hypothesis was intended to overcome the *mind-body dualism* inherent in much of Cartesian scientific and philosophical thinking up to and including “first-generation” cognitive science, by grounding (universal) aspects of the human mind in (universal) aspects of the human body (Johnson 1987; Lakoff and Johnson 1999, 2002; Johnson, *this volume*). In order to back up and explain cognitive-linguistic findings, research in psycholinguistics, experimental and developmental psychology as well as cognitive neuro-science has sought to spell out earlier embodiment postulations in psychological terms (Gibbs et al. 1994; Gibbs and Colston 1995; Gibbs and Berg 2002; Gibbs, *this volume*; Mandler 1992, 1996, 2000, 2004, *this volume*) or in neuro-biological and neuro-computational terms (Gallese and Lakoff 2005; Dodge and Lakoff, *this volume*; Feldman and Narayanan, in press) – focussing on the human brain and the kind of processing/computing it affords. Accordingly, research in this direction has concentrated on general properties of human cognition, among them the “primitive” image schemas listed in the standard inventories (*this volume*: Grady; Lakoff and Dodge; Gibbs; Mandler; Rohrer; Dewell; Cienki; Popova).

It has been critically noted that this line of research – especially if relying on “strong neural embodiment” (Sinha 2002: 274) – has maintained a “universalistic” conception of the mind and tended to obscure the socio-cultural dimensions of human cognition. Another long-standing *dualism*, namely that *between individual and social/cultural cognition*, has thus been left intact (cf. Sinha and Jensen de López 2000; Kimmel, *this volume*). To make up for this, proponents of the “cultural-cognition” approach to the embodiment hypothesis have striven to understand language and cognition as part of the *triad body-mind-culture*, and “extended” the notion of embodiment – with its original focus on bodily (as opposed to social) experience – by “situating” cognition in socio-culturally determined contexts. They have thus naturally come to stress culture-specificity and linguistic relativity (cf., e.g., Zlatev 1997; Sinha 2002). Research in this framework has consequently focussed on “situated” instantiations of image schemas and image-schematic “compounds” in real settings (e.g., Shore 1996; Kimmel, *this volume*), as well as on the divergent strategies employed by specific languages to refer to image-schematic dimensions of experience and their consequences for the acquisition of concepts and language (e.g., Bowerman 1996a,b; Sinha and Jensen de López 2000; Beningfield et al., *this volume*).

Though the two strands of embodiment research have so far not been integrated in a unified theory of image schema, proponents of both approaches to the embodiment hypothesis have also stressed that cognitive models and schemas – including image schemas – can be seen both as expressions of universal principles at work in individual cognition *and* as properties of an underlying, “institutionalized” cultural “world view” (cf., e.g., Shore 1996; Palmer 1996). Consequently, a “naturalistic, biologically informed approach to human cognition” does not necessarily preclude “the recognition of the constitutive role in it of culture” (Sinha 2002: 273), for the general constraints created by shared biology and basic environmental dimensions leave enough room for “extensive cultural variation” (Lakoff and Johnson 2002: 251). It is thus worth noting that some of the more intensely debated cross-linguistic evidence, such as the Zapotec concept corresponding to what is split up into ‘in’ and ‘under’ in languages like Danish and English (Sinha and Jensen de López 2000), or the distinction between ‘tight’ and ‘loose’ fit made by the Korean verb system is revisited by various authors in this edition – both of a “universalistic” and more “relativistic” orientation (*this volume*: Dodge and Lakoff; Mandler; Kimmel; Zlatev; Beningfield et al., Dewell).

4. Preview of this edition

In the following, I will very briefly remark on the five sections of this edition in order to complement the separate chapter abstracts and cross-references provided by the authors themselves with a general survey of the edition.

The chapters in PART 1 (ISSUES IN IMAGE SCHEMA THEORY) deal with major theoretical issues concerning philosophical and linguistic significance of (“primitive”) image schemas as “structures of perceiving and doing” which “can be recruited to structure abstract concepts and to carry out inferences about abstract domains” (Johnson, *this volume*). In particular, the main issues discussed relate to the identification and resolution of definitional inconsistencies (Grady, *this volume*), the relevance of neurobiological information to a truly cognitive approach to language and thought (Dodge and Lakoff, *this volume*), as well as – from a more general meta-theoretical perspective – to image-schema theory as an important part of the experiential framework developed by Cognitive Semantics as a whole (Clausner, *this volume*). A theme reverberating throughout the entire volume (*this volume*: Gibbs; Kimmel) is set up by Mark Johnson’s concerns that

image schemas should not be conceived of as “fleshless skeletons” cut off from “the felt qualities of our experience, understanding and thought”.

The chapters in PART 2 (IMAGE SCHEMAS IN MIND AND BRAIN) bring together much of the psychological and neurological evidence currently available for image schemas as structures between perception and conception. In accordance with growing consensus in the cognitive sciences about the “embodied” roots of conception in perception, several chapters are guided by the assumption that both imagination and (language) understanding are based to some extent on the “mental simulation” of sensory-motor experiences, the outlines of which are captured by image schemas (*this volume*: Gibbs; Rohrer; Dodge and Lakoff). These simulations are hypothesized to underlie many aspects of on-line cognition and language processing (Gibbs: *this volume*), and even to share brain circuitry with the sensory-motor system (Galese and Lakoff 2005; *this volume*: Rohrer; Dodge and Lakoff), though there is some disagreement about the (in parts still highly speculative) specifics of this. Another major theme of this section pertains to image-schema formation itself, which Jean Mandler (*this volume*) discusses in great detail in terms of the attention-driven, innately given process she calls “perceptual meaning analysis”, but for which other authors offer competing explanations in terms of self-organizing dynamic systems (Gibbs, *this volume*) or in terms of the properties of the brain circuitry involved (Dodge and Lakoff, *this volume*).

As research on spatial cognition and language has constituted one of the sources of image schema theory as well as one of its most productive areas of application, PART 3 (IMAGE SCHEMAS IN SPATIAL COGNITION AND LANGUAGE) of this edition offers two extensive papers on the conceptualization and linguistic expression of spatial relations. Leonard Talmy’s (1983) work is generally acknowledged to be one of the main inspirations of image-schema theory (cf. Lakoff 1987: 459-461; Dodge and Lakoff, *this volume*), the section thus includes a chapter in which he continues to investigate the distinctions in the conceptualization of space that can generally be made by the closed-class elements of the spoken (vs. signed) languages around the world. Paul Deane’s chapter in this section revisits the long-standing and still unresolved issue of the semantic unity of highly polysemous spatial-relations terms and presents a detailed, neuro-psychologically informed, image-based analysis of *over* – the one spatial-relations term that has, together with some of its equivalents in other Indo-European languages, enjoyed the vastest amount of attention since the first application of the notion of image schema to the analysis of prepositional polysemy (cf., e.g., Brug-

man [1981] 1988; Lakoff 1987: 416-461; Geeraerts 1992; Dewell 1994; Kreitzer 1997; Tyler and Evans 2001).

PART 4 (IMAGE SCHEMAS AND BEYOND) collects papers that expand or even reject the notion of image schema as currently conceived, whereby it is noteworthy that all authors in this section share a commitment to “extended”, or “situated” embodiment (cf. Zlatev 1997; Sinha 2002). Michael Kimmel’s contribution reviews a large range of evidence from cognitive anthropology supporting “extended” notions of embodiment in general and of image schema in particular. He suggests that image schema theory has hitherto neglected the study of “situated” as well as “compound” image schemas, both of which are tied to culture-specific, affect-laden experience defined by body practices, artefact use and specific languages. The remaining two chapters in PART IV (*this volume*: Zlatev; Beningfield et al.) comment on image schema theory via comparisons with two alternative conceptions, namely Jordan Zlatev’s “mimetic schema”, and Claude Vandeloise’s notion of “Complex Primitive” (Beningfield et al., *this volume*). Hopefully, these may help to sharpen the awareness and discussion of a potential blind spot within image schema theory itself which might stem from the “universalist bias” in the standard account (cf. Kimmel, *this volume*) and which relates to the way in which specific languages force universal preconceptual structures into culturally determined, consciously accessible, public and conventional concepts.

The chapters in PART 5 (NEW CASE STUDIES ON IMAGE SCHEMAS), finally, present four highly diverse and detailed case studies (*this volume*: Dewell, Popova, Cienki, Oakley), all to some extent explorative, rather than merely applicative, and all with theoretical implications that reach well beyond their immediate subjects of investigation. Robert Dewell performs an in-depth “informal phenomenological analysis” (Johnson, *this volume*) of developmentally early CONTAINMENT patterns from which he concludes that image schemas are highly dynamic conceptual patterns that exist only in the multitude of their transformations. Yanna Popova’s case study on synaesthetic adjective-noun combination in present-day British English addresses the cross-modal character of image schemas from a new angle, and especially deals with the role of non-visual perceptual information in image schemas. Utilizing existing knowledge about the lower perceptual modalities, touch and taste, and about the cross-modal mappings in verbal synaesthesia, it aims to establish the perceptual origin of the SCALE schema in the lower modalities, which are argued to contrast with higher ones, sound and vision, in being inherently graded and normative. Alan Cienki’s chapter

reports on experiments which constitute the first attempt to bring together image schema research and gesture studies, both in order to understand the role of gestures in “thinking for speaking” and to exploit gestures as a new source of empirical evidence for image schemas. Todd Oakley, finally, presents a fine-grained force-dynamic analysis of two very different, but highly influential political speeches from the history and present of the United States. In the spirit of Mark Turner’s (1991: 99-120) work on the force-dynamic image schemas motivating many metaphors of everyday as well as rhetoricians’ conceptions of argumentation, he intends to advance the (re-) establishment of rhetoric as one of the cognitive sciences.

5. Resumé

My preceding remarks may have underemphasized that, despite of all theoretical and practical complications, the concept of image schema has without doubt proved extremely fruitful in the past two decades and inspired research in a broad variety of fields both inside and outside linguistics. Still, the highly diverse positions to be found in current image-schema theory, many of which are documented in this edition, also indicate strongly that renewed discussion within Cognitive Linguistics is necessary to ensure the theoretical unity of the notion and to maintain its value as a central and foundational concept of Cognitive Semantics, as the field is progressing towards a deeper understanding of the embodied roots of cognition and language.

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