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Second Language Learning Strategies Using First Language Acquisition Methods

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Abstract. Finding fast and effective ways to teach an second language (L2) has always been the goal of linguists and second language teachers around the world. How can cognitive semiotics and studies of human social cognition fit in to the scene to aid and enhance the process of learning an L2? Research into theories of natural pedagogy through the use of ostensive-referential communication (Csibra & Gergely, 2009), inter-subjectivity (Raczszek-Leonardi et al, 2013), joint attention (Tomasello, 1999), and joint activity (Fusaroli & Tylén, 2012), typically used to explain L1 learning in infants or language emergence in general in humans, will be used to explain the possible ways in which typical L2 education may be looked upon in a 'cognitive semiotic lens'. Further research will be explored into the comprehensive input theory (Krashen, 1981), and the use of L1 as an interface platform to launch from when learning L2 and how such strategies can assist scaffolding techniques (Atkinson, 1987; Weschler, 1997). The purpose of this review is to bring a more socio-cognitive dimension into the field of L2 learning by way of considering human's natural L1 learning mechanisms. The aim of this paper is also to allude to a possible dynamic approach when devising L2 learning strategies, utilizing a variety of live interactive, cooperative, and sensuous input and output, as well as implementing other successful L2 theories and strategies.

Key Words: *second language acquisition, cognitive semiotics, comprehensible input theory, socio-cognition, natural pedagogy, ostensive-referential communication, scaffolding.*

Introduction

The limits of my language are the limits of my world.
Ludwig Wittgenstein (1922).

Learning an L2 is and will continue to be a growing trend as globalization increases and means of travel become more accessible. Reasons abound for people wanting to learn an L2, from simply wanting to live and get by in a foreign country, to just being an interesting hobby. Despite the motivations, without a doubt, learning an L2 opens the cognitive doors to other people's minds and cultures thus allowing fruitful social interaction as well as giving new perspective on one's own culture and first language. Most fascinating of all, expanding one's language knowledge, be it L1 or L2, expands the mind in profuse ways, and allows one to thereby expand their internal representation of the self and world.

Although there are many benefits of learning an L2, many people struggle in the endeavor, and often not for a lack of effort, but for poorly constructed L2 education systems. Another obstacle is the prevailing false myth of "missing the boat" for learning an L2. For many people, learning an L2, if not done in the early days of childhood, seems like an impossible feat. Adults are often instilled with notions of missing their opportunity for learning an L2 if not accomplished in their early days of childhood. This can, however, and has been overcome by a number of committed adult L2 learners through a wide variety of studying and learning techniques. While taking a look at these successful techniques, we will also explore ways in which

cognitive semiotics can help ground our understanding of language acquisition in general, and also that of second language learning.

There may exist as many ways to teach or learn an L2 as there are languages. Finding the holy grail of second language education has been a long sought out endeavor. One consideration of L2 education that may help us get closer to our goal, and that is often overlooked, is language acquisition in general. There is a myriad of evidence pointing to how first language acquisitions skills can help us in understanding and developing teaching and studying strategies for L2 learners. Of course, learning an L2 by way of L1 learning mechanisms is nothing new. There are a range of well-known practices and learning methods designed around imitating L1 learning, such as total language immersion either by being in the country of your L2, or if that is not possible, L2 learners can simulate the experience by taking a greater amount of L2 input than output. However, there may exist other facets of L1 learning that are ignored when devising L2 teaching and learning strategies, and could be very useful in tackling the L2 learning process by manipulating the social cognitive pre-dispositions that we experience when we are nascent language learners. There are ample studies in social cognition that just may lend itself to more successful L2 learning for children and adults alike.

The theories chosen here are based broadly in cognitive semiotics, the study of human meaning-making and its relation to cognition. More specifically, I have chosen in-

vestigations that appertain to behavioral and neuro-scientific experimental approaches of cognitive semiotics, along with studies into second language acquisition (SLA) in general. The behavioral approaches of cognitive semiotics are what I find most fascinating and relevant to second language acquisition theories, as there have been numerous studies showing how social aspects of human behavior are tremendously relevant to L2 learning. These social aspects are what I will mainly discuss in this review and will also touch upon some of the practical applications of this knowledge for L2 education. While the focus of this review is intended to be remedial to adult teaching of an L2, it can also be very much applied to adolescent L2 learners and even teaching practices in general.

The Social Aspect of Learning a Language

*Teeth, throat and bowels are objectified hunger;
the grasping hand, the hurrying feet,
correspond to the more indirect desires
of the will which they express.*

Arthur Schopenhauer (cf. Schopenhauer, 1818, cited in Davidson 1952, pp.84–113).

1. Our Social Origins

It is quite self evident in many ways that language acquisition is a social phenomenon. Indeed, we use some kind of language since birth onwards- first by crying, then by gestures, and then finally by words and later construct those words with advanced syntax. And all of these nascent communication methods are expressed for one single purpose: we want something. As adults, too, this desire does not fade. Even a mentioning of some interesting fact betrays any pretense of simply imparting knowledge for knowledge's sake. There is always some kind of underlying reason for our actions. Arthur Schopenhauer named this drive the “Will to Live”, doing for the want of some thing, which he claims is responsible for all of our individual actions and for society as a whole (Schopenhauer, 1818). And so, the social aspect of learning stems from our basic need to express desire, which all living organisms are capable of doing. However, humans have a greater ability than other animals, which even the great apes do not have — it is our ability to communicate intentionally and cooperatively (Tomasello, 2008). This is what Michael Tomasello claims to be the fundamental difference between humans and apes: that intentional and cooperative communication grants us the ability to be able to imitate one another. Apes, on the other hand, even chimpanzees who seemingly imitate other chimpanzees' tool use, are in fact only displaying, what he calls, “emulation learning”. Rather than copying the conspecifics or behavior of an act, such as a the witnessing of a chimpanzee supposedly imitating the act of another chimpanzee rolling over a log to find a meal of insects, the environment simply affords for the chimpanzee to do what it naturally already knows how do (Tomasello, 1999, p.29). Thus with apes and other animals there is no imitation like humans have come to develop. And imitation, through intentionality and cooperation, is the paramount key to learning a language.

2. Joint Intentionality, Cooperation, and Live Interactions

What is all too forgotten about in the case of L2 teaching practices is of the vital importance of sharing a common ground in conversations of an L2. Even when two interlocutors are conversing in their native language, there needs to be cultural grounding for successful communication to arise. As an illustration, the first time an American and an Englishman meet, there might be some confusion or plain misunderstanding when discussing whether to buy “chips” or “french fries”, or a “cookie” or “biscuit”, if they do not recognize the difference in meaning of each others' lexicon. Likely, in such a situation, there will be some sort of alignment by one giving in to the other, or else they would come to an understanding of their respective differences and accept it as so. But without this common ground forming, communication can become a exhausting affair. Indeed, beginner learners of an L2 can attest to how tiring miscommunication can be, and can often lead the person to giving up trying to speak their L2 during bumpy moments. Fortunately though, in general, humans are especially good at joint intention, which stems from first joining attention together to some 'thing'.

Foremost, this attention to 'some thing' relies on interaction between at least two people. This happens firstly as children are raised by their parents. A study by Nadel (1999) has shown that infants are acutely aware of the differences between recorded and live interactions with their mothers, where the infants kept their attention more during the live interaction tests. Likewise, when learning our first language, it is all done live rather than listening to recordings of Pimsleur or Rosetta Stone, for example. We interact daily with our parents, and then later with classmates and teachers, reaffirming in the mind the importance of needing the competency to communicate in order to cooperate with others and get what we desire out of any given situation. Further, It is theorized that infants also learn a lot about themselves from live interactions with their mothers, namely their own emotional state by the mother mirroring the baby's frown, smile, and so forth (Gergely & Watson, in press). This mirroring, done naturally as a learning mechanism for early emotional development, is continued into adulthood as we use these skills to pick up on subtle social cues in which the spoken word fails to account for when communicating live. Thus the importance of live interactions is not only to afford joint-attention, but also serves as an emotional feedback loop.

This fundamental aspect of language acquisition is sometimes lost in L2 education as learners become aware that they do not need the L2 language to function in their social surroundings. In class, students may default to their mother tongue, or even in the best case scenario where L2 learners are immersed in their L2 country, there is the case of purposely or incidentally ending up in an “L1 bubble”- finding themselves with others who speak their L1 and/ or continuing a significant amount of input and output in their mother tongue. Even highly fluent speakers of an L2, if sharing an L1, will typically revert to their native language if there is no good reason to speak in that L2. Also in traditional classrooms L2-L2 interactions have been shown to

be more mentally taxing, as a greater need for assessing and monitoring each other arises since it is unknown to what degree the other can speak the L2. This can also stagnate proficiency in the L2 as students sometimes align their language fallaciously or to an elementary degree (Costa, Pickering, & Sorace, 2008, p.551).

What this shows is human's tendency to take the path of least cognitive resistance and thus creates many obstacles in L2 education. Infants and toddlers, on the other hand, have little choice, as there is no other language to fall back on. Surely, if humans could get away with it and were not raised otherwise, everyone would simply make noises and cry throughout their whole lives to get fed and basic needs met. However, as baby's cognitive and physical abilities grow, and with it their curiosities and desires for more things like a variety of food, drink, and play, along with the understanding of how our actions affect our parent's affection to us, the need to communicate in complex ways develops along side. As a result, live interactions with our parents as infants affords language development very deeply within the brain as we undergo significant emotional development (Raczszek-Leonardi et al., 2013). And so our urge to cooperate with our caretakers is ignited, as we learn, for example, that the word "mama" or the grasping motion of our hands will get us breast milk much faster and more efficiently, accompanied with a smile from the mother, as opposed to just crying, which is more likely to be falsely interpreted, ignored, and may not include a positive emotional feedback response. Thus babies naturally develop strategies to get what they want, which in the end is what the caregiver wants as well, which is to harness communication in the child.

This cooperation relies on joint intentions, joint goals, mutual knowledge, and shared beliefs, which leads to human's naturally evolved and ongoing cooperative infrastructure (Tomasello, 2008, pp.6–7). This cooperative structure is especially important to highlight in terms of learning a language at any stage of life.

2.1. Live Interactions in Play

Carefully designed cooperative practices in an L2 learning environment may assist greatly in L2 acquisition. However, for some L2 aspirants, attending brick and mortar classrooms is not always possible; and for those whom it is possible for often have the unfortunate predicament of being surrounded by their L1 as soon as they step out of the classroom. One modern remedy for this conundrum that is already taking place is via the internet and the teaching of L2 by live video sessions. Even if a student has no L2 speakers to practice with in their immediate surroundings, one-to-one live video sessions could help make up for that, and trigger joint attention and afford deeper learner. Also, joint attention with an L2 partner in a game, either online or live, may have extremely useful applications for home or travel study. We will discuss more of these further in section 4 and how we may put this together to form a dynamic system; however what is important to understand here are the basic underlying mechanisms of how infants and children learn before going to a traditional classroom.

American psychologist and professor of Cognition and Education, Howard Gardner (1991), may have said it best, "The very young children who so readily master symbols systems like language and art forms like music often experience the greatest difficulties upon their entry into school. Somehow the natural universal emergence of intuitive learning that takes place in one's home or immediate surroundings during the first years of life seem of a totally different order from the school learning that is now required throughout the literate world". Certainly, many modern educational institutions have lost sight of early learning pedagogical practices, where the application of such would be entirely useful.

3. Joint Activity in L2 Education

As children, we are inclined to pick up on our social surroundings extremely well, which in turn leads us to extract context from a given situation, and repetition of those experiences causes our apprehension and understanding of words (Tomasello, 1999). It has been further shown that infants who were engaged in joint attention activities with their mothers, (i.e. words are spoken about what the child is showing attention to rather than the mother trying to direct the infant's attention) have shown larger vocabularies by 18 months of age (Raczszek-Leonardi et al., 2013); and the process comes about by the mother and infant affording each other's on-line attention in coaction activities (Tomasello, 1999, pp.84–112). Further delving into joint-activity processes in the brain, a study has shown that during an ostensive gesture experiment, (i.e. gesturing to a person while performing a task), pupil dilation in subjects increased and via MRI scans, areas in the brain concerning the Mirror Neuron System and Theory of Mind (IPI, IFG, and mPFC) were activated; whereas when a participant was just observing the person doing the task without a direct ostensive gesture, there was much less activity in those regions of the brain and less pupil dilation. This mental arousal, evoked by ostensive cues by another person during an activity, plays an important part in attentional mechanisms of human cognition. From this experiment, we can deduce there being an observation mode and an interactive mode, where depending on the mode, the brain activity, and thereby our level of stimulation, are notably different (Tylén et al, 2012).

Joint activity exercises, therefore may be a key factor in L2 education. Of course, this is already done to some degree in many L2 institutions. For example, teachers like to do role play exercises in which students act out a dialogue or scene, enabling them to practice their speech, sentence structure, and any new vocabulary. Conversation classes, where students freely discuss a topic, have also been found to be useful and utilize joint attention to some degree well. However, there may be further implications for joint activity that may have been overlooked. For example, as we have learned from infant's comparative increase in vocabulary through joint action activities, the result came about by mothers talking to the infants about what the *child* was interested in. Likewise, letting L2 students have a considerable amount of control over, not only the topic, but also the vocabulary (i.e. letting student's learn the

words and sentences they want to know how to say) may prove to be useful. And also from that micro-analysis, we have learned that it was not enough to direct attention to what the infant was gazing at, but recurrent repetition of those activities and items in the room was also key in affording successful joint action. So while reviewing role-play may seem tedious to many students, there seems to be good indication that rather than doing a new role-play every class, it would be more efficient in the long run to do the same role play activity over and over again, as if studying it for performing a theater play. These activities can also teach activity-specific utterances, such as the proper order of purchasing something from a store, or language specific greetings, etc. Optionally, teachers may include free conversation of the given topic after the role play exercise to facilitate creative discourse and memorable moments.

Dialogical activities are very important for L2 learners as they engage our social and interactive brain, enabling mirror neurons to be activated and mediate attention (Rizzolati, 2004). One of the problems with only immersing yourself in an L2 environment besides initial frustration of not knowing what is being said and the consequence of bubbling yourself in your L1, is that all of that L2 input only triggers observational mode thinking (Tylén et. al, 2012). It appears, then, that output may have some significant importance, which is where dialogical joint activity takes the helm suitably, and would serve as a less forced way to get the students to practice speaking.

3.1 Joint Action's Efficiency in Language

Another useful byproduct of joint action activities is its natural tendency towards efficiency. The maze task done by Gregory Mills (2013, p.7) shows how in dialogical activities, semantic coordination can lead to refining and systematizing. In the task, pairs were instructed to coordinate and guide each other through a series of computer mazes to reach a given goal, all while using their L1 (English). Dyad participants were in different rooms and could communicate only with text-based chat. While the dyads shared the same map of the maze, they had different starting points, goals, and switches, which would allow doors to be opened, which they then had to incorporate together in order to cooperate with each other effectively to solve the task. What was found was that dyad's semantic coordination would progressively align and referring expressions toward directing each other through the maze became more concise. And so, words that were used in the beginning of the task became used less frequently as interlocutors became more coordinated. Word usage between the dyads were constrained by inter-individual memory and the economy of their interaction showed more and more efficiency as the task progressed. However, this economization of repeated words between the participants was only achieved due to initial local repetition and confirmation of words, such as certain placements or directions throughout the maze. (Mills, 2013). What this indicates is the dire necessity for repetition, feedback, and confirmation when achieving efficiency. One might hold the same is

true for fluency in a foreign tongue. As speakers talk in their L2, they may be unsure of the words they just heard and so repeating the word to confirm what they heard was properly comprehended becomes extremely useful, not only for ensuring the fluidity and correctness of the conversation, but also to embed further vocabulary, pronunciation and correct expression usage in the L2 learner's mind. In conversation, this act of clarification becomes a scaffolding process, in which an L2 learner is able to build off their repeated structures incrementally until clarification is no longer needed, the scaffold removed, and solid understanding of the sentence structure or vocabulary is attained.

4. Alignment in L1 and L2

As discussed in sections 2.2 and 2.3, joint attention, live interaction, and joint activity are paramount in early L1 developmental stages and beyond. They constitute meaningful, and therefore memorable, conversation practices which afford better learning and fluency. One of the other results of joint activity practices, which was mentioned briefly before, is language alignment. Alignment here is defined as an on-line (at the moment) process of coming to an agreement of word-choice, references, and way of speaking among interlocutors. So how does alignment relate to L2 education? Whenever a native or highly proficient L2 teacher is talking to their students, they must align their language with the student's L2, lest the student be lost or confused. Likewise, at any time in which a person's language ability is higher than another, their individual language usage must be aligned for successful conversation to ensue. Analogously, were a pro tennis player to play against a novice, they surely would not be playing to their full capability or else it would hardly be much of a fun game. No, rather the pro tennis player must bring his performance down to the level of the beginner in order to properly teach him. Similarly, native speakers of any language align with whomever they speak to, even if at around the same level of education. Alignment occurs in order to fit in socially, or for efficient communication, or to explain some knowledge that you would like to impart, or for a slew of other reasons.

One interesting investigation (Fusaroli et al., 2012) focused explicitly on alignment, where pairs facing away from each other had to identify a visual oddball on computer screens. They were allowed to discuss and cooperate about their answer in dialogue, which were then transcribed and analyzed. Analysis revealed alignment and convergence in the expressions used to identify the oddball with varying degrees of alteration signifying their confidence. It was found that the degree to which participants aligned locally and globally determined the task performance. Furthermore, it was shown through this experiment that by aligning, social refinement and coordination can increase performance in experimental tasks (Fusaroli & Tylén, 2012). And so this alignment effect supports the ideas of the previous section on cooperation and joint activity and has the possibility of being very useful in implementation of L2 activities.

4.1. Alignment Problems in L2 Learning

However, there are a number of potential pitfalls we should be aware of concerning L2 alignment. Between L1-L2 interlocutors, alignment may be impaired for a number of reasons. As investigated by Costa, Pickering, & Sorace (2008), a sufficient shared basis of knowledge of a language may not exist for L1-L2 conversations, and in such a case, an automatic and easy alignment may not occur to any worthwhile extent. This can happen if the L2 learner is unfamiliar or uncomfortable with a word or syntax structure. And so, even if a native (L1) speaker confirms an error that the L2 speaker made by saying it in the right way, the L2 speaker often continues to make the same mistakes over again, never self-correcting, and thus not aligning as smoothly as would L1-L1 speakers. This disregarding of L2 speakers to align to a native speaker may not only be due to lack of vocabulary knowledge of the target language, but could be based on other factors like their native language's usage of a term. Take for example, in English, the word "hospital" and "doctor's (office)" have very different connotations. However, in Japanese, "*byouin*" can be used to refer to either place. And so, during an exchange between native speakers of both respective languages, beginner or intermediate Japanese students of English are often caught mistakenly using "I went to the hospital" for when they meant "I went to the doctor's", thus creating in the English speaker's mind a very different and troubling picture.

Complicating things even more, an L1 speaker may asymmetrically entrain to the L2's way of speaking, and thus get trapped in what Costa et. al calls "foreigner talk", a simplified and improper way of speaking for the sake of the L2 speaker. In such a case, not only does the L1's usage of the language begin to suffer and can also spread to other L1's in an L2 community, but also little opportunity of progress is given for the L2 to learn past any given plateau they may have reached in their L2 studies. L1 speakers may also have to deliberately choose which words or syntax to align to, and so the process is intentional, rather than automatic as is the case with L1-L1 alignment, and thus far less efficient.

When it comes to alignment, L2-L2 conversations also have their weak points. Where in some cases, if the L2 speakers share the same L1 or have similar L1's (i.e. Spanish and Italian, both romantic languages), alignment may occur more readily than with L1-L2. This could be due to a similarity of accent and repertoire, giving them similar resources to draw from. Also, even if speakers come from very different L1 origins, their rate of speaking may be on par with one another, affording greater alignment possibility (Costa, Pickering, & Sorace, 2008). Although L2-L2 speakers may find it easier to align and bootstrap their already learnt knowledge of the language, by not pushing themselves via conversation with an L1 speaker, their fluency progression may stagnate, or worse yet, may become too accustomed to an unnatural L2 and have trouble engaging in real L2 conversation with a native of that language. Finally, the possibility of constantly

assessing each other's skill level in L2-L2 situations can make conversation difficult and mentally taxing, whereas in L1-L2 cases, the L2 speaker automatically knows the L1 is fully equipped with native knowledge of the language.

4.2. How Alignment Can Work in L2 Education

With all of the seemingly daunting complications of alignment in L2 education, it is hard to see how alignment can play any significant role to aid our quest in finding semiotic solutions to learning an L2. However, alignment is a real phenomenon that occurs everyday in L2 education, and deserves addressing and finding a resolution to the common problems. Teachers automatically and constantly align when they ignore a student's erroneous grammar or vocabulary use. As discussed before, this can hamper a student's progress and also have the unintended consequence of hurting a teacher's L1 ability (although unlikely cause significant damage in the long-run). This practice, however, is unavoidable unless the teacher is willing to sacrifice active and engaging conversation time in order to correct the student about each and every error they make as they make it.

However what teachers can do is actively take note of common errors the students make, and explain or give a memo of those errors to the student at the end of a teaching session. Furthermore, it may be in the teacher's best interest to be especially picky about what mistakes to take note of in the first place. A teacher may also carefully design activities to target a specific common error that students make, and create a type of interactive scaffolding activity, whereby students have access to a toolbox (or word/ phrase box) in which they can self-correct as the conversation goes on. Finally, teachers can be self-conscious about the rate of new material being taught and aim to push the student little by little, which will gradually build natural alignment (more about this in section 4).

What We Can Learn From Our L1 Towards Learning an L2

Learning is always about learning a "language" "
A. J. Rodriguez (2010, p.1)

1. How L1 and L2 are Interrelated

"Children's brains are like sponges." you often hear being said; as well as the famous excuse "You can't teach an old dog new tricks". There is a prevailing myth among adult learners of an L2 that infants and children are far more apt at taking in new knowledge and absorbing it for later use. This may very well be the case when it comes to picking up new sounds and for mastering natural pronunciation skills. But as far as other skills are concerned, this is very off base. Adults have an edge in many ways by having a base language to reference. This can be useful in quickly organizing new grammatical structures or to make a sentence, since we have already had practice at doing this with our L1 growing up. Our first language may help bolster our absorption of an L2 if done correctly, which we will look at more in detail in section 4. There are, however,

very strong similarities between acquiring an L1 and learning an L2. In fact, I will argue that there is no cognitive difference at all. Whenever we learn a new skill, whether it be learning to speak a language, ride a bicycle, sew, play basketball, or learning a new job skill, the same cognitive process is occurring. When I was learning Japanese, I had heard the analogy that learning it was like “sitting on a cold rock. It takes a long time to get comfortable, and once you get off that rock, it is very hard to climb back on.” And this analogy might apply to learning a skill in general, which takes a lot of time and persistence. However, although there may not be any practical cognitive difference in learning your L2 versus L1, there are usually some technique differences. The ways in which we teach infants and children are often lost or ignored when applied to adults. Some of these methods for teaching L1, like involving play (games), songs, and interactive activities (as discussed in section 2), should also be utilized to maximize the L2 learning process. So now let's take a look at some of the natural ways in which we learn an L1 and how it might be employed in L2 learning strategies.

2. Natural Pedagogy

As young learners of our first language, we are exposed to a lot of information. Constantly, we are surrounded by our parents speaking to one another with fluency and speed no infant or small child can imitate, at least not correctly at first. Though as we take in this bombardment of information, we do not process it all, but we do filter in a lot. How does this occur? As we have learned about the sensitivity of infant's predilections towards live interactions before, we also have found that infants are sensitive to indexical information (such as pointing or showing objects) through the use of ostensive signals and have a predisposition to learn general information (Csibra & Gergely, 2009). By general information, it is meant that they attend to enduring and type-relevant information, or in other words, instead of picking up on action, location, or other episodic factors of a particular situation, infants are better at picking up information that can be generalized to other members of a category and various contexts (i.e. airplanes fly; dogs bark; the water goes into the cup). This is what Csibra & Gergely call “natural pedagogy”, because it is a natural cognitive adaptation of human infants; and parents, too, seem naturally inclined to teach in ways that use ostensive signals without realizing, such as attentive eye gazing toward and together with the child, and also for engaging in “motherese”, also called “baby-talk”. While children also learn from their parents by overhearing or observing, they are best at imitating causal and relevantly useful information towards some end-goal, while ignoring unnecessary information (Csibra & Gergely, 2009).

But how can natural pedagogy be applied to L2 learners? In the beginning stages of learning a new language, as infants do, generalizable information may be best taught at first instead of jumping right into episodic information, say for example, a common textbook dialogue about “Mr. Smith and Tom going to the deli”. While such episodic dialogues may be useful in its scope of syntax and vocabulary that is displayed on a single page, it might better afford early beginner students a more solid foundation to start

with more concrete general information. It is reasonable to assume, after all, that generalizable information (things that are static), from either the infant, child, or adult's point of view, are more liable to repetition, and thus become easier to remember. Of course, it is not the purpose of a beginner textbook for you to memorize the accounts of fictional characters going to a deli to buy sandwiches, but rather learn useful words and phrases from the situation. However, I argue that the ordering of many textbooks and teaching systems is inefficient, and can be remedied by simple rearrangement. First teach and focus on general information such as “meat”, “buy”, “sandwich”, “bread”, “I”, “him”, etc. and then build up, scaffolding the student's way to the dialogue of the two characters going to the store to purchase lunch. This applies mainly to beginner students of a language, but in reality, it can work for any new topic to any level of language learner: a thorough study and practicing of any word or phrase bank before tackling episodic information may be more efficient in the long run, and is supported by the order in which we learn as infants. This together with joint-activity free-conversation or role play exercises, as discussed in section 2, would make a powerful pedagogical combination.

3. Ostensive Signals

Natural pedagogy is a system that relies on ostensive signals. In this section we are going to look at what ostensive signals are, how and why infants are sensitive to them, and what this might mean for L2 education.

Ostensive signals can be any gesture or action done to elucidate intentionality from one person to another. In the case of infants without any speaking ability, sensitivity to ostensive signals are measured by tracking the infant's eye gaze and looking toward, or otherwise attending to, those who are using ostensive signals; neural activation in infants has also been measured via brain scans. By numerous studies, it appears that infants are innately sensitive to ostensive signals in the form of direct eye-gaze, “motherese”, and infant-directed physical action, or “motionese”. (Csibra & Gergely, 2009). One thorough micro-analysis was done to observe, step-by-step, the interactions between mother and infant and explain each instance of the phenomenon. Through this natural interaction, at each step of changing the baby's diaper, the mother interacts with her child and allows the infant to be engaged in a form of play by transforming the child's observations into meaningful moments during the baby's wordless, though nonetheless dialogical exchange, thus shaping the infant's social sensibilities (Raczecsek-Leonardi et al., 2013). This co-action exchange, formed by the environment the action that both are engaged in (as in changing a dirty diaper) enables the child to be a full participant in the process, while at the same time directing the mother's attention to what the child is interested in. And that is equally as important since both parties can direct and guide each others' attention, making the event ever more interactive, memorable, and flexible by way of adjusting for each other on-line. Moreover, it can also help the child build its skill of developing empathy through this inter-subjective process. But how can ostensive signals help us in L2 learning?

3.1. Dialogical Teaching

Already, ostensive teaching is being applied to L1 education by good preschool, kindergarten, and elementary schools today. Even middle schools, high schools, and colleges occasionally have a teacher who will use such methods. And these methods are not simply the teacher frequently gazing at the students while talking, although that method may work more for pre-K and kindergarten. Rather, as an example, a form of teaching called 'dialogical reading' has been encouraged by Whitehurst & Lonigan (1998) that engages the students into reading interactively. And useful acronyms have been created by Whitehurst for the teacher such as PEER (Prompt, Evaluate, Expand, Repeat) and CROWD (Completion, Recall, Wh-Type Questions, Distancing Prompts). Without going too much into detail, the idea is basically not to just have the student be a passive listener to the teacher, but rather to get the student to be actively engaged in the process of reading throughout the activity. And that is the main point of ostensive signals as well: to express intentionality, and by doing so employs the interactive and social mode of our brains which is better suited for learning. (Tylén et. al, 2012; Okita et. al, 2008; Kuhl, 2007).

3.2. Ostensive Signals and Dialogical Teaching in L2 Teaching

I believe the dialogical method can be used just in the same manner when teaching an L2. Through constant interactive play and prompting, it may be possible for an L2 student to reap the same benefits as a child learning their L1. Of course, one problem is that the L2 student may not have enough on-hand vocabulary or expressions ready to use to participate successfully with a teacher who is trying to elicit interactive responses. A way to address this is, as suggested before, to have teachers carefully design activities where students can draw upon necessary expressions from some kind of word bank that would be useful in helping the student interact with the teacher. Also, as many L2 teachers already do, encouraging the student to read aloud, and most important of all, to discuss isolated features of a topic so that students will repeat novel words and expressions intuitively and effortlessly, as opposed to forced drab repetition drills. While the analysis previously mentioned focused on infants and children in regards to the ostensive signals of eye gaze, motherese, and motionese, despite what age, students may profit from these well into adulthood. Always, and as common sense dictates, students appreciate a lively teacher who uses directed motion and keeps good eye-contact toward the audience, which are also the signs of a skilled orator. As far as motherese is concerned, of course if a teacher spoke "baby talk" to a group of adult students, it might be considered odd or condescending. However, this teaching strategy should not be scrapped too quickly either. There is some evidence pointing to an adult-gear version of baby talk, called "teacher talk", that may be helpful in helping students understand and correctly pronounce their target L2 in beginner stages (Ivanova, 2011; Matsumoto, 2010). One study actually

showed how this is possible with adult Japanese learners of English. As the Japanese language has no distinction between the English phonemes "l" and "r", when trying to hear or speak words with those sounds, there are often a lot of mistakes, confusion, and frustration. In this study, by Zhang (2009), a training software was developed based on "motherese" to help Japanese students distinguish between the two sounds. While the software did not result in the participants gaining a native-English-like "l" and "r" differentiation capability, there was, however, a drastic improvement in performance. Furthermore, the physiological effects of this kind of training could be seen with neuroimaging (MEG). What I would like to reiterate here is that sometimes a seemingly elementary method of teaching that we use with infants or children, such as ostensive signals and dialogical teaching, may have useful practical benefits for adults as well.

4. The Social Brain's Affordance of Language Learning

Ostensive signals work because a variety of networks of the social brain are facilitated for the purpose of complex social interactions. And this is precisely what aids us in learning our first language as babies and children. So, tying together sections 2 and 3, in this part we will briefly go over some ways that human's social brain affords language learning in L1 and what this might mean for the L2 learning process.

There have been a myriad of studies done recently that have looked directly at the social networks of our brains. Through social cues, there have been numerous investigations to study and analyze the ways in which these networks are activated by information that we relay to the world, or in other words, "social cues". There are two types of social cues: involuntary and voluntary. Both of these types tells us a lot about how and what part of the brain is activated during the internal processing of these cues.

It turns out we are innately sensitive to recognizing involuntary social cues, such as bio-motion, where we can automatically distinguish animate from inanimate motion. During the neuro-imaging experiments of participants witnessing bio-motion and during other experiments of participants being subjected to ostensive eye gazing, the pSTS (posterior superior temporal sulcus) region of the brain was noted to be activated (Frith and Frith, 2009; Grossman & Blake, 2001). The role of mirror neurons and our intrinsic ability to imitate others is also an involuntary social cue. During this unintentional imitation, which is dubbed the "chameleon effect", social smoothness is enhanced as well as a mutual liking (Chartrand & Bargh, 1999). Mirror neurons are also responsible for facial muscles imitating the same emotion, such as witnessing a person in pain and involuntarily expressing the same facial emotion; and brain activity takes place in the same region, too, whether in actual pain or not (Frith & Frith, 2009). Mirror neurons and how they can be elicited purposefully should have great interest to teachers of an L2, especially in getting the student to correctly imitate not only speech sounds, but also cultural idiosyncrasies of a language such as body language. However imitation is not always what is needed, but rather a complementary action, which is achieved

when there is joint-activity toward a common goal (Sebanz et al., 2006). Thus synchronization activities may be beneficial in getting down trickier and mid to high level aspects of L2 learning, such as tempo of conversation, pronunciation, or intonation.

Deliberate social signals in the forms of ostensive gesturing, reciprocation, prompting, and cooperation, as discussed earlier in Whitehurst & Lonigan's dialogical teaching methods, are all aspects of social cognition that should be taken into account in second language learning. These deliberate social signals are necessary for "closing the loop" in two-person deliberate interactions. Through ostensive signals, we are capable of knowing another person's intention (Frith and Frith, 2009). And by knowing an agent's intention, via the interactive mode discussed in section 2.3, I agree with the hypothesis that we are afforded to learn language more efficiently.

L2 Learning Strategies and Theories

We can also think of the whole process of using words in (2) as one of those games by means of which children learn their native language.

I will call these games 'language-games' and will sometimes speak of a primitive language as a language-game.

Ludwig Wittgenstein (Wittgenstein, 1953, cited in Cahn, 2012, p. 1337).

1. Towards a Dynamic Teaching System

Now to finally wrap things up and traverse from theory to practice. In this final section, we will look at a few already formulated L2 learning theories and ideas. It might be worth noting that what will be mentioned here is certainly not an exhaustive list, rather it is meant to inspire further research and perhaps be available as a starting point for creating effective L2 teaching methods. These few select theories were chosen because they cohere well the social cognitive theories discussed previously. Furthermore, some of the aforementioned theories will be reminded of as we go over the strategies and I will attempt to show how social cognitive theories can help us better understand and strengthen L2 education. Lastly, I will attempt to put all we have investigated here together in order to envisage a dynamic system that I believe would be immensely invaluable to bring to the L2 education world.

2. How L1 Can Support L2 Learning

When it comes to teaching L2, one of the prime strategies of teachers is to simulate a full immersion environment. Meaning the teacher not only refrains from using the student's L1 in class, but also discourages or sometimes outright bans students using their own L1. However, there is evidence that this seemingly obvious rule may need to be reconsidered in certain situations. One pro-L1-in-the-classroom supporter, Robert Weschler (1997), in his article "Uses of Japanese (L1) in the English Classroom", expounds poignantly about his experience as an English teacher in Japan, which I, too, can relate to from my own personal experience. In it, he illustrates his own anecdotes and tears down the notion of an English (L2)-only environment and why it can often be ineffective. Due to the

time constraints of an average adult student, Weschler argues "Why waste time talking in an incomprehensible L2 when the time could be put to better use?". Although he does admit that some school environment's techniques, such as the famous (in Japan) Berlitz method, which strictly adheres to the English-only class rule, are feasible with frequent and one-on-one lessons. However, Berlitz schools in Japan charge a hefty price for such lessons, and that much money and time may not be within reasonable means for every adult learner. On the other hand, at a typical English conversation school in Japan, there are a variety of ages and levels of English ability (although the schools strive to put students at about the same level, it's not always an easy task). It is here where teachers tend to run into problems speaking only English where one half of the class comprehends about 50% of what is being said, the other half is scratching their heads, and only a couple of students understand 90% or more. So instead, what Weschler proposes is a "functional-translation method" whereby the student can use his L1 as a launchpad for translation and meaning making. However, he is strictly against word-for-word translations, and instead advocates the translation of meaning, which I too agree is the most important part, since verbatim translations are often impossible or impractical.

While Weschler's particular case is about Japanese learners (L1) of English (L2) in Japan, I believe this strategy can be applied to any L1-L2 situation. This type of utilization of one's L1 in in the L2 classroom is supported by numerous findings of the usefulness of the practice and relevance in a variety of cultural and teaching contexts (Schweers, 1999; Auerbach, 1993; Atkinson, 1987). There have even been recommended some great ground rules of when a student should be allowed to use their L1, including:

- (1)eliciting language,
- (2)checking comprehension,
- (3)giving complex instructions to basic levels,
- (4)co-operating in groups,
- (5)explaining classroom methodology at basic levels,
- (6)using translation to highlight a recently taught language item,
- (7)checking for sense,
- (8)translation items can be useful in testing mastery of forms and meanings,
- (9) Developing circumlocution strategies" (Atkinson, 1987).

As you might be able to notice, many of these suggestions line up fittingly with social cognitive ideas we have already examined. Making classes interactive (rules 1,2), cooperative (rule 4), and using repetitive dialogical teaching techniques (rules 2, 3, 5, 7, 8, 9), we can see Atkin's recommendations corresponding nicely.

However, I would even go further than Atkin's suggestions of L1-use permissibility, rather instead I suggest, as does Weschler (1997), that many teaching activities should be tailored around using the student's L1 (whenever possible in an L1 unmixed classroom setting). One of the first language acquisition features, which the baby undoubtedly has but we cannot expect to recreate, is a blank mind. And so, while the infant and child can rapidly put connections of words and phrases with the world around them, adults or late children learners already have an interfering interface

with natural language absorption — their first language. So to think for a moment that we can impinge upon this interference with any success is wishful thinking, since surely beginner to intermediate students will always be translating in their head whether the teacher knows about it or not. And we should not discourage the disuse of the student's L1, but rather embrace it and even use to enhance the learning process.

3. Comprehensible Input Theory

Now, let's take a look at one of the leading theories in L2 acquisition. By far one of the most convincing theories I have come across is Stephen Krashen's renown theory of second language acquisition (1981), which consists of five hypotheses that I will briefly describe:

1) Acquisition-Learning hypothesis – Krashen's underlying hypothesis for them all, states that students should learn by natural and meaningful communication, much like we did as children learning our L1, and emphasizes more on the communicative act rather than the learning of grammatical rules.

2) Monitor hypothesis – explains the student's relationship with their own self-correction mechanism. Some students under-use, over-use, or optimally use this function to refine their speech and production.

3) Natural Order hypothesis – claims that there is a natural order in which people acquire language, and is based on many statistical findings.

4) The Input hypothesis – perhaps Krashen's most paramount practical strategy, suggests students learn one step beyond their current level of competence.

5) The Affective Filter hypothesis – explains about a filter mechanism consisting of three psychological conditions: motivation, self-confidence and anxiety. The ideal conditions are when motivation and self-confidence are high and anxiety low.

Practically all of these theories can be boiled down to, and as Krashen himself likes to say during his many given lectures, one sentence: “We acquire language in one way and in one way only, when we get comprehensible input in a low anxiety environment” (Krashen, 2010).

His ideas on language acquisition are persuasive, to say the least, and they also correspond or relate to many of the ideas we have discussed in previous sections. The acquisition-learning hypothesis actually makes a distinction between language learning (what we do in traditional schools) and language acquisition (something we do naturally at home). For my purposes in this paper I have not made any semantic separation; however his ideas on the impact of these notions, namely how L2 education should be aimed at natural language acquisition through the passing of meaningful communication, are interesting to consider and matches natural pedagogy's claim of using natural acquisition methods via ostensive signs to teach infants. Furthermore, we can assume natural language acquisition through meaningful communication is best afforded by live interactions versus recorded mediums in adults as it is in infants. Finally, natural pedagogy works

most effectively by following Krashen's input hypothesis, therefore never pushing your infant too far beyond its capability. This is exactly why mothers use elongated and high pitched speech in their motherese, so that the child will have an easier time in picking up and making sense out of the sounds being produced. This is also the reason why mothers or caretakers should pay attention and teach things in the room that the infant is interested in—to go at its own pace.

The monitor hypothesis and the natural order hypothesis applies to aspects of alignment, as both the self-monitoring and natural language acquisition ordering are fundamental to aligning in pairs or groups in a community. This leaves us with the affective filter hypothesis, which deals with psychological conditions which allow or block receptivity to learning a language. As discussed in the alignment problems section (2.4.1), there is a number of issues in second language learning that have the potential to get in the way of successful alignment. All of the misalignment and the frustration caused by such can be mitigated by a relaxed and stress-free environment and by progressing L2 content step-by-step. And so, although usually not explicitly mentioned in L1 alignment experiments, since typically L1 speakers are already confident and relaxed in their language, we can assume that most participants have the ideal affective filter on: with self-esteem high, anxiety low, and motivation high (even if only to get the experiment over with).

4. A Dynamic L2 Learning System

In *The Origins of Human Cognition* (1999), Michael Tomasello outlines three main points as the social cognitive bases for language acquisition:

- “(1) joint attentional scenes,
- (2) understanding communicative intentions,
- (3) role reversal imitation” (Tomasello 1999, p.96).

These are the pieces of the puzzle that we must maintain in mind as teachers and educators consider activities and lessons for their students. To create the best type of curriculum and lessons for students, all of our natural language learning predispositions should be taken seriously. Thus, we must strive to be conscientious of what activities and lessons educators can create that will afford the best joint attentional conditions, make communicative intentions easy to understand, and promote role reversal activities so the student can reproduce the taught material in a similar fashion as the teacher. This can be applied to education as a whole, but is especially important for L2 education. So, my suggestion is to create a dynamic system that will take into account all of the relevant social cognitive proclivities and utilize them accordingly in lessons that will get students engaged and involved by way of giving certain attentional roles through the use of live games, conversations, and role-play. Krashen's five hypotheses should also be considered in devising lessons. Most importantly of those hypotheses is creating a relaxed atmosphere where students can express themselves confidently, without anxiety, and remaining pursuant in steadily building the students' lexicon and ability to express themselves in a reasonable order and pace. And the functional-translation method

proposed by Weschler can also be useful in creating that relaxed environment since there is no harsh consequence for using one's L1, which can actually assist L2 comprehension anyway.

All of these building blocks to afford a more efficient L2 education system need to be constantly checked and crutch pieces removed as a way of scaffolding the L2. Once students have reached a proficient level in some area of their language development to the point where natural output in as expressed almost as quickly and fluently as a native, it is time to add on new information that the student can then slowly digest and gain solid comprehension, at the same time reviewing past content in live joint attention activities. And all of this should be done while keeping the learning environment interesting and fun.

Conclusion

A number of theories dealing with L1 cognition have been discussed in this review and we have looked into some possible useful ramifications they may have for L2 education. To summarize the main points: I have explained that from 'natural pedagogy' toward infants that human communication is adapted to learning generic knowledge through ostensive signals between individuals and that the brain is social and adapted to be aroused more when it is in an interactive mode that results in affording our language ability. Also, humans tend to learn quicker through joint interaction, cooperation, and thus efficient language alignment occurs; and shared intentionality (toward a topic that both parties are interested in) is also important for attentional purposes. Thus the interactive and hands-on ways in which children learn should be utilized in the adult L2 classroom, although catered to adult interests, to ensure the above mentioned social propensities are taken advantage of accordingly. Finally, we have looked into a few of the leading and convincing theories of L2 acquisition, including ways to effectively use one's L1 in a 'functional-translation method'; and we have also explored the idea of pushing just beyond the capability of what the students' can do by themselves with Krashen's 'comprehensive input theory' along with his five hypotheses for second language acquisition, which all harmonize well with the overall discussed social-cognitive theories. All of these offer exciting prospects for future L2 teaching development and I hope a result of this review is the continued investigation in how social cognitive theories, and also specifically L1 acquisition theories, may lend a hand to support pedagogy in L2 learning and education in general.

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Kevin Arthur Crowley

Antrosios kalbos mokymosi strategijos naudojant pirmosios kalbos išmokimo metodus

Santrauka

Lingvistų ir antrosios kalbos (L2) mokytojų pagrindinis tikslas visada buvo ir yra rasti greito ir efektyvaus antrosios kalbos išmokymo būdus. Kaip šiam tikslui gali pasitarnauti kognityvinė semiotika ir socialinis žmogaus pažinimas? Natūraliosios pedagogikos teorijų tyrimas naudojant vaizdžiąją-referentinę komunikaciją (Csibra & Gergely, 2009), intersubjektyvumą (Ra- czeszek-Leonardi, 2003 ir kt.), jungtinį sutelktą dėmesį (Tomasello, 1999) ir bendrą veiklą (Fusaroli & Tuyen, 2012) dažniausiai pasitelkiamas aiškinant vaikų L1 kalbos mokymą arba žmogaus kalbos atsiradimą apskritai, bus naudojamas kurti galimus L2 kalbos mokymo būdus, kuriuose į šios kalbos mokymą bus žvegiama per kognityvinės semiotikos prizmę. Bus toliau tyrinėjama visapusiško indėlio teorija (Krashen, 1981) ir L1 kalbos, kaip atraminės platformos, naudojimas pradedant mokytis antrosios kalbos, ir kaip tokios strategijos gali prisidėti prie kitų pagalbinių mokymo metodų kūrimo (Atkinson, 1957); Weschler, 1997). Šios apžvalgos tikslas yra į L2 kalbos mokymo sritį įvesti sociokognityvinę dimensiją, atsižvelgiant į natūraliuosius žmogaus išmokimo mechanizmus. Šio straipsnio tikslas yra nors kiek prisiliesti prie galimo dinaminio metodo, kai kuriamos L2 mokymo strategijos, panaudojant įvairaus pobūdžio gyvus, interaktyvius, bendrus ir jausminius indėlius ir gaunamus rezultatus, taip pat ir kai įgyvendinamos kitos sėkmingai taikomos teorijos ir strategijos.

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