Rethinking for Second Language Speaking

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ABSTRACT

Slobin's (1996) *thinking for speaking* hypothesis has been recently adopted by second language researchers as a valuable lens from which to examine the complexities of possible conceptual restructuring during interlanguage development. This paper reviews a sample of studies analyzing the linguistic and conceptual patterns observed in second language learners while using their respective target languages. Discussions focus on issues central to second language acquisition and the understanding of interlanguage from a meaning perspective.

INTRODUCTION

The question of whether thought can be influenced by language has motivated a significant amount of theoretical and empirical work from several research disciplines. Most of such analyses have focused on first language acquisition and use (cf. Gentner & Goldin-Meadow, 2003). Studies have identified differences between languages, not only in terms of their linguistic structures, but also with regards to the conceptual representations that they encode (cf. Niemeier & Dirven, 2000). Stemming from the latter, a growing body of work regarding the relationship between language and conceptualization in second language acquisition (SLA) has taken form in recent years (e.g., Jarvis & Pavlenko, 2008; Odlin, 1998, 2005). One of the approaches through which researchers have gained insights into the potential influence language may have on cognition in second language (L2) users is that of Slobin's (1996) *thinking for speaking* hypothesis (henceforth, TFS). As a lens initially brought out to examine the interaction of thought and first language use, this hypothesis broadly assumes that the linguistic units available in a language would guide how speakers think about certain domains of experience during the process of interpreting or formulating verbal messages. In other words, preferred ways of syntactic and lexical use or patterns in a language serve as filters through which semantic domains, such as motion, space, and temporality are referred to. Some languages may differ greatly in terms of these patterns, whereas others may be typologically closer. If languages represent differences in cognition among speakers, what happens to the minds and conceptualizations of people who know more than one language? Interactions between two languages (or more) shape what has been termed *interlanguage*, and research into the meanings learners try to convey while using an L2 is fundamental toward understanding interlanguage

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semantics (Selinker, 2011). In order to access interlanguage semantics, research must look into situations or contexts where learners rely on their linguistic resources to express what and how they think, as well as to understand what and how native speakers of the L2 think.

SLA research is not only concerned with how interlanguages are composed, but also how they may develop. Slobin (1996) hypothesized that the linguistic and conceptual patterns of an L1 are so entrenched in the language user's mind that it would be difficult for an L2 to influence and eventually restructure them. This relates to what is known as *interlanguage fossilization* (Selinker, 1972), which acknowledges that there are certain linguistic resources that learners of particular L1s may persistently continue to use in their interlanguages, although they may deviate from how native speakers of the L2 may use them. Such persistent uses stem from an L1-relitivized mind (Han, 2013), thus resisting change or restructuring despite adequate motivation to learn, rich exposure to L2 input, and abundant opportunities for communicative practice. Kellerman (1995) proposed the term *transfer to nowhere* for cases when learners use L2 constructions to express L1 meanings. These would be cases in which the L2 has not influenced a learner's way of thinking. However, cases where learners' choices of L2 constructions may in fact reflect L2 thinking can also occur, as well as cases where learners seem to combine L1 and L2 conceptualizations through particular selections of L2 structures, as will be seen in the studies reviewed here. The TFS approach can provide researchers with details about which resources of the L1 seem to be more resistant to change when verbalizing in the L2, and which are more vulnerable to restructuring (Han, 2013).

The present paper focuses on recent studies involving adult L2 users within the TFS framework. For the purposes of this paper, the TFS framework will be used not just for speaking, but also for writing, reading, listening, gesturing, and even translating. Guiding the review are questions relating to the directions of crosslinguistic influence, and the types of conceptual representations encoded in participants' interlanguages. The question of which components of learners' L1s may be more vulnerable to restructuring and which are more resistant will also be discussed. Special attention is paid to the research methods employed, participant variables (e.g., levels of L2 knowledge, instructed and/or naturalistic learning conditions), and the types of data revealing TFS phenomena. The section below briefly describes how TFS has been conceptualized in SLA research, followed by a review of empirical studies focusing on motion events, temporal and aspectual perspective-taking, and spatial scenes. Finally, a general discussion of the findings will be offered as well as suggestions for further research.

REVIEW OF THE LITERATURE

TFS in SLA

Unlike linguistic determinism that views language as *governing* how we perceive reality in general, Slobin (e.g., 1996, 2003, 2006, 2008) theorizes along the lines of linguistic relativism by positing that language *influences* cognition. The influence that language would have on thinking, according to Slobin (1996), only occurs online, that is, during the process of producing or receiving verbal information. Processing and attending to available linguistic units would imply selectively attending to the conceptual units that they encode. Hence, the linguistic units available in a language would guide speakers' conceptualization of a situation. Domains of

experience, such as temporality, space, and motion, can potentially be universally perceived by sensory-motor capacities. But, since the lexical and syntactic means by which these domains are indicated tend to differ among languages, the ways in which language communities may think about these domains are not the same. Ultimately, the meanings underlying lexical and syntactic choices would tend to guide how speakers think about certain realms of experience, hence the term *semantic domains* (Slobin, 2003). Lucy (2011) also talks of the *domain-centered* strategy to analyze the relationship between language and cognition, where a domain of experience is chosen to identify how different languages structure the same events or scenes. The domains chosen for research should be encoded with some frequency in the languages selected to be compared. It is also assumed that selectively attending to certain aspects of experience would generate heightened degrees of mental imagery of those aspects as observed in discursive production and perception.

One thing to keep in mind about TFS is that the so-called *grammaticized* components of a language are most likely to guide speakers to focus on certain aspects of an event and not others. For example, the definiteness/indefiniteness and mass/count distinctions are obligatory (i.e., grammaticized) in certain languages, thus directing speakers to conceptually distinguish between these attributes (see studies reviewed below for more examples). There may be other options available in each language to express an event, but speakers generally tend to follow the norm or the grammaticized way of referring to experience (Slobin, 2006). Furthermore, selective attention occurs not only at the morphosyntactic level, but at the discourse level as linguistic units are configured to illustrate reality in spontaneous discourse (Slobin, 2000). Such natural discursive tendencies are what Slobin (1996) calls the *rhetorical styles* of speakers of different languages.

Fundamental to SLA is the issue of *transfer*, also termed *crosslinguistic influence*, which occurs at the level of the individual second language user as a psycholinguistic phenomenon (Jarvis & Pavlenko, 2008; Robinson & Ellis, 2008). For research within the TFS framework, instead of transfer occurring from the starting point of a linguistic structure, where a learner may perceive similarities or differences between L1 and L2 linguistic forms, the point of departure for transfer to occur would be conceptual (e.g., grammatical concepts such as perfectivity). L2 users are presented with the complexity of dealing with *interactions* between the different systems of linguistic and conceptual representations that they know. Hence, for second language researchers, discussions revolve around the influence that one language may have on the articulation of thoughts in another language (Jarvis & Pavlenko, 2008). Furthermore, the degrees of knowledge of an additional language, the conditions under which it is acquired and other variables add to the complexity of exploring how one linguistic and conceptual system interacts with another (Athanasopoulos, 2011). The influence of the native language on the acquisition of an additional language has been a constant focus of analysis in SLA research (Han, 2004), on which the lens of the TFS hypothesis can reveal valuable pieces of the transfer puzzle. As Kellerman (1995) wrote, transfer is when learners "**selectively** exploit their knowledge of the first language while grappling with the complexities of the L2 input" (p. 126, emphasis added), which may be related to the TFS approach of seeing language as guiding speakers' *selective* attention to certain aspects of experience. On the one hand, the particular set of options that learners' L1s have provided may guide them to choose L2 structures that L2 native speakers may not prefer. On the other hand, experience with the L2 may also potentially begin to guide their perspectives on certain domains of experience. Thus, learning another language would entail learning new ways of thinking for language processing (Han, 2004; Stam, 1998). Evidence thus far has

suggested that within the process of learning additional languages, speakers may internalize different cognitive and discourse perspectives and, thus, *restructure* the thinking patterns they already have to describe reality, such as events and scenes (Pavlenko, 2011), thus causing them to *rethink for second language speaking* (Ekiert, 2010).

As mentioned above, speakers' preferred patterns of grammaticized units emerge in spontaneous discourse. The spontaneity of these constructions also implies the automatic and implicit nature of TFS phenomena (Pavlenko, 2011). Since patterns of linguistic units are assumed to reflect conceptual units, the choice of particular constructions to describe entities or events are the result of "unconscious structuring of the aspects of experience we wish to convey" (Robinson & Ellis, 2008, p. 513). Individuals who are in the process of acquiring a second language may have opportunities to notice new patterns (or portions thereof) that entail conceptual distinctions that they were not aware of in their L1s. It is of interest, therefore, to SLA researchers to see whether L2 learners incorporate these new patterns into their preferred repertoires of constructions in their interlanguage.

TFS About Motion Events in an L2

Research into how languages differ when selectively attending to certain aspects of motion events has been based on Talmy's (1985) typology of verb-framed and satellite-framed languages (V-languages and S-languages, respectively). In general terms, languages are considered to *frame* motion events in terms of particular lexicalization patterns that may conceptually highlight certain aspects of the events, such as the path of motion and the manner in which motion takes place, while leaving other aspects with less or without attention. V-framed languages tend to focus less on manner and, thus, have fewer manner verbs because their verbs typically encode path. For instance, a V-language like Spanish would encode path in the main verb as in "subir" (English translation: "go up"), leaving no room to encode manner in the verb. By encoding path in the main verb, V-languages tend to leave manner unexpressed, hence this feature of a motion event is less salient and receives less attention (Slobin, 2003). S-languages, on the other hand, usually have the pattern of expressing manner in the main verb and path in a satellite. For instance, an S-language like English would encode manner in the main verb and path in a preposition, as in "run up", thus placing greater attention to manner of motion and providing more detailed descriptions of motion path within a clause.

Berman and Slobin (1994) looked into narratives of the wordless picture book *Frog, where are you?* in five languages. They confirmed that S-framed languages use manner verbs more frequently (tokens) and with greater lexical diversity (types), thus describing manner of motion through richer and more detailed imagery than V-framed languages. It is interesting that Slobin predicted cognitive "consequences" in learning an S-framed language, in that a child would acquire manner verbs fairly early and would have a rich mental imagery of manner of motion because it will be salient in their memory of verbal accounts of motion events. However, would a native speaker of Spanish (a V-language) acquire the rich sets of manner verbs of an S-language with ease and adopt the pattern of paying systematic attention to manner of motion? Or will the learner avoid using manner verbs in the L2, due to the fact that the L1 does not tend to grant salience to manner of motion? In order to address these questions, detailed crosslinguistic analyses provide baselines upon which the TFS patterns of L2 users can be observed.

Recent studies have demonstrated that there may even be significant differences between languages of the same type (e.g., between V-languages). In other words, there always seem to be differences in TFS patterns among languages that are considered to be typologically close (see Cadierno, 2010, for a review of intra-typological differences) and, consequently, there will always be differences in TFS patterns in the L2s that learners wish to acquire, even if they may seem "similar" to their L1s. Accordingly, instead of considering a bipartite categorization of V- and S-languages, there should be a continuum on which languages may be placed according to the degrees of emphasis they give to certain aspects of motion (e.g., manner), as proposed by Slobin (2006), among others.

Cadierno (2010) addresses some of the questions posed above for L2 users. In her analysis, she adds another feature to motion events, namely *boundary crossing*, and also includes focus on receptive TFS patterns in addition to written production. Crossing spatial boundaries, such as "stumbling into a mud puddle," may license the use of manner verbs in V-framed languages. This study included three groups of adult native speakers of different L1s (i.e., Spanish, German, and Russian), who were all learning Danish as an instructed L2 at the lower intermediate level and were residing in Denmark. A comparison group of native Danish speakers was also included. The researcher aimed at exploring whether there were inter- and intra-typological differences between the participants' L1s with regards to their preferred patterns of encoding events that involve boundary crossing in L2 Danish. German, Russian, and Danish would be typologically closer (generally regarded as S-languages), whereas Spanish would be distant (considered to be a prototypical V-language). Criteria for data analysis constituted the amount of manner verbs that participants provided when writing descriptions of pictures that illustrated boundary-crossing events in L2 Danish, as well as lists of motion verbs in general that they wrote (five minutes to list all the motion verbs they could think of in the L2) and the number of motion verbs that they could recognize from a corpus-based taxonomy of motion verbs in Danish (Pedersen, 2000, as cited in Cadierno, 2010). The limited time provided for the production of lists may have served to tap participants' implicit, automatic knowledge, considering that TFS patterns have been posited to emerge from speakers' procedural knowledge (Pavlenko, 2011). Results from the picture description task showed that German and Russian learners tended to use patterns characteristic of their L1s (i.e., the S-language pattern of manner verb + path satellite), which is also typical of Danish, whereas Spanish learners made use of a wider array of constructions. Constructions by Spanish participants included non-manner verbs + path satellites, which is typical of their L1, manner verbs + path satellites, which is typical of the L2, and expressions that did not mark boundary crossing (e.g., "The man does gymnastics"). These results showed clear inter-typological differences between the learner groups across the data. There were also intra-typological differences between the Danish, Russian, and German descriptions, where the German learner group recognized more manner verbs than the Russian group, which could be due to greater similarity between the Danish and German lexicon of motion verbs. V-languages like Spanish cannot express manner in the main verb when describing boundary-crossing events. While Spanish speaking participants showed L1 TFS patterns in their descriptions by not expressing manner in their main verbs (thus tending to use non-manner verbs), they also managed to include satellites to indicate path, hence following the L2 pattern. In other words, they tended to use *hybrid* patterns, which combined L1 and L2 components. Furthermore, there may have been evidence of third language influence in the motion verb that L1 Spanish participants used the most, namely the Danish verb *gå*, which resembles the English verb *go* (participants reported having studied English) and was used as a non-manner verb.

Accordingly, by including learners with typologically different L1s, Cadierno (2010) was able to provide clear evidence of L1 transfer, which was not evident in previous studies that had only included participants with L1s that are typologically close (e.g., Cadierno & Ruiz, 2006, as cited in Cadierno, 2010).

Hasko (2010) also analyzed TFS effects in adult L2 users' descriptions of motion events, but unlike the study reviewed above, the researcher focused on two typologically similar S-languages (i.e., Russian and English) and evaluated the effects of subtle L1 intra-typological differences in participants' L2 spoken descriptions. The participants were native English speakers, who were advanced learners of L2 Russian in the U.S., and native Russian speakers residing in Eastern Russia. In this analysis, the conceptual features of *uni-directionality* (motion in one direction) and *non-unidirectionality* (i.e., motion that is not in a single direction, such as roundtrips), which are salient in Russian but not in other non-Slavic S-or V-languages, were studied as to whether English speakers of L2 Russian would conceptually notice and encode them in their spoken descriptions. The conceptual understanding of directionality when perceiving a motion event is encoded by obligatory unidirectional or non-unidirectional verbs in Russian. The constructions that are produced in this language when using unidirectional or non-unidirectional verbs also tend to include other components, such as goal-orienting satellites and locative phrases that typically involve certain prepositions. Furthermore, the obligatory specification of unidirectionality or non-unidirectionality only occurs in a specific set of motion events. Unidirectional verbs do not only indicate motion in one direction, but also encode motion occurring continuously and at a particular moment, such as "I am walking down the street." Non-unidirectional verbs encode motion that may go in more than one direction and not at the same time, such as "She is walking up and down the shoreline." Accordingly, based on the TFS hypothesis the researcher predicted that since English does not have this obligatory and systematic specification of directionality encoded in single verbs within a limited set of contexts, native speakers of English would face difficulties in acquiring these patterns in L2 Russian. As in Berman and Slobin (1994), the researcher used the wordless picture book *Frog, Where Are You?* to elicit motion-rich descriptions as spontaneous oral production data from the participants. Descriptions by the L2 learners revealed an overuse of unidirectional and non-unidirectional verbs compared to Russian native speakers, which was unexpected. Additionally, L2 users diverged from Russian native speakers in their choices of components to express directionality. For instance, it was found that native speakers of Russian tended to include goal-specifying satellites in their descriptions when using unidirectional verbs, whereas L2 learners tended to use goal-specifying satellites along with non-unidirectional verbs, hence using an inconsistent mix of components in their constructions. The researcher, however, did not specify details about the sources from which these hybrids may have been formed (L1 or L2). She inferred that most transfer came from the L1, considering that English does not systematically specify between unidirectional and non-unidirectional contexts through specific lexicalization patterns. Additionally, the conditions under which the learners were acquiring L2 Russian were scarcely discussed, which may have otherwise shed light on factors that may influence the noticing (or not) of the distribution in which the conceptual feature of directionality is used.

Stam's (2010) longitudinal case study provides findings with regards to gesturing patterns observed from an L2 user between 1997 and 2006 when describing motion events. The rationale behind looking into these types of patterns is that speakers tend to produce gestures in synchrony with linguistic components that have been automatized in a language (e.g., manner verbs in S-languages). Hence, gestures co-occurring with linguistic patterns would provide more

evidence that a speaker is thinking according to the influence of the language known and used. Path gestures were previously shown to co-occur with verbs in Spanish speakers, while tending to co-occur with satellites in English speakers. Additionally, since gestures are considered to aid in the expression of meaning, native speakers tend to systematically use gestures at certain rates per clause, whereas L2 users may rely on gesturing to different degrees depending on how much help they need in getting meaning across. Accordingly, gesture rate in L2 users can be an indicator of verbal fluency. The participant in this study was an advanced user of L2 English with L1 Spanish, who had had ample exposure to the target language in the U.S. At both time points, the researcher showed the participant a cartoon, where a cat (Sylvester) engaged in three motion events: (1) Sylvester climbs up and inside a drainpipe, (2) a bowling ball goes inside Sylvester, and (3) Sylvester and the bowling ball roll down the drainpipe across the street and into a bowling alley. This cartoon was used to elicit motion-rich spoken narrations and gestures from the participant, specifically focusing on how path and manner of the motion events were expressed. The participant was asked to narrate the cartoon to two different listeners: a native Spanish speaker, who heard the participant tell the story in Spanish, and a native English speaker, who heard the story in English. The inclusion of these listeners could have added to the authenticity of the task, although the researcher did not discuss the details of this choice of condition. The narrations were videotaped, transcribed, and coded to analyze how path and manner were encoded both linguistically and gesturally in English and Spanish. The linguistic expressions used by the participant to describe path and manner were counted and compared between the two time points, as well as the rate of gestures performed per clause and the co-occurrence of gestures with linguistic units. Results from the L2 user were also compared to previous findings from monolingual English and Spanish speakers. The participant did not show any changes regarding linguistic expressions of path and manner in L1 Spanish between 1997 and 2006, but showed a shift toward the target language only in her expression of path when narrating in L2 English (by encoding path with satellites in 2006). In terms of gesture rate, the participant relied less on gestures when speaking Spanish in 1997, but used them more in 2006. When speaking in L2 English, the trend was the opposite, where the participant needed more gestures in 1997, but relied on them less in 2006. This, as interpreted by the author, indicates that the participant became more fluent in English by 2006, but less so in Spanish by that time due to difficulties in word retrieval. As to synchrony between gestures and linguistic expressions, the participant used more path gestures with satellites in L2 English by 2006, thus showing a more target-like pattern. When speaking Spanish, however, the participant seemed to have been conceptually influenced by L2 English, since the co-occurrence of path gestures with verbs to express path in Spanish decreased by 2006 (thus moving away from the V-language trend). With regards to gestural and linguistic expressions of manner, the participant showed no change over the years and continued to use her L1 Spanish patterns. Nevertheless, apart from evidence that L2 linguistic and conceptual patterns affected those of the L1, this study contributed to evidence that L2 gestural and conceptual patterns can also bear influence.

TFS Patterns of Information Organization in an L2

Studies into patterns of organization of content for expression in a second language have gained momentum in recent years, some of which are reviewed below. These analyses concentrate on preferences of information selection, information structure, and choice of

referential frames. In line with the TFS approach, these studies assume that linguistic categories deeply engrained in the language system (i.e., grammaticized) allow for automatized preferences when organizing information in discourse, where selective attention is paid to certain pieces of information and not others. In order to analyze the organizational flow a speaker may give to information in discourse, Stutterheim and Nüse (2003) expanded on the *conceptualizer* component of Levelt's (1989, 1999, as cited in Stutterheim & Nüse, 2003) model of language production. Stutterheim and Nüse included four processes in event conceptualization, namely *segmentation*, *selection*, *structuring,* and *linearization* of the information to be expressed. At this pre-verbal stage of processing an event, according to the researchers, speakers *segment* the situation into smaller events, states or processes, and then *select* the units that will be verbalized (these units are described in terms of propositions). Then, the selected units are *structured* in accordance with the predicate and argument roles that they play as well as how they are anchored within a referential frame (i.e., spatial and temporal anchoring) and their information status (i.e., topic and focus). The final process within the conceptualization stage (*linearization*) consists of ordering words to be expressed in a linguistic sequence.

Tomita (2013), for instance, looked into the logic of coherence that native speakers of German, native speakers of Japanese, and advanced German learners of Japanese prefer to follow when conceptualizing spoken text. Specifically, the researcher investigated how participants link the content expressed in a sentence to those mentioned in preceding discourse. Toward this aim, propositions provided by the participants when describing events from a silent video were analyzed in terms of four conceptual domains that they may stem from: (1) ENTITY (a person or object), (2) TIME (temporal intervals), (3) PREDICATION (actions and events), and (4) POLARITY-VALUE (either positive or negative, depending on the actuality or non-actuality of what is described). Capital letters are used to represent domains, as per the author's format. In the linguistic expression "Mr. Red jumped this time," for instance, "Mr. Red" provides information from the domain of ENTITY, "jumped" does so from the domains of PREDICATION (i.e., the act of jumping), TIME (i.e., past tense), and POLARITY-VALUE (i.e., positive value), and "this time" stems from the domain of TIME. The researcher hypothesized that participants would tend to link propositions in preferred ways based on influence from the L1 and/or L2. For example, a participant may assert the following propositions (brackets are used by Tomita, 2013, to indicate propositions): [Mr. Red did not jump] and [Mr. Green did not jump]. But, and later based on the video, the speaker may want to assert an opposite idea, namely [Mr. Red jumped]. If the speaker chooses to indicate this new idea by stating [On the first occasion, Mr. Red did not jump. On the second occasion, however, he jumped], then the speaker is choosing to link information based on the domain of TIME by conceptually shifting from [the first occasion] to [the second occasion]. It should be noted that the change or maintenance of POLARITY-VALUE would tend to occur in the comment section of a proposition and would always co-occur with a shift in one conceptual domain indicated in the topic position. Hence, the researcher categorized lexical and grammatical expressions into the following two groups: those that encode preferred patterns of conceptual domain selection (i.e., *topic means*) and those encoding POLARITY-VALUE maintenance or change (i.e., *comment means*). For instance, words like *now* and *finally* are related to the conceptual domain of TIME, which would occur in the topic position, whereas *however* and *but* would mark changes in POLARITY-VALUE, hence occurring in the comment section of a proposition. The method was based on Dimroth et al. (2010, as cited in Tomita, 2013). The results for L1 speakers showed that German speakers tended to link events by means of TIME markers, which reflected the

coherence that they gave to their descriptions. Japanese speakers, on the other hand, paid less attention to temporal-shift relations and focused more on causes for a character's reactions or lack thereof. Thus, German patterns of focus were more of the *shift-in-TIME* type, while those of Japanese speakers were of the *shift-in-ENTITY* type, as termed by the author. With regards to German speakers learning L2 Japanese, features of the L1 and of the L2 were used. With regards to temporal adverbials, the L2 users of Japanese were systematically influenced by their German L1 in organizing information from the point of view of TIME. They also showed a greater preference than L1 Japanese speakers in their marking of sequences of events by means of causal relations, thus tending to overuse the target language preference of linking events. Tomita (2013) interprets the results based on the assumption that the discourse structures of each language influence L2 users' strategies of information organization, hence guiding them to adopt different perspectives than those of native speakers.

Temporal and Aspectual Perspective-Taking in an L2

Grammatical aspect distinctions (*ongoingness* or *completeness* as represented by imperfective and perfective markers, respectively) are obligatory in certain languages, but are optional and receive less attention in others. Studies have found that the presence or absence of aspect in a language strongly influences the way in which *goal-oriented* motion events are construed (e.g., Carroll & Stutterheim, 2003). When describing goal-oriented motion events, native speakers of German (a non-aspect language), for instance, tend to take a holistic perspective and primarily attend to the goals or endpoints. In English (an aspect language), on the other hand, the progressive aspect is highly automatized and preferred when describing a goal-oriented event, which speakers would tend to segment into phases (i.e., *phasal decomposition*) instead of perceiving it holistically. An example of phasal decomposition would be "The lady is leaving the parking lot and heading to the store."

Studies by Stutterheim (2003) and Stutterheim and Carroll (2006) are among the growing body of research concerned with the role of aspect in event conceptualization. These two studies focused on descriptions of goal-oriented motion and compared between native speakers whose L1s were aspect languages, those whose L1s were non-aspect languages, and second language learners. Stutterheim (2003) included the aspect languages of Modern Standard Arabic, English, and Spanish, and the non-aspect language of German. Stutterheim and Carroll (2006) included the aspect languages of Modern Standard Arabic and English, and the non-aspect languages of German and Norwegian. The second language learners included in both studies were L1 German speakers of advanced L2 English and L1 English speakers of advanced L2 German. The two studies used a set of short videos showing everyday situations, but specifically depicting goal-oriented motion, such as people walking to a house. Most of the videos overlapped in the two studies, which added to the control of narrative content in the stimuli. In both studies, participants watched the videos and provided spoken descriptions of what they saw. Interestingly, Stutterheim (2003) also recorded speech onset times (SOTs) and Stutterheim and Carroll (2006) eye-tracking data. The assumption underlying the measurements of SOTs was that, once the video started, speakers of non-aspect languages would wait longer for the endpoint to become evident, meaning that they would tend to include it in their descriptions. Aspect language speakers, on the other hand, would not tend to place attention on the goal and would, thus, begin speaking earlier. In fact, the results obtained by Stutterheim (2003) were in

agreement with this assumption. The idea underlying eye-tracking measurements in Stutterheim and Carroll (2006) was that speakers of non-aspect languages would spend more time looking at the endpoints of the events. The results of these measurements were also in line with their hypothesis, namely that German speakers focused on the goals longer before and after they began speaking than English speakers. Overall, the results for the native speakers in both studies confirmed the hypotheses that aspect language speakers take a phasal decomposition perspective and do not include the endpoints in their descriptions (thus, viewing goal-oriented events as *ongoing*), and non-aspect language speakers would adopt a holistic point of view as they tended to include the endpoints in their narrations. In Stutterheim (2003), German speakers of L2 English showed overuse of the L2 progressive aspect, interpreted by the researcher as having partially acquired the L2 perspective in describing goal-oriented motion events. On the other hand, L1 English speakers with L2 German tended to rely heavily on the L1 perspective when narrating in the L2. Similarly, the SOTs for L2 German (L1 English) speakers tended to be similar to the L1 monolingual trend, whereas L2 English (L1 German) speakers showed an approximation to the target language by shortening their SOTs compared to the monolingual German speakers. Findings were similar in Stutterheim and Carroll (2006), where, in general, the L1 German speakers of L2 English tended to diverge from the L1 patterns, whereas L1 English speakers of L2 German did not. Stutterheim and Carroll (2006) argue that phasal decomposition may be a perspective that is easier to notice and acquire, given that English has an explicit linguistic device to encode *ongoingness* (i.e., the progressive).

Chen and Su (2011) focused their analyses on tense by working with Chinese speakers of L2 English. Contrary to English, tense is not encoded in Chinese by obligatory markers and speakers must infer temporality by relying on context. In a previous study conducted by Chen and Su (2010, as cited in Chen & Su, 2011), picture descriptions by native speakers of Chinese were compared to those by native speakers of English. Although three types of pictures were presented (depicting actions in the past, present, and future), Chinese participants tended to describe all of them as if they occurred in the present. English native speakers, on the other hand, distinguished between the three types of temporalities in the pictures, as observed in their descriptions. Consequently, Chen and Su (2011) set forth to see whether Chinese speakers of L2 English would (receptively) distinguish between the three types of pictures due to potential L2 influence. This study involved two picture-matching experiments, where participants were asked to choose the picture that best matched a linguistic prime. Response times were measured. The first experiment involved a group of Chinese speakers with low L2 English proficiency and another with high L2 English proficiency, to both of which the linguistic prime was presented in L1 Chinese. The linguistic descriptions intended to prime participants to make temporal distinctions with means available in Chinese. If priming was effective, it would indicate that participants may potentially be influenced by knowledge of L2 English, which obligatorily makes temporal distinctions. The results of this first experiment showed that the advanced L2 English speakers were better at matching the pictures correctly with their corresponding linguistic descriptions in Chinese than the beginners, especially when matching pictures with linguistic descriptions in the past and future. The authors suggest that advanced L2 English users were seemingly influenced by L2 conceptual distinctions of time, even when receiving information in L1 Chinese. The response times in this experiment, however, showed no differences between the two proficiency groups. The second experiment only involved Chinese speakers with advanced L2 English knowledge, to which the linguistic description primes were presented in English. The researchers sought to confirm whether these participants would

perform similarly to the advanced learners in experiment 1. Response times for the advanced group exposed to English descriptions were longer than those for both groups exposed to Chinese descriptions. This was possibly due to extra processing in reading text in a non-native language. Compared to the advanced group exposed to Chinese descriptions, the group exposed to English descriptions scored similarly regarding future temporal phases, but lower for past temporal phases. One of the explanations offered by the researchers for this inconsistency was that the markings used to indicate past varied more than those used to indicate present and future. For instance, *has finished V-ing*, *V-ed*, *has just V-ed* and irregular forms were all used for the past, but *about to* and *–ing* markings were consistently used for the present and future phases, which could have been clearer to the participants. This explanation, however, only points to the level of linguistic form. If it is assumed that a language directs their attention to the conceptualization of temporal distinctions while in use (i.e., online processing), the scores from the advanced group exposed to English descriptions should have been higher and more consistent than those exposed to Chinese descriptions. The researchers argue that long-term exposure to the L2 that explicitly carries temporal markings as the ones tested in this study could drive L2 users to become more sensitive to such distinctions even when processing their L1. If, in fact, the linguistic descriptions served to prime participants' perceptions of temporal phases, this study may have provided evidence of L2 thinking for L1 reading (in the case of the advanced learners exposed to Chinese descriptions) and L1 thinking for L2 reading (in the case of the advanced learners exposed to English descriptions in the past). The picture matching tasks used in this study aimed at gauging participants' access to L2 event conceptualization. A potential problem with such *conceptual access* tasks, as identified by Pavlenko (2009), is that input used for these tasks commonly favor structures that appear to share meanings, but which in reality do not fully match. For instance, the Chinese descriptions anchored within a temporal phase seemed to "match" with English descriptions in the past, present, or future tense, but may not be completely the same (see Chen & Su, 2011 for examples).

TFS About Definiteness/Indefiniteness and Mass/Count Distinctions in an L2

Plural markings and articles are also *obligatory* (i.e., grammaticized) units in certain languages, but optional in others, hence the distinction between *classifier languages* that lack count/mass distinctions, such as Mandarin, and *noun class languages* that differentiate between count/mass nouns, such as English. Underlying mass/count distinctions are the conceptual representations of *boundedness* and *unboundedness*. Count nouns, such as *oranges,* are perceived to have clear boundaries and can be pluralized and counted, whereas mass nouns, such as *sand,* would not be perceived as having any clear boundaries. Related to these conceptual representations are those of *definiteness* and *indefiniteness*, as encoded by articles. For instance, *sand* is a noun that does not encode *indefiniteness*, hence cannot co-occur with an indefinite article (*a sand). In other words, speakers from *classifier* and *noun class* languages may attend to different properties of the same objects for communicative or classification purposes (Jarvis & Pavlenko, 2008). The challenge for second language learners mainly stems from acquiring target-like conceptualizations of experience as encoded by article and plural patterns, suggesting that L1 meaning mappings of *boundedness* and *definiteness* would be particularly resistant to restructuring, despite ample L2 input and interaction (Han, 2013). The two studies reviewed below encompass L2 users' conceptualizations of definiteness and boundedness along the same

lines as Han (2008), where accuracy assessment was carried out at the discourse level, hence including other constructions that may convey the concepts under focus and not just the target morphemes of the L2.

Han's (2010) longitudinal case study compared thinking for writing patterns of article use in spontaneous stretches of discourse (i.e., emails) between 2003 and 2007. Apart from analyzing her participant's emails as naturalistic data, the researcher also searched for supporting evidence through elicitation tasks targeting articles and plural markings (i.e., four translation tasks, a noun elicitation task, and an error correction task). These tasks were timed, so as to heighten the possibility of tapping into the participant's automatized preferences. The guiding question for this study was to what degree the participant's mind was thinking in the L1 when producing written texts in the L2. A valuable approach to this study was that it analyzed articles in relation to plurals, that is, a cohort of linguistic forms that express noun countability with a focus on definiteness/indefiniteness. Additionally, concentrating on more than one form would also allow for the observation of intra-learner variability. In English, according to Lucy (1992, as cited in Han, 2010), three classes of nouns can be distinguished based on whether they are [+/- animate] and [+/- discrete]. Thus, for the Chinese learner, English would constitute a superset and a complex system of distributional patterns, since the three noun categories distinguished for English are all conflated into one sole category in Chinese. Regarding the naturalistic data, quantified nouns (i.e., nouns co-occurring with quantifiers, like *two* or *three*) tended to be more accurately marked for plural than non-quantified nouns, hence showing a partial understanding of the distinctions between count and non-count nouns. Additionally, the participant used indefinite markings more accurately than definite ones, but usually with the help of classifiers (e.g., *a spoonful* and *a cup of*). These two findings in the data reflect L1 influence since all nouns are inherently non-quantificational in Chinese, yet they can all be quantified by means of classifiers and quantifiers. This is in terms of form. With regards to meaning, the participant selectively marked for plural when the noun phrase indicated the feature of being *specific* (as in "We have around 1500 boxes"), thus attending to the concept of *specificity* as guided by his L1. Non-specific nouns can also be quantified and pluralized in English (e.g., "Lions are scary"), but the participant did not show high accuracy rates of plural marking in these environments. Therefore, he was *selectively* transferring his L1 meaning criteria of *specificity* to express the L2 form for plurality. Regarding the use of articles (definiteness/indefiniteness), the participant also showed L1 thinking for L2 production in that he chose to express the definite article (*the*) when the context implied a demonstrative nature for which the pronoun *this* could be used. Only in those contexts did the participant choose to mark the nouns as definite (e.g., "I'm looking for **the** file you sent me"; "They couldn't solve **the** problem at this moment"). In other words, the participant tended to use *the* to transmit the L1 meaning of *this*, which again implies the concept of *specificity*. Regarding the participant's use of the indefinite articles, the tendency was for him to mark indefiniteness as if to encode the meaning of *one*. Greater accuracy was found for the indefinite article in the naturalistic data set, but this may be due to the fact that the environments that called for the indefinite and definite articles were not balanced. As noted by the researcher, the discourse topics at hand in the naturalistic data may have allowed for more opportunities to use indefinite articles, for which the participant conveyed the L1 meaning of *one*. Results drawn from the elicited data confirmed what had been found in the naturalistic data set. Overall, the researcher argues that although the participant had lived and worked in an English-speaking community for 12 years, relatively the same L1 conceptual structures were observed in his L2 production with regard to plurality and definiteness. In other words, the participant showed little

conceptual restructuring from 2003 to 2007 in terms of *boundedness* and *definiteness*. This may point to what has been termed *selective fossilization*, where the same errors persist in a learner's interlanguage despite adequate motivation to learn, rich exposure to L2 input, and abundant opportunities for communicative practice (Han, 2013).

Ekiert (2010) focused on the multifunctional use of articles as pragmatic markers, in line with the argument that definiteness as a conceptual category guides interlocutors in figuring out how the referents fit into the overall structure of discourse (Lyons, 1999, as cited in Ekiert, 2010). The study included three native speakers of Polish (a language with no articles) who were learning English (a language with articles) in the U.S., hence engaging in both instructed and naturalistic language interaction. Data from native English and native Polish speakers were also used as baselines. A written narrative task based on a silent video clip, a missing article task, and stimulated recall while completing the missing article task were used to elicit definite/indefinite distinctions. The researcher collected data at three consecutive time points over a period of three months. This way, it was possible to observe whether the same linguistic resources were employed by the learners to encode definite/indefinite distinctions systematically over time. Overall, participants tended to omit articles across tasks and data collection points, which was most likely influenced by their L1 (Polish), as argued by the researcher. However, the participants also showed combinations of L1 and L2 applications of the English indefinite article, and both the definite and indefinite articles were used. Interestingly, by the third time data was collected, it seemed that the L2 was exerting more influence in the way participants used articles compared to the first and second data collection points. Similar to the study reviewed above (Han, 2010), the results also showed that the demonstratives *that* and *one* were among other linguistic components that participants used to encode definiteness. Nevertheless, and as just noted, the participants in this study seemed to have undergone restructuring, possibly due to task repetition and ongoing classroom instruction, among other factors mentioned by the author, whereas the participant's patterns in Han (2010) tended to remain stable over time.

TFS About Spatial Scenes

Spatial distinctions are also considered to be conceptually obligatory and are encoded by grammaticized linguistic units. In English, it is assumed that the prepositions *in* and *on* direct speakers' attention to obligatory spatial distinctions of *containment* and *support*, respectively, whereas the Spanish preposition *en* conflates both of these distinctions. *Containment* represents spatial scenes in which a typically smaller object is inside or contained by a typically larger one, such as *The pickle is in the jar*. In spatial scenes, the smaller objects are generally termed *figures* (Fs) and the larger objects are *grounds* (Gs) (Talmy, 2000). Prepositions hence typically encode spatial relations between Fs and Gs, which give rise to specific spatial distinctions. Unlike *containment*, the spatial distinction of *support* indicates that a F is in contact with the surface of a G, where the G serves to support the F, as in *The books are on the table*. Coventry, Valdés, and Guijarro-Fuentes (2010) investigated the fundamental question of whether language influences non-verbal cognition (Lucy, 1996). Native speakers of English and native speakers of Spanish were shown pairs of pictures. The first picture of each pair showed a verbal description of the scene in the participants' native languages. Participants were then shown the second picture of the pair and were asked to judge whether it was the same or different than the first one they saw. The researchers hypothesized that English speakers would be more likely to be influenced by the

verbal descriptions (i.e., primes) when perceiving the visual images, since their language distinguishes between *containment* and *support* linguistically (i.e., *in* vs. *on*, respectively). Spanish speakers, on the other hand, would not be influenced by the linguistic primes, since the preposition *en* does not distinguish between *containment* and *support*. The researchers posited that the priming effect of the linguistic descriptions would lead participants to falsely judge the second pictures as being the same as the first ones. In English, for instance, the first image of one of the picture pairs illustrated a mildly concave ground with objects touching its surface (pictures showed dogs *in* or *on* a hand) and the linguistic prime included the preposition *in* (e.g., "the dogs are in the hand"). If the second picture were more concave, participants would (erroneously) perceive both pictures to be the same, due to semantic priming by processing the word *in*.

The researchers, nevertheless, found no evidence for an effect of language on immediate recognition of spatial relations in both groups of participants. Perhaps the researchers could have had a control set of images without verbal descriptions, so as to completely rule out any differences in scene perception due to linguistic priming. It may have been possible that the images *per se* (and not the prepositions) may have appeared to be falsely the same to the participants strictly due to a visual effect and not a psycholinguistic one. Moreover, there was a 750 ms pause between the presentation of the two images of each pair, during which participants had to look at a fixation point (+). Would their perception of the two images have been different if images had been presented back to back, without a space or pause in between? Additionally, when piloting the stimuli, it could have been interesting to see how participants *described* the images in their native languages. Would they still have encoded images with less concavity with the preposition *in*, as opposed to *on*? Further, the researchers assume that a more concave hand would automatically indicate *containment* and that a more flat hand would indicate *support*. The links to these concepts are not clear, especially for Spanish L1 speakers. Perhaps for them, a figure may always be *supported* by the surface of a hand, no matter how concave the hand is. Pavlenko (2009) also speaks to the lack of consideration of crosslinguistic differences in the selection of materials for research. This study, however, is important as it contributes to efforts in elucidating whether language influences non-verbal spatial cognition. Later, Coventry, Guijarro-Fuentes and Valdés (2011) provide valuable expansions to the study described above by discussing the idea that acquisition of spatial distinctions and encodings in a second language would rely on the co-occurrence of nouns and prepositions (or other linguistic units used to encode spatial relations).

DISCUSSION AND CONCLUSIONS

The studies reviewed above provide valuable findings regarding TFS patterns in L2 users through a variety of language processing means, including written production (Cadierno, 2010; Ekiert, 2010; Han, 2010), spoken production (Hasko, 2010; Tomita, 2013; Stutterheim, 2003; Stutterheim & Carroll, 2006), reading (Chen & Su, 2011), as well as the combination of gesturing and speaking (Stam, 2010). Coventry et al. (2010) and Coventry et al. (2011) also provide valuable discussion on whether language influences non-verbal cognition and highlight some of the complexities involved in noticing networks of new forms mapped onto novel obligatory spatial conceptualizations in an L2. The findings contribute to answering some of the fundamental questions SLA researchers have in mind when conducting studies of this kind. Among these questions are whether learners adopt L1, L2, or in-between patterns when

processing the target language, which L2 patterns are more difficult for learners to incorporate into their preferred repertoires, and similarly, which components of the L1 are more vulnerable to restructuring and which are more resistant. TFS patterns do not only reveal the degrees of structural accuracy in an L2, but more importantly, they imply correlations between such linguistic units and conceptual representations. Consequently, by viewing a speaker's usage patterns while processing an L2, researchers can see where learners are in terms of acquiring target conceptualizations. Slobin's (1996) claim that L1 "training carried out in childhood is exceptionally resistant to restructuring in adult second language acquisition" (p. 89) has been challenged by findings of dynamic restructuring in L2 users, as seen in the studies reviewed here.

Variables that may explain L1 transfer and which specifically relate to the saliency of the target linguistic structures constituted one of the focal points of discussion in the studies reviewed. While some L2 markers may be salient and easily noticed (e.g., progressive marker in English), others are more obscure (e.g., there is no clear marker for "holisticity" in German, see Stutterheim & Carroll, 2006). This explanation, however, only points to the level of linguistic form, which may imply that if learners do not notice the patterns of forms, they may not notice the conceptual distinctions that they entail. Language typology was also at issue. In Cadierno (2010), for instance, typological distance seemed to have played a crucial role in constraining Spanish participants' acquisition of L2 manner verbs (and attention to the concept of manner when processing the L2), whereas typological similarity between the other languages in the study (i.e., Russian, German, and Danish) played a facilitative role. This study, thus, provides evidence for Kellerman's (1995) *transfer-to-nowhere* principle (in the case of the Spanish participants), where L2 users maintain their L1 perspectives and fail to notice the frames adopted by the L2, thus expressing L1 conceptualization by interlanguage means due to typological distance. There was also evidence, however, in favor of the claim that typologically close languages (i.e., with similar TFS patterns) may cause confusion (e.g., Hasko's (2010) study involving English and Russian, which are typologically close). It seems that research focusing on a particular component within a semantic domain (e.g., the component of *manner* in the domain of *motion events*) may yield finer-grained information as to what linguistic and conceptual units may exhibit acquisitional difficulty. In this sense, typology in general may not be enough to explain transfer. It may be the absence or presence of a particular conceptual distinction in either the L1 or L2 that can be more vulnerable to transfer effects. In turn, certain particular distinctions may be more difficult to acquire in particular languages for certain L1 users (e.g., *directionality* of motion in Russian, as in Hasko (2010)). It is at this detailed level where Han's (2013) *selective fossilization hypothesis* may be applicable. Stam (2010) also found that for an L1 Spanish speaker it is difficult to incorporate conceptual salience and encoding of *manner of motion* in the interlanguage (since Spanish does not allocate much attention to this component of motion events), whereas conceptual restructuring towards target-like encoding of *path of motion* was easier. Apart from the explanation that path encoding may be more salient in the target language, as mentioned by Stam (2010), it is also important to consider other variables that are not necessarily related to the structural properties of the L2. Perhaps it was more urgent for Stam's (2010) participant to adapt to the TFS patterns of path rather than manner in order to interact with her native English-speaking interlocutors more effectively. In other words, maybe she was getting away with her Spanish TFS patterns of manner more than those of path, because using non-manner verbs was more acceptable to the English native speakers she interacted with. As mentioned by several researchers (e.g., Flecken, Stutterheim, & Carroll, 2013; Pavlenko, 2011), the next step in L2 TFS studies is to identify and analyze the possible factors that may contribute

to different degrees of restructuring. Some influencing factors include length of stay, age of acquisition, context of acquisition (i.e., immersion or instructed language acquisition), frequency of L2 exposure and use, and so on (see Athanasopoulos, 2011). Restructuring was found, for instance, in advanced instructed learners who were not residing in the target language country (e.g., Chen & Su, 2011; Hasko, 2010); discussions on the effects of different learning conditions could provide a more complete picture of what may influence the degrees to which restructuring occurs.

Despite evidence of L1 (conceptual) resistance to restructuring and lack of saliency of certain L2 components, evidence of L2 influence was found in all of the studies reviewed. Han (2010), for instance, acknowledged that her participant had begun to conceptually distinguish between mass/count nouns in the L2, although he heavily relied on his L1 concept of *specificity*. Chen and Su (2011) found that participants exposed to L1 Chinese descriptions seem to have been influenced by conceptual distinctions acquired through L2 English, even though they were processing Chinese (i.e., thinking in L2 English while processing L1 Chinese). Overgeneralization was one of the most prevalent findings of L2 influence (e.g., Tomita, 2013; von. Stutterheim, 2003). This implies that learners were aware of certain conceptual distinctions in the L2 but still failed to notice their distributional patterns. As Han (2010) mentioned regarding the use of articles and plural markings in an L2, learners do not merely face the challenge of mapping individual forms onto individual meanings, but rather they must juggle cohorts of forms that encode meanings within conceptual networks. This was also discussed by Coventry et al. (2011) with regard to the linguistic/conceptual components that tend to co-occur with prepositions.

In order to systematically analyze the interactions between the languages known to an L2 user, it is fundamental to understand what *conceptual restructuring* entails and what types of restructuring may emerge. Pavlenko (2011) refers to *conceptual restructuring* as changes in L2 users' linguistic categories, which correspond to underlying cognitive categories. Although the notions of *conceptual transfer* and *conceptual restructuring* may be currently applied by several researchers only in reference to lexical categories, there is a need in the field to extend it to principles of information organization at the discourse level (Flecken et al., 2013). Tomita (2013) also argues that both grammatical and lexical categories can influence patterns of information organization, if they convey a particular perspective in the broadest sense, that is, "a conceptual category which can serve as a schematic framework for the speaker when conceiving things and understanding situations in the real or narrative world" (p. 146). Regarding schematic frameworks and networks, the cognitive theory of metaphor (Lakoff & Johnson, 1989), for instance, may also be a promising source from which to analyze L2 users' conceptual restructurings (Zimmerman, 2006). Just like the TFS hypothesis, conceptual metaphor analysis assumes that while all situations may have the potential to be universally experienced, such as motion events, each language has a specific set of linguistic components that are configured in idiosyncratic ways to encode them (Hasko, 2010; Odlin, 2008). The crosslinguistic differences in encoding reality, as assumed by both TFS and conceptual metaphor analyses, hence reflect dissimilar ways of conceptually perceiving and partitioning experience.

Bassetti and Cook (2011) propose a systematic way of categorizing possible restructuring scenarios. Specifically, a concept (e.g., *lunch*, as illustrated by the authors) may bear different labels given by the languages the speaker knows (e.g., *lunch* in English and *pranzo* in Italian). Each language represents the concept in different ways (e.g., *lunch* in English may trigger the conceptualization of a sandwich and a bag of chips, whereas *pranzo* would represent a plate of

pasta and a main course of fish or meat). According to the researchers, when a person acquires both labels and their corresponding conceptualizations of *lunch*, the interplay between these labels and their representations may vary in different ways. For instance, there may be a *one-concept scenario*, where the concept of *lunch* is only represented by what the L1 label (or that of the L2) triggers, or a *one-integrated concept scenario*, where a speaker takes some parts of the L1 conceptualization and others from the L2 to create an in-between representation (e.g., the concept of *lunch* may be a plate of pasta and a bag of chips, whether the speaker is referring to it in the L1 or the L2). The one-integrated concept scenario seemed to be the case of several L2 users participating in studies reviewed above, where a blend of L1 and L2 linguistic and conceptual principles were used. In Cadierno (2010), for instance, while Spanish speaking participants showed L1 TFS patterns in their descriptions by not expressing manner in their main verbs (thus, tending to use non-manner verbs), they also managed to include satellites to indicate path, hence following the L2 pattern.

The various possibilities of conceptual and linguistic restructurings evidenced thus far may point to the dynamic nature of L2 competence. In this sense, all of the languages that a speaker may know are constantly affected by one another and by the contexts that the speaker is exposed to. Consequently, even the first language is deemed dynamic and unstable, as seen in Stam (2010), for instance. Studies have recently addressed the question of how much knowledge of an L2 is needed to generate changes in the L1 (see Brown & Gullberg, 2012). As Bassetti and Cook (2011) indicate, there may be effects of an L2 on an L1 at low levels of L2 knowledge and use and "even a smattering of knowledge of another language is enough to change from a monolingual's way of thinking" (p.144). Although the majority of the studies reviewed here involved intermediate and advanced learners, analyses have yet to unveil what types of restructurings may occur in beginner L2 learners.

In relation to the research methods employed in the studies reviewed, Slobin (2003) delineated the need to select semantic domains within which to explore particular TFS patterns. What may be needed for a full picture of linguistic relativity and determinism in SLA is a systematic exploration of areas of mental life in which thinking for speaking can be demonstrated as having effects on how people experience events that they are likely to talk about later ("anticipatory effects"), matched with demonstrations of cognitive effects after events have been experienced ("consequential effects") (Slobin, 2003). Most of the studies reviewed here concentrate on the consequential effects, although some also include analyses of anticipatory effects (Chen & Su, 2011; Coventry et al., 2010). In order to fully understand conceptual restructuring in L2 users, longitudinal studies, such as Han (2010) and Stam (2010) would be particularly fruitful. Although statistical analyses may provide general trends in L2 TFS patterns, qualitative focus on individual data would offer valuable information regarding intra- and inter-learner variability. With regards to the materials used for data elicitation, it should be highlighted that the use of video clips and pictures with real people and scenarios could have provided greater authenticity to the experimental input and may have also allowed participants to understand the events at hand in a more comprehensive manner (e.g., Tomita, 2013; Stutterheim, 2003; Stutterheim & Carroll, 2006). As for studies exploring the influence of language on non-verbal cognition (Chen & Su, 2010; Coventry et al., 2010), it could be fruitful to use control items without verbal descriptions (i.e., primes) so as to monitor the effects of the images *per se* to a greater extent. Data from SOT and eye-tracking measurements revealed important correlations between attention allocation and the perspectives taken by speakers depending on the aspectual options available in their languages (Stutterheim, 2003; Stutterheim & Carroll,

2006). The inclusion of eye-tracking data also puts forth the hypothesis that speakers of languages that encode particular features of an event grammatically will attend to such features longer than speakers of languages that encode the same features in lexical or phrasal components. This hypothesis underlies what has been termed *Seeing for Speaking* (Schmiedtová, Stutterheim, & Carroll, 2011).

As mentioned above, it may be inferred that the relationship between language and conceptualization in an L2 is dynamic in that it may change according to contexts, tasks, levels of complexity, and conditions (Flecken et al., 2013). For the multilingual mind, as defined by Cook (1991), the decisions to be made in the *conceptualizer* (Levelt, 1989, as cited in Flecken et al., 2013) are more complex than for monolinguals (if there is such a state nowadays, see Pavlenko, 2011). Focusing on a cohort of forms (e.g., Han, 2010) may also contribute to the understanding of the interacting parts of the complex system of interlanguage, by seeing which patterns change, which remain resistant to change and which fluctuate and under what conditions. The findings regarding issues of *rethinking for L2 speaking* thus far constitute supporting evidence for the *interlanguage hypothesis* (Selinker, 1972) and may potentially point to what may form part of our understanding of interlanguage semantics (Selinker, 2011).

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