Verbs of Motion and Language Use:
Reflections on Research Frameworks

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This chapter deals with certain theoretical issues pertaining to verbs of motion and their role in mediating the relationship between speakers' conceptualization and expression of spatial knowledge in general, and motion in particular. Some of the frequently used research frameworks to study this relationship in recent years are Leonard Talmy's typology of lexicalization patterns, and Dan Slobin's proposal of 'Thinking for Speaking'. These frameworks have offered substantial empirical support to the idea that languages constrain in different ways, speakers' verbalization of non-linguistic conceptual knowledge about situations involving motion. This research has truly energized the field of cognitive linguistics by promoting debates on potential implications of the results for gaining a better understanding of the cross-linguistic differences in first language acquisition, second language learning / use, discourse organization in normal and neurologically impaired individuals. However, they have also raised some troublesome questions and made a case for rethinking some of the concepts, methodologies and even the frameworks themselves. Recent research on embodied cognition, co-verbal gestures, bi/multilingualism have contributed to some of this rethinking. The main purpose of this chapter is to undertake a critical review of select research in this field in order to underscore the need for new research frameworks for extending this research to multilingual contexts.

I. Verbs of Motion: A typological Framework

The semantic domain of space encompasses sub-domains of shape, motion and location that interact with each other in complex ways across different languages. Compared to the static information associated with object location, motion by involving the extra temporal dimension brings with it the dynamic aspect of manner and path which are said to be segregated at the neural level (see Wu, Morganti and Chatterjee 2008). Verbs of motion rank high in many languages of the world. There is a talk of 'nuclear verbs' rooted in human principles of categorization that tend to have templatic (universal) meanings across cultures. For instance, it has been demonstrated that verbs belonging to motion, production and perception domains such as, 'go', 'give', 'take', 'make', 'see' and 'say' among others are the most frequent verbs in almost all the European languages and some non-European languages as well (see Viberg, 1993, 2002 for a detailed discussion on the role of nuclear verbs in first and second language acquisition). As opposed to such nuclear verbs with relatively fixed meanings, a second group of non-templatic verbs are said to exist that are subject to a greater influence of world knowledge and context compared to the former type. Tenny (1995) made

a three-way distinction among these non-templatic motion verbs: (1) Manner of motion verbs (e.g. run) that rely on the notion of distance, (2) Incremental theme verbs (e.g. eat) that rely on volume, and (3) Change of state verbs (e.g. wash) that rely on the properties of the object with which they are associated.

Manner of motion verbs in turn are classified into self directed / reflexive motion verbs in which motion takes place at a given location (e.g. someone running on a treadmill) as opposed to telic verbs, those involving displacement from the original location towards a specific goal (e.g. someone running into a room). The telic verbs also referred to as translocative verbs incorporate the semantic notion of PATH with the help of morpho-syntactic devices. Some of the manner of motion verbs may also interact with posture verbs such as 'sit', 'stand', 'lie', 'squat', 'kneel' etc. to describe the basic location of entities, both animate and inanimate. It was also noted that some languages (e.g. Dutch and Swedish) are more concerned with location than others (e.g. English and German) even though all these four languages belong to the same Germanic language family (Lemmens 2005). The interrelation between motion and location is central to all the causative (placement) verbs in which an agent moves an entity from one position or location to another (e.g. 'The girl rolled the ball across the floor').

Talmy's typological framework

Talmy (1985) used the term 'lexicalization' to refer to situations where a particular meaning component is in regular association with a particular morpheme. A macro event involving motion according to Talmy has at least six different components: (1) the FIGURE or the moving object (2) the GROUND or the entity that the FIGURE is moving towards (3) the PATH or the trajectory followed by the FIGURE, (4) MOTION, the presence of motion per se (5) MANNER or the way in which the MOTION is performed (6) the CAUSE which refers to the agent responsible for originating the motion. Talmy considers the first four components as obligatory core schema, and components (5) and (6) as optional supporting relations. He offered a bipartite typology of *Satellite-Framed languages* (e.g. English, Dutch, German, Russian and Mandarin) in which the semantic components, MOTION and MANNER are conflated in the main verb (resulting in motion verbs such as run, fly etc) and PATH is expressed in verb particles or what he called, 'satellites' such as 'in', 'out', 'down' etc. which lie outside the main verb. In the second type termed *Verb Framed languages* such as French, Spanish, Japanese, Turkish and Hebrew on the other hand, the main verb encodes

PATH (resulting in path verbs such as 'exit', 'ascend', 'descend' etc) and MANNER is expressed in a subordinate clause, if it is foregrounded in a particular discourse context, if not, it is omitted altogether. Subsequently, Talmy (2000) noted that an implicational relation exists among the components of motion event such that if PATH is encoded in the verb, all other components of the core schema will also be encoded in the verb; if one supporting relation such as MANNER is encoded in the main verb then the other supporting relation, viz., CAUSE will pattern similarly.

Slobin (1996) developed a methodology for determining which language belongs to which typology using his by now well-known 'Frog stories', word-less picture books using which researchers around the world have collected oral and written narratives and examined cross-linguistic lexicalization patterns. The characteristic features of Satellite Framed languages (SF languages henceforth) and those of Verb Framed languages (VF languages henceforth) are summarized in Table – 2 below:

Language Type	**Preferred means of expression**	**Examples of Granularity in event descriptions**	**Example Languages**
Verb Framed	PATH by finite verb with MANNER syntactically subordinated	The frog *exited* the jar, *passed* through the window and *entered* the woods	Spanish, French, Italian, Turkish, Hebrew, Japanese, Korean
Satellite Framed	MANNER in the main verb, PATH outside the verb in prepositions, post-positions, verb affixes, particles etc	The frog *crawled* out of the jar and through the window into the woods	English, German, Dutch, Russian, Mandarin, Finnish

Note: VF languages use PATH verbs such as 'exited', 'passed' and 'entered' in different clauses, whereas, SF languages use one MANNER verb such as 'crawled' and several PATH satellites such as 'out of', 'through', 'into'

Table-1: Some of the characteristic features of VF and SF languages

To account for serial verb languages such as Thai, Slobin (2004) proposed a third type called 'equipollently-framed' languages in which both MANNER and PATH are expressed through similar morpho-syntactic devices (see Zlatev and Yang Klang 2004 and Talmy 2008 for a more elaborate discussion on this third type).

During the past two decades or so, Talmy's typology dealing with linguistic parsing of space, and Slobin's 'thinking-for-speaking' hypothesis have attracted the attention of researchers attempting to account for cross-linguistic differences in acquisition, representation and processing of motion events in both first and second languages. It is not possible to review or even summarize the findings of all the published research on this topic in the space of this chapter. Instead, I will describe briefly some significant findings and recent debates pertaining to these findings.

Thinking-for-Speaking

Slobin's extension of Talmy's typology to the study lexicalization patterns in different instances of language use, both oral and written (e.g. discourse framing in oral narratives in children and adults, novels, translations etc) led him to propose this notion. Slobin (1996:76) stated, "Thinking for speaking is a special form of thought that is mobilized for communication…we encounter the contents of the mind in a special way when they are being accessed for use. That is, the activity of thinking takes on a particular quality when it is employed in the activity of speaking…thinking for speaking involves picking those characteristics of objects and events that (a) fit the conceptualization of the event (b) are readily codable in the language. I propose that in acquiring a native language, the child learns particular ways of thinking for speaking". This is best illustrated through the following data based on a single motion event, excerpted from Slobin (2004):

Motion event: An owl flies out of a hole in the tree in one of the Frog Stories.

English glosses for oral narration of this event by speakers from VF and SF languages cited below illustrate the preference for using PATH verbs in VF languages (marking a change of state or boundary crossing) and MANNER verbs in SF languages:

VF Languages

a. Spanish *exits* an owl

b. French from the hole of the tree *exits* an owl

c. Italian from that tree *exits* an owl

d. Turkish from there an owl *exits*

e. Hebrew *Exits* from inside the hole owl

SF Languages

a. English An owl *popped* out

b. German because there an owl suddenly out *flaps*

c. Dutch because there an owl out *flies*

d. Russian There out-*jumped* owl

e. Mandarin *fly*-out one owl

An examination of longer utterances revealed that speakers of SF languages tend to break up motion event into a large number of components based on narrative habits of compacting several PATH components in a single clause. By contrast, speakers of VF languages use a narrative style that makes more sparing use of individual motion verbs to encode PATH components; they use a series of separate clauses containing several path verbs. This initial focus on verbs led researchers to examine the structure of verbal lexicons of different languages. To illustrate this point with some examples, while English makes a distinction among manner verbs such as creep, glide, slide, slip, slither etc., Spanish has just one term for depicting all these actions, viz., '*escabullirse*'. When a motion verb such as 'move' is realized as *slide and pull* it indicates conflation of its semantic components, MANNER (a way of moving) and CAUSE (action of an agent) respectively. When the semantic component foregrounded is speed, the verb 'move' may be encoded as *run, stroll, saunter* etc in English. Actions involving hand alone are expressed in English using many motion verbs such as grasp, grab, hold, seize, pull, push and so on. Other languages may incorporate other semantic details. For instance, in Telugu, if the pulling is done by a hand, the verb *laagu* is used, if the pulling involves a heavy object which is in contact with the floor, the verb *iiDcu* is used; if one pulls suddenly with force, the verb *gunju* is used and all these different forms of pulling involve a human agent. The Tamil verbs *tallu* and *illu* are said to correspond to the English push and pull respectively except that they refer to sudden action and not a smooth continuous force implied in English verbs. In order to express smooth continuous force in Tamil, one has to add a directional suffix. Turning to the path component of motion, in English sentences, 'he ran **from** the forest'; 'he ran **towards** the forest'; 'he ran **through** the forest' the path words (in bold face) are specifying the source or the intermediate reference points of the motion event. In some of the VF languages, researchers noted that both source and goal components cannot be expressed by conflating MANNER and MOTION followed by PATH in a SATELLITE in the same clause (but see Narasimhan 2003 and Khokhlova

2009 for discussion on Hindi data). This constraint may have something to do with the relation between the FIGURE (animate or inanimate) and MANNER of motion (e.g. flying). While English accepts the construction 'The man flew to New York' with a metaphorical extension of the verb 'fly', some other languages may not allow such constructions.

Slobin (2004) observed that instead of dichotomizing languages into VF or SF languages, it is better to examine how manner salient each language is, for every language will surely have some MANNER and some PATH verbs or at least they do make use of different morpho-syntactic devices to encode manner (see Narasimhan 2003 for a discussion based on Hindi and Slobin 2006 for examples of ideophones, posture verbs etc. available in some VF languages).

Researchers who videotaped oral narratives observed that conflating MANNER and PATH components is achieved even by VF language users with the help of co-speech gestures (Ozyurek and Ozcaliskan 2000) and that children's linguistic representations undergo reorganization as they try to gauge how to weigh semantic components in a motion event, and in which modality to express them. More recently, Slobin and his coworkers (2008) turned their attention to encoding of PATH information by children using placement verbs (such as 'put') across four different SF languages (English, German, Russian, and Finnish) and four VF languages (Spanish, Hindi, Turkish, and Tzeltal). They argued that if lexicalization does have an impact on non-verbal conceptualization in describing motion involved in causing an inanimate object to move to a different place from its original position, then children belonging to these typologically different languages should show differences in their use of placement verbs. They noted that children acquiring VF languages used verbs focusing on the action of putting whereas children acquiring SF languages tended to use directional locative markers by paying greater attention to relational elements of the placement scenes, elements lying outside the verb. However, they have observed interesting intra-typological variation. Specifically, Russian and Finnish children paid more attention to action in placement utterances (encoded by the verb) than children from English and German backgrounds. Among the VF languages, Hindi and Turkish children explicitly encoded the GOAL (in the case markers or spatial nominals) more often than children acquiring Spanish. Tzeltal speaking children unlike Hindi children produced verbs that conflated FIGURE and GOAL components. These cross-linguistic intra-typological differences were attributed to varying patterns of ellipsis in discourse framing, perceptual salience of PATH encoding relational

markers, and properties of child directed speech in the language-learning environment.

Extension of the concept and methodologies associated with 'thinking for speaking' hypothesis in the second language domain raised more insights and some puzzles. Cadierno (2004) collected data from Danish learners of Spanish and native Spanish speakers to examine whether the patterns of 'thinking for speaking associated with L1 (Danish, a SF language) would influence L2 (Spanish, a VF language) with reference to event conflation, that is encoding both source and goal components in the same clause (is allowed in Danish but not Spanish). She noted that while Danish learners of Spanish did exhibit a high degree of complexity and elaboration of PATH of motion than Spanish native speakers (presumably due to the influence of their native language), they did not exhibit event conflation in their Spanish. In her more recent publication, Cadierno (2008) presented more elaborate results based on both speech and gestures in L1 and L2 contexts. Stam (2007) studied how PATH is expressed linguistically and gesturally in Spanish (VF language) and English (SF language). His participants were L2 English learners of Spanish and native English speakers. His results offered support to the 'thinking-for-speaking' hypothesis in that how PATH is expressed linguistically and gesturally is influenced by (1) the typology of the language in use (2) discourse itself (3) individual speaker's developing thought. For a detailed discussion speech and gesture analysis in the context of second language learning situations see Stam (2008) and Gullberg (2010).

The focus of all the studies mentioned thus far has been on linguistic encoding of stored non-linguistic conceptualization of motion related knowledge. If MANNER was indeed the most salient feature for SF language speakers, in a non-linguistic task of judging similarity of motion events (without verbalizing the motion event), VF language speakers should make fewer same manner judgments. Bohnemeyer, Eisenbeiss and Narasimhan (2007) obtained such judgments from 17 different typologically and genetically diverse language speakers (12 per each language). There were 12 VF languages including Hindi; four SF languages and one serial verb language (Lao). They developed a new methodology involving animated smiling tomato like FIGURE which was capable of jumping, rolling, spinning, sliding up or down a ramp with or without crossing boundaries of GROUND objects. Only four of the 12 VF language speakers made fewer same-manner categorization judgments after watching the animated clips. The authors felt that Talmy's bipartite typology was not sufficient to predict categorization preferences and that several socio-cultural factors such as literacy and

urbanization may have some influence on the performance of non-linguistic categorization judgments of motion events. Note that it was only in this study that the participants were involved in a non-linguistic processing of motion events; they looked at a sample event (X) and decided which one of the comparison events (A or B) is the same as X.

II. Critical Perspectives on Motion Verb Typology

The critical perspectives presented in this section are drawn from a wide variety of studies mentioned below. For want of space, I have merely summarized the arguments that are directly relevant to the critique of the motion verb typology, and left out other interesting findings.

Limitation of Frog stories

Naigles, Eisenberg, Kako, Highter and McGraw (1998) drawing on their study of verb use in English and Spanish pointed out that 'Frog stories' have some limitations as tools for elicitation of data in research involving motion verbs: (1) they provide static pictures of motion requiring participants to infer motion (2) motion events vary across a number of parameters such as agentivity and direction which are not controlled sufficiently by the researchers (3) the narrative context of the story may impose constraints which may affect the way the typologies are manifested.

Role of dialects

One of the earliest discontents with research on motion verb typology has been with the use of homogenized notion of 'language'. Berthele (2004) used Frog stories to collect oral narratives from 10 Standard High German (SHG), 8 Muotathal (MU) dialect of German spoken in central Switzerland and 10 French speakers. Recall German has been classified as a SF language and French a VF language. It was noted that MU dialect of German was extremely poor in the use of MANNER verbs. In fact, it was reported that French speakers used more MANNER verbs than speakers of MU dialect of German. However, MU dialect speakers exhibited a number of satellites along with prepositional phrases just like any SF language users. While interpreting these and other results of this study, Berthele commented that diglossia in German speaking Switzerland imposes certain functional constraints. Specifically, it was pointed out that MU dialect was more oral than SHG and that the PATH and place predicates were syntactically more elaborate in MU than in SHG making MU

speakers to pay more attention to the association function in the motion event that relates FIGURE to the GROUND with the help of prepositions.

Conceptual and definitional issues

After discussing how Thai, a serial verb language possesses characteristics of VF languages in some respect (e.g. PATH expressed by main verb), SF languages in other respects (e.g. MANNER expressed by main verb) and in some other respects resembles neither VF nor SF, Zlatev, Blomberg and David (2006) argued that the troublesome part of Talmian typology is not only empirical, but that there are several unresolved conceptual and definitional issues. In particular, they stated that the major semantic components such as PATH, MANNER and MOTION are not defined adequately and that the definition of 'satellite' doesn't work for some languages (such as Bulgarian). Further, the semantics of verb alone is not capable of telling us what type of motion (self-contained, translocational or location shifted etc) is involved in a given motion situation. Zlatev et al (2006) argued that motion situations across languages vary depending upon the type of motion; + /- translocation (self vs. caused motion); + /- boundedness (telic vs. nontelic paths) and frames of reference (viewpoint centered, geocentric or object centered). Other researchers have argued for the need to go beyond English-based definitions and to distinguish between PATH and types of displacement by undertaking corpus based analysis of the language in question.

Impact of the FIGURE

Stephanie Pourcel (2009) commented that the virtual Tomato-like animated figure used by Bohnemeyer et al (2007) was devoid of contextual relevance; that motion conceptualization is not static across events. Instead, it is fundamentally influenced by FIGURE animacy, MANNER force dynamics, PATH telecity, and CAUSE relations. For instance, she pointed out that the default manner for a ball would be rolling or bouncing but that for a human figure would be running or walking; the types of manners contrasted in their triadic stimuli are not fine grained in tasks involved in deciding which of the comparison stimuli is portraying same MANNER or same PATH relative to a third sample stimulus (for example, jump vs. cycle is not as fine grained contrast than hop vs. skip). Pourcel's own research revealed a clear correlation between relative salience of PATH and MANNER and the type of FIGURE across different languages (French, English and Polish).

Looking beyond motion verbs

One of the problems of Talmian typology is the assumption that verb is the only clause obligatory lexical category that can encode either MANNER or PATH. Beavers, Levin and Tham (2009) through their extensive analysis of several languages showed that there are a variety of motion independent resources / processes (morphological, lexical and syntactic) that encode combination of PATH and MANNER across different languages and that cross-linguistic variation among languages is better understood if we looked at the shape of verbal lexicons, processing complexity and the concept of markedness. For instance, MANNER verb and PATH satellites may be the canonical (least marked) option for English, but other lexicalization patterns such as for instance, PATH verb, MANNER adverb or MANNER adverb and PATH adposition may also serve as other options available to speakers of English to use in different discourse contexts. It was also pointed out that besides the familiar PATH, MANNER specifications, a motion verb might also encode properties of the FIGURE (see Son and Svenonius 2008 for discussion on other parameters of crosslinguistic variation in relation to Indonesian, Hebrew and Malayalam languages).

Task and Memory issues

Papafragou and Selimis (2010) reported a categorization experiment using triadic animated action stimuli in an experiment involving event categorization by English (SF language) and Greek (VF language) users, both adults and children. The verb asymmetry (English preferring more same-MANNER choices and Greek more same-PATH choices) disappeared when the display had all the three events (one sample and two comparison events were made continuous with the help of three laptop computers). That is, in this experiment, event categorization judgments were obtained in the absence of event memory and when this is done, the canonical lexicalization patterns attributed to VF and SF languages more or less disappeared. Papafragou offered a counter to Slobin's observation that in learning a language, children's attention may be guided towards those event categories / relations that are systematically encoded in their native language, what was called the 'saliency hypothesis'. In Contrast, Papagragou's 'under-specification hypothesis' holds that linguistic representations are not isomorphic to non-linguistic conceptual representations. Her research demonstrated that if linguistic labels are available during categorization (of motion events), such labels could be co-opted as a way of solving the categorization task. However, such linguistic effects reflect on-line transient mediating effects of language, a temporary strategy to solve a non-linguistic task and not a permanent reorganization of the underlying cognitive representation of motion.

Embodied Cognition

For some time now researchers have been casting doubts about the assumption that linguistic structures in general, and motion verbs in particular are symbolic amodal representations stored in a module that can never be penetrated by non-linguistic cognition. Within the discipline of cognitive neuroscience, there is a suggestion that execution or observation of actions produced by the mouth, leg and hand activate distinct parts of pre-motor cortex corresponding to those areas, what was termed, semantic somatotopy by Pulvermuller (2001, 2005). This observation prompted researchers to ask whether understanding of motion verbs entail detailed internal simulation of motion guided by perception and action. Bergen and his colleagues (2009) recently described four different experiments on both native and non-native speakers of English which demonstrated that accessing the meanings of action verbs (of which motion verbs are a part) such as 'smile', 'punch, and 'kick' requires language understanders to activate modality specific cognitive representations responsible for performing and perceiving those same actions. In each experiment, it took participants longer to process the meaning of action verbs when comparing them with non-matching actions performed with the same effector than when comparing them with actions using a different effector. They have cited extensive research to support their own conclusion that both motor and perceptual simulation are automatically engaged during language understanding endorsing the embodied perspective that motion based linguistic representations are grounded in bodily experiences.

Maouene et al (2008) based on an action verb-body part associations s obtained for 101 early-learned English verbs argued that body parts (especially hand, leg, mouth) play a metaphoric role in determining the meaning of action verbs. In an fMRI and MEG study changes in motor excitability were exclusively found in the muscles involved in the action described by sentences (see Andres, Olivier, and Badets, 2008). Siakaluk et al (2008) ran two experiments on 35 under graduate students whose native language is English to examine the effects of body object interaction (BOI) that is thought to be high for words such as 'mask' compared to a word like 'ship'. These experiments aimed at assessing semantic categorization (based on ratings of imageability) and semantic lexical decision revealed that sensori-motor information is incorporated in lexical semantic knowledge in that words with more sensori-motor knowledge generate more semantic activation (and therefore are subject to deeper processing) than those with less sensori-motor information.

The relevance of this point to the current topic under discussion is that, there are proposals to

move away from verb taxonomies based on calculation only of syntactic/ semantic valency to what was termed, 'visual valency', a concept developed in the context of designing an intelligent multimedia story telling and interpretation system using 3D animation (see Ma and McKevitt, 2005). While visual valency sometimes overlaps with syntactic or semantic valency, visual modality requires more obligatory roles than grammar or semantics. For instance, in the utterance 'Jane cut the cloth' syntactic and semantic valency is 2 because both obligatorily require specification of subject and object, but it's visual valency score will be 3 because it requires specification of one subject and two objects (cloth and scissor). An inherently directed motion verb such as 'go' to be visualized requires specification of both manner level (walk, run, jump) and may be even troponymy level (limp, stride, trot, swagger etc). The notions, body-object interaction and visual valency of motion verbs seem to push the boundaries of the notion, 'language' into a more sociocultural realm.

Co-verbal gestures

Drawing on earlier theories related to perceptual motor simulation that supposedly underlies embodied language and mental imagery, Hostetter and Alibali (2008) proposed 'Gesture as Simulated Action (GSA) framework' to explain how co-verbal gestures might arise from an embodied cognitive system. Their main arguments are: perception determines potential action, just as action determines what is perceived. The relationship between perception and action is crucial not only for on-line thinking but also for offline thinking about the world. Simulating actions involve neural areas that are also implicated in planning physical actions. Simulating perceptions involves activating neural areas that are involved in perceiving physical objects. Often this activation occurs covertly and is inhibited from realization as an overt motor plan. Other times, this activation is realized as motor output. According to GSA framework, a speaker's propensity to gesture is the product of (1) the amount of simulated action underlying his or her current thinking and (2) his or her current threshold or resistance to allowing this simulated action to be transferred into an overt motor plan and (3) whether the motor system is simultaneously engaged in the motorically complex task of speech production. They cited research that demonstrated that gesture and speech become well integrated semantically and temporally in children's speech just before the onset of two-word speech; that speakers are particularly likely to gesture about information that is newsworthy or crucial to the on-going discourse. In other words, specific discourse contexts can influence gesture threshold. The GSA framework predicts that the form of a particular gesture depends on the communication situation.

Marianne Gullberg (2009) stated that gestures open up a broader view of the mental lexicon, targeting the interface between conceptual, semantic and syntactic aspects of motion events; they offer new possibilities for examining how languages co-exist and interact in bilinguals beyond the level of surface linguistic forms. Being temporally, semantically and pragmatically coordinated with speech, gestures allow us to study how speakers distribute information across modalities depending upon the visibility, interlocutor(s), and topic in a given communication situation. It has been shown that speakers of VF languages can foreground MANNER (not expressed by the verb) by expressing it through gestures (since verbs in these languages are often encoding PATH); speakers of SF languages on the other hand might foreground MANNER in both speech and gesture or background it by expressing PATH in gesture when MANNER is foregrounded in speech…although cross-linguistic evidence for this proposal is somewhat ambiguous as of today. In her reflections on 'future directions' Gulberg (2009:178) raises the questions: " what happens in speech and gesture when a third, fourth and fifth language enters into the equation, and what role does typological distance play?

Gullberg (2010) has argued forcefully that crosslinguistic differences in expression of meanings affect the form of gestures, their temporal alignment with speech, and perhaps also the distribution of information across modalities. She also pointed out that speakers of different languages gesture differently not only for cultural, but also for linguistic reasons. She stressed the need for bilingualism researchers to engage with a view of language in which speech, language and gesture are seen as an interconnected system, a system in which gestures serve both communicative (listener-oriented) and speaker-internal functions. In multilingual contexts where users are engaged dynamically on different linguistic representations belonging to different languages / dialects in different contexts, it is important to understand how those representations are acquired and deployed in real time and what changes they undergo as they master their second or third languages.

Bilingualism: Language Mode

Grosjean (2006) rightly pointed out that most bilinguals or multilingual individuals find themselves in different *language modes* that correspond to points on a monolingual-bilingual mode continuum where the term 'mode' corresponds to a state of activation of the bilingual's languages and language processing mechanisms. At one end of the continuum, bilinguals are in a totally monolingual language mode when interacting only with or listening only to monolinguals of one or other of the languages they know. At the other end of the continuum,

bilinguals are in a bilingual language mode when they are communicating with or listening to other bilinguals who share their two (or more) languages, and where different degrees of language mixing may take place. There can be intermediary positions on this continuum. Since the language mode corresponds to a state of activation of bilingual's languages and language processing mechanisms, the choice of which language to use or when to change, how to mix the codes or even the speed of processing while listening might depend on the language mode in a specific communication situation. In research on bilingualism, Grosjean insists that experimenters should take care to manipulate the 'language mode' the participants are in while collecting the data. One of the ways of doing this is to let them know the language background of the interlocutors / examiners. This notion allows one to look at 'language' in a more dynamic sense besides providing a built-in control in experiments involving individuals who habitually speak two or more languages.

Questions of culture and pragmatics

Talmy's typology and the 'thinking for speaking' proposals resulted in patterning French and Japanese together (both are VF languages) as opposed to English and Dutch (SF languages). Researchers wondered whether this means that linguistic (semantic) typology is orthogonal to culture? Do the 'Thinking for speaking' effects extend beyond the time of speaking / writing to affect long-term memory and therefore visual recall? To address such questions Duffield and Tajima (2010) conducted three different experiments (cause-effect verbalization on seeing motion scenes; picture description and visual recall) in which Chinese, Japanese and English participants took part. The results of all these experiments indicated that the differences in the performance of the language groups were better explained in linguistic than cultural terms. That is, from the point of view of a linguistically motivated notion called Head-parameter, Chinese and English pattern together since they are Head initial languages as opposed to Japanese, which is a Head final language. During language processing, Japanese speakers unlike the other two language groups tend to build up phrase structure from complements and / or modifiers to heads; from semantically and syntactically peripheral elements to the core elements in a bottom-up fashion and hence they are likely to attend to contextual information because their grammar and discourse requires them to mention contextual information ahead of focal information. Whereas, English and Chinese are said to engage in top-down processing in line with the requirements of their grammar and discourse semantics. This is not to say that culture has no role to play in language processing, but in order to examine the effects of culture, it appears that more radical rethinking of concepts and

methodologies is required.

Hanks, Ide and Katagiri (2009) pointed out some of the difficulties in analyzing non-western languages using a metalanguage that is resolutely Western. They asked scholars working in other languages / traditions to draw on analytic concepts from their own languages and native speakers' commonsense perceptions. They argued that since ordinary native speakers use, understand and represent language in a historically situated social context of communication, there is a need to examine cross-linguistic differences by observing all the modalities including gesture and posture, the spatial and perceptual arrangements of interactants, the material setting, instruments and artifacts with which interactants engage, and other ongoing activities concurrent with talk. Their basic argument is that linguistic forms and their contexts of occurrence are intertwined and dynamically define each other. Another way of looking at this proposal is, that there is a need to adopt a broader view of 'language' that requires us to go beyond the linguistic structures such as motion verbs to specific language use contexts as well as co-verbal gestures.

One of the implicit assumptions of a majority of studies reviewed / summarized in this paper is that speakers as they plan to speak about motion events carry with them representations, meanings and dominant lexicalization patterns of their L1. This assumption is reflected in Slobin's statement (1996:89): " Each native language has trained its speakers to pay different kinds of attention to events and experiences when talking about them. This training is carried out in childhood and is exceptionally resistant to restructuring in adult second language acquisition". According to him, speaking in L2 implicates only the dispositions to map forms to preferred patterns of conceptualization for linguistic expression developed in L1. This statement doesn't capture the complexities associated with language learning histories of individuals who learn and use more than two languages for fulfilling different communication needs. We need new frameworks to address the issue of which concepts are transferred from which language to which one in which context; what are some of the late learned associations between languages and L2 conceptualizations; what levels of ultimate attainment can L2 learners reach in "rethinking for speaking" (see Robinson and Ellis 2008 for elaboration of this point) and which semantic components are affected by gestures. Basically, published research on this topic has clearly demonstrated that in preparing the content for verbalization of motion events, speakers are guided by at least three different factors: linguistic, cultural, and contextual. Much of the focus has been on linguistic factors whereas cultural factors have

received somewhat less focus. It is my intention to stress the fact that in multilingual situations, there is a need to pay special attention to the discourse contexts and to co-verbal gestures more than linguistic or cultural issues alone. In the next section, I will merely cite an example to support this view and share preliminary ideas that could contribute to developing a new research framework.

III. Towards a framework for research in multilingual contexts

In the multilingual context of India in general, and in Hyderabad in particular, it is common to learn one or two Indian languages through socialization prior to acquiring and / or using English after joining the school. In other words, the pattern of multilingualism is both simultaneous and sequential. Annamalai (2001) argues that Indian multilingualism is motivated and sustained by the primary and secondary socialization processes at home and work-place, and that only a quarter of the multilingualism is contributed by formal learning in schools. People use one language for ethnic identity, another for business transaction, another for official dealings and yet another for entertainment, rituals and so on. Linguistic convergence that reduces the distance between the languages in contact; the rules getting transferred from one language to another is one of the characteristic features of 'neighbourhood multilingualism' typical of different parts of India.

The language of minority group (for e.g. Dakhini, a variety of Hindi spoken in Hyderabad) living in the midst of a majority group (for e.g. Telugu) in Hyderabad serves as an illustrative case for linguistic convergence. To elaborate, structurally, Telugu and Dakkhini share many morpho-syntactic features in view of the close contact between these two languages for over four centuries in Hyderabad. In fact linguistic scholars have shown that syntactically Dakhini is closer to Telugu than Hindi (Kachru 1986; Subbarao and Arora 2009). However, they use totally divergent writing systems. The Telugu spoken in Hyderabad itself is a dialect (of Telangana region) that is somewhat different from the so-called standard Telugu that appears in print media, Television and textbooks. The users of Telangana dialect of Telugu use for writing purposes the so-called standard variety. Thus different varieties undergo functional specialization depending on their use, support in the public domain, script related matters etc. Therefore, the term 'language use' has more complexity associated with it than the received notion.

In a recent questionnaire based study of language use patterns among Telugu, Hindi,

Dakkhini and English users in Hyderabad Vasanta, Suvarna, Sireesha and Bapi Raju (2010) noted that (1)Telugu / Dakkhini seems to be the choice of language used extensively in the intimate domain by speakers who use those languages as their L1 (2) Both groups use Telugu /Dakkhini along with English in the informal and formal domains more than in the intimate domain (3) In both groups, use of English increases as they move from intimate to informal and formal domains (4) There is a tendency to use all three languages more in the informal domain than in the intimate or formal domain. Specifically, a greater degree of trilingualism seem to exist among Dakkhini speakers compared to Telugu speakers (5) A considerable number of respondents rated their proficiency as being 'excellent' in relation to the four skills in each of the languages, Telugu, Hindi, Dakkhini and English, and yet their choice of language use varied across different domains suggesting that self-rating of language proficiency alone may not be a good predictor of language use patterns.

Drawing on the existing research that has classified English as SF language and Hindi as a VF language, it is not possible to predict what kinds of patterns of 'thinking for speaking' prevail in Telugu-Dakkhini- Hindi and English language users. It is difficult to establish which one of these 'languages' / 'dialects' dominate a given user's thinking at a given moment of speaking. The choice and use of a language might be subject to the influence of the topic and interlocutors more than the mentally stored linguistic structures and concepts associated with one of many languages they habitually use. If one were to extend Grosjean's notion of 'bilingual mode' to the language using situations in Hyderabad, one might find patterns such as the one depicted in Figure – 1 below:

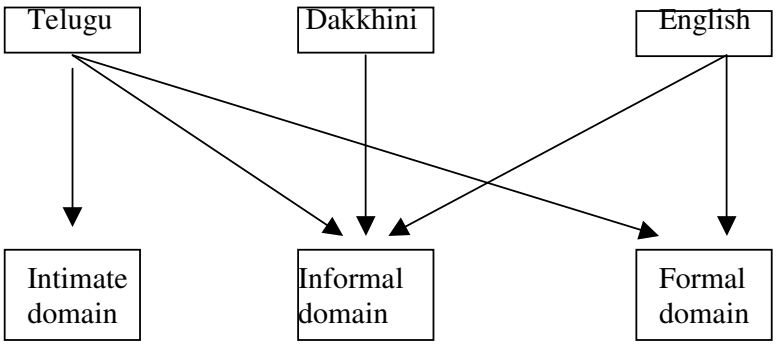

Figure –1: A hypothetical continuum of monolingualism to bi or trilingualism as a function of domain of language use for Telugu speakers

To comment on the figure above, it is in the informal domain (communication situations involving friends, neighbourhood, entertainment) that maximum mixing of languages takes place in the context of multilingualism in Hyderabad. In the intimate domain (home), native languages (in this case, Telugu) might dominate, whereas, in the Formal domain (with communication situations in the arenas of education, media, administration, workplace etc) Telugu and English tend to co-exist. If language typology (VF vs. SF) is indeed capable of influencing on-line thinking for speaking, then significant performance differences should result depending on the mix of particular languages (including co-verbal gestures) as a function of the domain of language use. One of the challenges would be to decide the nature of the 'texts' that are deemed appropriate in different domains. Indian language equivalents of English motion verbs or adapted versions of 'Frog stories' may not serve the best purpose. Language-specific goal directed motion events might have to be developed that depict discourse situations appropriate to each domain. Words with high Body Object Interaction (BOI) and a set of low BOI words referring to the Figure-Ground relations must be identified for the purposes of designing constructions corresponding to motion events. Attempts will have to be made to obtain information about the frequency, lexical density and such other psycholinguistic variables from existing corpora on structures filling the source / goal slots in motion events. Both linguistic description, non-linguistic categorization / visual recall tasks will have to be designed afresh for the purposes of data collection. One of the biggest challenges for the proposed research in the Indian context is to decide what gesture dimensions are relevant --- forms, meanings, function, timing, context, use etc. for each of the languages. Attempts will have to be made to determine preferential usage patterns in relation to the Indian languages and use those already determined for English for comparison purposes. Depending on the kind of linguistic data elicited, the rate of gesture production per a given linguistic unit may also have to be established empirically. More thinking and experimenting is required to turn these disjointed ideas into a concrete research framework for studying multilingual individuals and the strategies they use in rethinking for speaking / signing /writing their languages.

Acknowledgments: Preparation of this chapter was made possible by a grant from the Department of Science and Technology, Government of India as part of a larger research program in cognitive science during the 11th plan. I am grateful to S. Bapi Raju, Alladi Suvarna, Jigar Patel, Y. Viswanatha Naidu and J. Sireesha, members of the Spatial Semantics research group in Hyderabad for the discussions in the group meetings which helped me prepare an earlier draft of this chapter presented at the International conference on Language and Cognition interface held at the Centre for Behavioural and Cognitive Sciences, University of Allahabad during December 7-9, 2009.

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